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**URBAN AND REGIONAL PLANNING,
AND PLANNING EDUCATION IN INDIA:
AN ANTHOLOGY OF WRITINGS
By Dr. D. S. Meshram**

Volume - II

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Edited By:
Dr. Swati Meshram

About Prof. Dr. D. S. Meshram



Dr. D. S. Meshram born on 16th May 1941, received Bachelor's Degree in Arts (B. A.) and Bachelor's Degree in Architecture (B. Arch.) from Nagpur University, and Master's Degree in Town Planning (MTP) from School of Architecture and Planning, Anna University, Chennai. In addition he has also done L.L.B. from the Punjab University, Chandigarh; and Ph.D. from Institute of Development Studies, University of Mysore, Karnataka.

Dr. D. S. Meshram, after starting his career as teacher in Guru Ramdas Postgraduate School of Planning, Guru Nanak Dev University, Amritsar, switched over to Military Engineering Services and then joined Town and Country Planning Organization (TCPO), Ministry of Urban Development, Government of India. After retirement he again returned to teaching. He has held the prestigious position of Chief Planner, TCPO for over 12 years and was responsible for elevating the status of Chief Planner to Joint Secretary in Government of India. After his retirement from the TCPO as Chief Planner; Government of Uttarakhand appointed him as Advisor, Urban Development. He has been a member of the Delhi Development Authority and also of New Delhi Municipal Council.

He visited number of countries and represented India on various forums abroad. He has presented papers in national and international seminars and conferences. He has authored 100 technical papers, published in ITPI Journals, Souvenirs, Technical Papers of National Town and Country Planners Conferences. Dr. D. S. Meshram co-edited the book published by internationally reputed publishers like 'Urban and Regional Planning Education – Learning for India' by Springer in 2016; and 'Sustainable Development Goals and Indian Cities – Inclusive, Diversity and Citizen Rights' by Routledge 2021. And also edited a book titled as 'National Conferences of ITPI – Conclusions and Recommendations over Sixty Years' in 2015.

"Urban Development Plan Formulation and Implementation (UDPFI) Guidelines" were prepared at the behest of the Ministry of Urban Development, Government of India, under his guidance, he being Chairman of Technical Committee. Number of Master Plans have been prepared by him including Development Plan of Universal Township of Auroville.

Dr. Meshram was elected as President of Institute of Town Planners, India unanimously for more than 18 times. He is also the Vice President of Commonwealth Association of Planner, since 2017.

Dr. D. S. Meshram initiated the idea of organizing Annual Zonal Conferences by the ITPI on themes of regional interest for better interactions among members of the Regional Chapters. He was the founder Chairman of All India Board of Town and Country Planning Education of AICTE for over 10 years during which he was responsible for preparation of Model Curriculum for Undergraduate and Postgraduate programs in town and country planning. He has been instrumental in taking up the matter of starting undergraduate planning program in the country with the then Ministry of Education, Government of India. He was also responsible for initiating the idea of starting the Integrated Planning Program leading to M. Plan. He prepared DPR for Ministry of Human Resource Development and made presentation to the erstwhile Planning Commission to start new Schools of Planning, as a follow up of which two Schools of Planning and Architecture were started one at Bhopal and other at Vijayawada. While he was Professor on Devraj Urs Chair at the University of Mysore, the remuneration he was getting for this assignment was donated by him to the welfare activities of planning students of the Institute of Development Studies, University of Mysore. Taking into consideration his contribution in planning education, Council ITPI instituted "Best Thesis Award for Undergraduate Students of Planning" on his name, and also bestowed upon him the title of "President Emeritus, ITPI.

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ITPI VISION

‘To promote dynamic, inclusive and integrated town and country planning practice, education, research and institutional mechanism for vibrant, sustainable and resilient spatio - economic development of towns, cities and regions’

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FOREWORD



Planning of town and cities in India dates back to the Vedic period, but town planning as specific professional discipline is of relatively recent age. However, the idea of making a Development Plan for a city is not new to India. Most of the cities in India which left their imprint in the history of civilizations were built on the basis of well-conceived plans like Patliputra, Varanasi, Nalanda, etc. In the twentieth century, capital cities of Chandigarh, Bhubaneswar, Gandhi Nagar, and several other new towns such as Jamshedpur, Bhilai, Durgapur, Rourkela, etc., were also built according to well-conceived Master Plans.

Statutory process of preparation of Master Plan in India was inspired by the erstwhile comprehensive planning system envisaged under the Town and Country Planning Act, 1947 of England, United Kingdom. However, a need was felt to have a Comprehensive Town and Country Planning Act in India for making provision for preparation of Master / Development Plans, on the lines of U.K. Accordingly, the Institute of Town Planners, India in collaboration with the Central Town and Country Planning Organization (TCPO), Government of India, drafted the Model Town and Regional Planning and Development Law, which formed the basis for various States to enact Town and Country Planning Acts, with modifications to suit to their local conditions.

The momentum in town planning activities, however, was generated after the Third Five Year Plan when urbanization was recognized as an important aspect in the process of economic and social development of the country and the Central Government made a provision of 100 percent financial assistance for the preparation of Master Plans for almost all the major cities and their surrounding areas. This provided the necessary impetus for enhancing the sphere of town planning activities in the country. Action was taken for enacting Town Planning Legislation, besides, setting up of Town Planning Departments in the states and union territories and augmentation of facilities in education and training in the field of town and country planning.

At present India stands at a critical threshold, because it is estimated that by 2051, the total population of the country, would be in the order of 1.70 billion and India would become the most populous country in the world, with per capita availability of 0.19 ha land. Over 820 million people will be living in 6,500 urban settlements including 15 mega cities, and 85 metro plus cities constituting 48 percent of the total population. This clearly indicates that the task of urban and regional planning would be enormous in the foreseeable future and efforts will have to be made to cope up with this situation in terms of trained manpower.

The economic progress of the country, no doubt is deeply linked with the quality of manpower to improve the capacity of rural and urban local bodies in order to prepare them to plan for themselves. This is crucial because urban settlements as generators of economic momentum, contribute 60 percent to the national GDP, and by 2051 this share is likely to rise to about 75 percent to 80 percent. In this direction human resource development through quality town and

country planning education is one of the most effective vehicle of transformation, and is an essential element for sustainable development of human settlements.

Spatial planning activities would increase further with the growing population of the country, liberalization of economy and devolution of planning functions to *Nagar Panchayats* and *Gram Panchayats* i.e. rural and urban local bodies, under 73rd and 74th Constitution Amendment Acts. Besides, the initiatives of the Central Government to put the urban and regional planning and development on mission mode will further enhance the requirement of qualified Town and Country Planners manifold for preparation and implementation of the schemes of Central and State Governments.

It is important to note that Prof. Dr. D. S. Meshram, President Emeritus, ITPI has written 100 papers for ITPI Journals / Souvenir / Technical Papers of National Town and Country Planners Conferences, focusing on Urban and Regional Planning, and Planning Education in India and on other related aspects. From these papers, the message which is very loud and clear is that urban and regional planning and development process should be dynamic, participatory, self-sustaining, inclusive, sustainable and resilient and should contribute in making urban centers generator of economic momentum, where quality of life would be conducive to efficient working, and pleasant living for all, including poor sections of the society.

This document compiled, collated and edited by Dr. Swati Meshram, will be useful to policy makers, administrators, academicians, researchers in general and to planning students in particular, as well as all other connected with or interested in urban and regional planning, and planning education, as it covers wide range of subjects like environmental planning, smart cities, hill area development, inclusive and sustainable development, master / development plans, regional plans, resource mobilization, development management, urban and regional information system, and many more aspects relevant to town and country planning.

These two Volumes are collection of 100 papers written by Dr. D. S. Meshram, President Emeritus, ITPI for ITPI - Journals, Souvenirs and Technical Papers of National Town and Country Planners Conferences. I feel that members not only from academic and research but also from profession should take inspiration from Dr. D. S. Meshram, President Emeritus, ITPI and inculcate the habit of writing papers in ITPI - Journals / Newsletter.

N. K. Patel
President, ITPI

PREFACE



The book in hand is the Second Volume of “Urban and Regional Planning, and Planning Education in India: An Anthology of Writing by Dr. D. S. Meshram”, for which out of 50, only 35 papers have been selected, because of limited availability of pages it is not possible to publish all the papers written by Dr. D. S. Meshram, which comprises of varied themes, like - Master Plans; Regional Plans; Planning and Development of Hill Areas; Rural Development and Planning; Challenges and Approaches of Urban Planning and Development; Development of Small and Medium Towns; Interface between Planning Education and Industry; Planning and Development of Coastal Areas; Planning Legislation; Urban Development Management, etc. It needs to be noted that some of the papers date back to 1987, but their relevance still holds good in the present day scenario and therefore, have been included in this volume. In all these paper generally no changes have been made so as to retain the originality of the papers. It is also important to mention that Dr. D. S. Meshram has also written some papers in Hindi.

The first paper on the theme “Master Plan of Auroville Universal Township, Perspective - 2025” is based on the original concept given by the Mother which envisages inter twinning of four major fundamental zones - residential, cultural, international and industrial with peace area in the center. Innovative models and techniques in the field of land development, water conservation, rainwater harvesting, building technology, afforestation, community participation, beside UDPFI Guidelines; have also been incorporated in the Master Plan, and it is hoped that Master Plan would facilitate in channelizing the future growth and development of Auroville as enshrined in the Charter of Auroville Foundation.

The topic “Emerging Challenges and Approaches in Urban Planning and Development” underlines that the massive scale of urbanization; technological advancements; fast changing urban structure and urban life styles, increasing complexities of urban problems; inadequacy of shelter and basic civic services; unmanageable urban sprawls, slums and squatter settlements; growing insecurity and rising crime; deteriorating environmental conditions would further become more acute and pose a greater challenge to the efficient planning, development and management of towns and cities.

The theme “Planning and Development of Hill Areas: Issues and Options” argues that focus of hill area planning and development should be to arrest further damage to the fragile mountain eco - system and to promote development without destruction. The paper further elaborated that there is an intimate and inseparable relationship between environment and development, which needs to be respected.

The paper on the theme “Urban and Regional Planning Reforms and UDPFI Guidelines” explains the dimensions of urban growth necessitate to make Mater Plan approach dynamic enough to incorporate the changing needs of the society from time to time. Therefore, the Urban Development Plan Formulation and Implementation (URDPFI) Guidelines recommended that the planning process should focus on people’s participation.

The National Commission on Urbanization observed that the involvement of citizens in decisions making is almost negligible in our country, therefore, the present system is neither truly democratic nor it is representative forum for projecting the views of the people. Accordingly, the paper on the

theme “Implementation of Development Plans for Good Governance” suggest that the agenda for good governance, should aim at participatory approach in decision making, efficiency in delivery of public services besides transparency and accountability.

“Preparation of Urban Maps through Remote Sensing for Sustainable Development” is the next topic which highlighted that the maps generated for 25 towns under the Urban Mapping Scheme will be helpful for planning, management and monitoring, and will also provide vast scope in improving the decision making process. Besides, these maps will facilitate preparation of land use plans, Master / Development Plans, monitoring of unauthorized urban development, and planning for utilities. The paper also makes the case to extend the scheme to all the towns, irrespective of their size.

Advancements in telecommunication, computer and satellite technology in the twentieth century has not only improved the connectivity but have also affected the life style of people; and various other facets of human activities. Use of Information Technology and computerized inventory in planning at central and state level with proper networking have been propagated in the paper titled as “Information Technology for Urban Planning and Development” so that all the Plans and planning records can be kept in electronic and optical media for proper storage and retrieval. Yet another paper on the related aspect is “TCPO from URIS to Urban Observatory” which narrates the journey of TCPO and showcase the work of TCPO, with reference to developing Urban and Regional Information System (URIS) and it’s initiatives in setting up of Urban Observatories in the country.

The paper on “Strengthening Urban Infrastructure under IDSMT” bring into light the absence of concerted efforts for the development of small and medium towns, due to which the available infrastructure in these towns could not provide the required support for holding the population and serve the hinterland well, as a result, people from rural areas by-pass smaller settlements and migrate to big cities, putting extra pressure on infrastructure of large towns. Therefore, there is an imperative need to develop small and medium towns in addition to developing larger cities. Yet another paper related to same aspect is “Effects of Inadequacies of Infrastructure and Services on Urban Planning and Development” which focus on inadequacies of urban infrastructure specifically in large urban centers, which are considered to be generator of economic momentum, but display a picture of squalor and unhygienic conditions.

Growth of urban population is attributed mainly to natural increase, rural-urban migration, reclassification of towns including changes in their boundaries, and addition of new towns, however, emerging trends show that urban settlement system shall be further skewed. Thus, planning and development of urban areas will depend on the absorptive capacity of these urban centers and their ability to maintain the productivity level. Accordingly, efforts have been made to suggest agenda for action for urban development planning in the paper titled as “Urban Development Planning: Agenda for Action”.

“Town and Country Planning Legislation in the Golden Jubilee Year of India’s Independence” is the theme of the next paper, which lays emphasis on the enactment of comprehensive town planning legislation, so that the states and union territories undertake urban development programs within the framework of a statutory Plans. The 73rd and 74th Constitution Amendments have laid the basis, for the first time for the third tier of the government, accordingly, this paper communicates that it is the time to respond to this challenging task in the quickest and most efficient manner to make this third tier of Local Government - a reality, in the Golden Jubilee year of India’s independence.

The impediments like lack of social responsibility, unemployment and under employment, imposition of western concepts of design and planning in the indigenous setting of various regions of the country, needs to be reviewed in the right earnest so that capital cities could be managed in a rational and viable manner. A common strategy of the development of all the State Capitals, may not be feasible and practicable, due to their locations in different settings therefore, regional approach taking city-region into consideration has been advocated in the paper on “Development Management of Capital Cities”

There are three papers in the sequence dealing with rural planning and development, the first being “Rural Urban Interface in the Context of the 73rd and 74th Constitution Amendments: An Overview” which narrates that these two amendments in fact are the first serious attempt to ensure adequate constitutional obligation so that democracy in the rural and urban local government is stabilized. It is a pointer to the determination of the States to bestow power to the people to plan for themselves and participate in the decision making process of preparation of Plans for economic development and social justice by *Panchayats* and Municipalities. The second paper which also focus on rural development is “Rural Development Planning in Retrospect and Prospect”. This paper pronounces that the 73rd and 74th Constitution Amendment Acts have added new dimension in rural development planning by revitalizing the concept of district planning and rural-urban continuum. However, in order to place rural development planning on a firm footing it would be essential to integrate the rural-urban development within a spatial development frame drawn at district level. While the third paper on the related theme “Rural Planning and Development: Issues and Strategies” underlines that agricultural development often produces raw materials which can become a basis for industrial activities and development of services within the rural area. However, rural development requires comprehensive and integrated planning and development. Accordingly, Regional Planning approach, which is both integrative and comprehensive, would be more appropriate in tackling the complex rural problems, the paper argues.

The economic progress of the country is deeply linked with the quality of manpower, therefore in order to improve the capacity of the rural and urban local bodies, to prepare the Plans for themselves, (as enshrined 73rd and 74th C.A.A) human resource development through town and country planning education is one of the most effective vehicle of transformation and change. Accordingly, the planning education needs to be oriented so as to achieve an interface between planning education and industry which will ultimately improve the management capabilities of planning and development departments and organizations at various levels, as per the paper on “Interface between Planning Education and Industry”.

The theme on “Conservation of Manmade Heritage: Some Legal Aspects” discusses the issues related to the Ancient Monuments and Archaeological Sites and Remains Act, 1958; which envisages protection and preservation of heritage sites and paper further underlines that the Archaeological Survey of India has no control over the areas beyond protected limits. Therefore, the areas around the monuments need to be notified as a development area under the State Acts and restrictions can be imposed for controlling and regulating haphazard developments in and around these monuments; and if certain inadequacies either of legislative or organizational or both are noticed, can be made up once the areas are notified.

The paper on “Emerging Paradigm of District Planning in the Context of 74th Constitution Amendment Act” disseminates that the 73rd and 74th Constitution Amendment Acts relating to *Panchayats* and

Municipalities, while providing constitutional support have again brought to fore the importance of district planning. The paper argues that the physical planners with their background supported by sound professional experience would be better placed to lead the planning team for preparation of District Plan. The next paper is also related with the aspect of planning legislation and focus on “Planning Legislation in the Context of 73rd and 74th Constitution Amendment: Some Thoughts”. This paper discusses the provisions of Article 243-W of the Constitution Amendment, which is not mandatory and is left to the State Governments to decide at their discretion as to which functions are to be assigned to the municipalities as there was no intention to encroach upon the autonomy of the states by making mandatory provisions in the Constitutional Amendment to delegate powers and responsibilities to the urban local bodies. Yet another paper also focus on the topic “Constitution 74th Amendment Act, 1992 and Role of Development Authorities, and Town Planning Departments” makes the case to allow town and country planning departments, development authorities, and special function agencies operating in the municipal areas to continue, as the present local bodies are not having expertise and experience to make operational the functions assigned to them under Constitution 74th Amendment Act, 1992.

The theme on “Application of Remote Sensing Techniques as a Tool for Preparation of Urban Maps” takes into consideration the rapid growth of urban areas both physically and demographically which has activated changes in terms of town structure, land use pattern, physical infrastructure and socio-economic activities which have a direct bearing on the total urban environment. But mapping of these towns and cities has not kept pace with the growth, as a result many towns do not have up-to-date base maps. The paper highlights that the use of modern techniques of aerial photography and remote sensing would not only facilitate updating of existing base maps but also preparation of base maps for towns and cities by adopting a computer based Geographic Information System.

Hills as the natural bio-sphere reserves are of special significance both from ecological and economic point of view and need adequate attention for protecting their environment and development of resources. Accordingly, hill areas have been receiving the attention of the State Governments while states have initiated certain programs and schemes from time to time however, the paper “An Approach to Hill Area Planning and Development” suggested to integrate all these programs and schemes both horizontally and vertically.

Master Plan Delhi, 1962, laid emphasis on Mass Transit System; and MPD - 2001 suggested Light Rail; while National Capital Region (NCR) Planning Board propagated that integrated system would be more affordable for Delhi than the RITES proposal, which could also be implemented easily in the short run postponing the costlier and more technically complex system suggested by RITES. Accordingly, the paper on the topic “MRTS for Delhi: Need to Super Impose Proposals of DDA, NCRPB and RITES” suggest to superimpose the proposals of DDA, RITES and NCRPB to understand what type of scenario emerges and then take the decision, accordingly.

The contemporary planning and development has brought about realization of the need for Comprehensive Town Planning Legislation at the state and local level. Therefore, the paper on the theme “Town and Country Planning Legislation: Some Basic Issues” emphasized the need for the enactment of a comprehensive Urban and Regional Planning Legislation by all the states and union territories so that urban planning and development could be conceived in a regional perspective beyond the city limit.

The theme “Development and Management of Coastal Areas: Legal and Operational Issues” underlines that the development control within 500 meters, as stipulated in the CRZ Regulations, is indeed, the first line of defense against despoliation of sea coasts and beaches, however, the increasing pressure of development on the coastal areas requires to be channelized within the framework of a Regional Plan, encompassing a bigger area so that concentration along the coastal stretches are prevented. The next paper also focused on the same aspect i.e. “Planning and Development of Coastal Areas” observed that the changing orientation of human activities and increasing awareness of environmental issues calls for development and management of coastal areas in an integrated manner, but preparation of these plans in piecemeal is not sufficient because it is essential to demonstrate to the masses, that the oceans are the source of their food, mineral and energy which is also essential for the survival of human beings.

Singrauli area, located on the borders of Uttar Pradesh and Madhya Pradesh States has been going through a process of fast industrial development, since 1960. This fast pace of industrial development in the area has however, resulted in diverse environmental problems and development constraints which are jeopardizing a sustainable development of the area. Accordingly, “Singrauli Regional Development Plan”, have been prepared by TCPO with focus primarily on sustainable, environmentally clean, and safe development so that environment and ecology are not made a casualty in the growth process, for checking the over urbanization in few metro cities.

The Paper on “Trend and Pattern of Urbanization in India” states that the existing spatial pattern of urbanization if allowed to continue, urban growth would get further concentrated in few towns which are presently highly urbanized and may reach a stage where the carrying capacity of these towns will not be able to support such high levels of urbanization. The paper further observes that there are certain areas within the country, which are rich in resources and are having development potentials for supporting a much higher level of urbanization but due to lack of development, these areas are economically backward and underdeveloped and therefore needs to be considered for priority development, for checking the over urbanization in few metro cities.

The theme “Settlement Planning: Issues and Imperatives” narrates experience of last four decades of the country, which shows that the field of settlement planning has not only expanded in scope but the basic premise have also changed. While the achievements of the existing practice of Master Plan approach cannot be negated, but in the process certain issues have come to the fore which if examined carefully could help in re-defining the spatial planning process in the country.

The theme “Town Planning Schemes as Tool for Plan Implementation and Public Participation: Legislative Framework” focus on the comparative study of the legislative provisions of Gujarat and Maharashtra States and in order to make the Town Planning Scheme a self-financing instrument recommends to minimize the excessive delays encountered in processing and implementation besides resolving other administrative bottlenecks so as to improve the system of land title and registration of records which pose major constraints in successful implementation of TP Schemes.

“Planning and Development of Metropolitan Cities: Need for Metropolitan Decentralization” noted that the metropolitan problems cannot be solved only by local decentralization of activities in and around metropolis but there is a need for considering the decentralization of metropolitan and other growth centers from the point of view of overall urban development strategy and settlement perspective. The paper further elaborates that containment of existing and would be metros by

controlling their unrestricted growth should be a hall-mark of the metropolitan decentralization strategy.

Spatial planning though recognized as significant, has yet been found wanting proper recognition. Emphasis is mounting. Institutional and legal changes are being recommended by various Committees and Task Forces. However, with ever increasing level of urbanization sphere of spatial planning activities will increase many folds for which the present strength of physical planners is grossly inadequate. Accordingly, the paper on the topic “Professional Requirements of Spatial Planning towards 2001” by using different methods for different levels of deployment of planners estimated the total strength of 7000 spatial planners by the turn of the century for effectuating and actuating the spatial planning in a proper manner, in the country.

Lot of efforts have been made so far, for settlement planning but in a disjointed manner. Physical and Economic Plans are not integrated. Planning activities in general have so far been taken up, on ad hoc basis, while problems on the other hand have been intensifying. Accordingly, the topic on “Policy Options for Planning and Development of Settlements and Shelter, towards 21st Century” points out that urban planning requires broader approach focusing on regional perspective, by adopting multiple policy options in an integrated manner so that by the turn of the century it is possible to stand on a more stable footing with least possible problems / challenges.

The paper on the theme “Urban Development Management: Issues and Options” observes that the increasing urban growth has created many problems related with urban development management, which can be broadly categorized as planning and development; socio-economic; and political and administrative. Each category having varying dimensions and one can dwell upon them in any length. However, the paper suggest to adopt multi-pronged approach covering all aspects, as urbanization is not isolated or singular phenomenon, in fact it concerns and embraces every aspect of our life.

The writings of Dr. D. S. Meshram, President Emeritus, ITPI; covers varied and numerous range of topics on urban and regional planning and development, and education and are absolutely dedicated to the field of planning and development. In fact the knowledge he has gained through his long and illustrious career is reflected in his writings. I am sure, that both the volumes of ‘Urban and Regional Planning, and Planning Education in India: An Anthology of Writings By Dr. D. S. Meshram’ will be helpful to all the readers including policy planners, planning managers and professionals, academicians and researchers because the wide gamut of urban and rural planning has been covered in his papers.

I am thankful to Shri Shyam Lal Mehra, Librarian, ITPI who has helped me in locating the Journals / Souvenirs/ Technical Papers of the National Town and Country Planners Conferences held since 1987, and also to Shri Chetan Prabhaker, Assistant Office Secretary, ITPI for his assistance, in word processing, etc.

I would like to express my sincere thanks to Shri N. K. Patel, President, and Shri S. B. Khodankar, Secretary General, Institute of Town Planners, India for assigning this work to me, and would consider it an honor to provide further assistance in future as well.

Dr. Swati Meshram
Editor

ACKNOWLEDGMENTS



Imprints of well thought out principals of city planning can be witnessed in Mohenjo-Daro “the mound of the death” (2500 BC) and Harappa in India, (now in Pakistan) during Indus valley civilization, which comprises of well-planned street grids and an elaborate drainage system. Thus, like other countries, India can truly boast of having a tradition of town planning based on well thought principles. However, after independence the town planning profession was struggling to get established as an independent discipline, separate from other disciplines like engineering and architecture. The canvas of town and country planning is much wider than engineering and architecture, because it looks beyond the construction and design of building, or group of buildings and not only covers the physical aspects but takes into consideration social and economic aspects of all the sections of society. In fact it conceives town in totality and provides for physical infrastructure - water supply, drainage, sanitation, solid waste management, power / electricity, etc.; and social infrastructure - health, education, parks, playground, etc.; in addition housing, trade and commerce, industries, traffic and transportation, etc.

For fostering Town and Country Planning Profession, Dr. D.S. Meshram as a Chief Planner of Town and Country Planning Organization (TCPO), Ministry of Urban Development, Government of India, in addition to his routine work organized the national workshop during 1995 to settle the issue, because in some quarters it was argued that the present system of preparation of Master / Development Plan is static and needs to be changed. Accordingly, the national workshop on the theme “Master Plan Approach: Its Efficacy and Alternatives” was organized in which not only planners, architect, engineers but policy maker, administrator (Secretaries of Urban Development of State Governments), researchers and academicians participated. While summing up the session on “Alternatives to Master Plan” the Chairman mentioned that “-- there is no alternative to Master Plan -----, but there is a scope to improve it further, and ----- only alternative to Master Plan is better Master Plan”. As a follow up of this national workshop, Dr. D.S. Meshram, as a Chief Planner, TCPO impressed upon the then Ministry of Urban Development, Government of India, the need for preparation of guidelines for ‘Urban Development Plans Formulation and Implementation (UDPFI)’ and requested the Ministry to assign this work to Institute of Town Planners, India. Accordingly, Guidelines were prepared under his technical guidance, he being the Chairman of Technical Committee for preparation of these Guidelines, which have been adopted by various state governments. As a Chief Planner, he also prepared, manuals, guidelines and Master Plans for various towns, including Master Plan for Universal Township Auroville, near Pondicherry.

At the international level also, he has demonstrated his commitment for upgrading the status of ITPI; to clarify the same it may be mentioned that Dr. D.S. Meshram, as a President of ITPI, was representing ITPI in Commonwealth Association of Planners. Initially ITPI was clubbed in the Region comprising Pakistan, Nepal, Bangladesh, and Shri Lanka, the term of each country was four years, that is to say the term of India will come after 16 years. He tried to convince the then office bearers of CAP, but as they have not agreed, ITPI withdrew from the membership of CAP and joined the CAP, only when Vice Presidentship was offered to ITPI.

On the aspect of planning education, he realized during 1986-87, that if planning discipline is to flourish in India, it would be essential to start undergraduate level education in planning, as the same was imparted at that time at postgraduate level, since its inception in 1955. He then started making efforts in this direction and called on the then Secretary, Ministry of Education, Government of India, along with Prof. N. S. Saini and Shri S. C. Gupta (1986) and got his consent. After that B. Planning Program was initiated by School of Planning and Architecture, New Delhi (1988). He has also prepared DPR for starting four New Schools of Planning (2006) for Ministry of Human Resource Development, Government of India and made presentation to the then Planning Commission. As a result of his efforts, two new Schools of Planning and Architecture were started one at Bhopal and second at Vijayawada. He was also responsible for initiating the idea of starting Integrated Planning Program leading to dual degrees i.e. Bachelor of Planning and Master of Planning with duration of five years.

It is inspiring for the students community of planners that, Dr. Meshram did his Ph. D. at the age of 72, from University of Mysore, Karnataka. The University appointed him as a Professor on Devraj Urs Chair. It would also be encouraging to note that Dr. D. S. Meshram, has not taken the remuneration as Professor, and donated the same for the welfare of planning students community of Institute of Development studies, Mysore University.

It is also important to mention that Dr. D. S. Meshram has written 100 research papers only for 'ITPI Journal', even though there was invites from other agencies to write articles for their journals.

Thus, it needs no special mention that Dr. D. S. Meshram, has keen interest in planning profession, and also in planning education and research.

I express my deep gratitude and sincere thanks to Dr. D. S. Meshram, for giving his consent for publishing his 100 papers in two volumes; however, it needs to be mentioned it was not possible to publish all his paper due to limited availability of pages.

The work of compiling, collecting and editing of the paper written by Dr. D. S. Meshram, was assigned to the Editor of Institute of Town Planners, India, but due to his pre occupations, it was not possible for him to do the needful. Therefore, we requested Dr. Swati Meshram, who inspite of her busy schedule completed the job in time. We are thankful to her for this gesture, because it was a time consuming and tedious work, as some of the papers were written in 80s, but are still relevant in the present day context.

I express my sincere thanks to the Council Members and Office Bearers of ITPI, who have fully supported to publish the work of Dr. D. S. Meshram, in two volumes titled as 'Urban and Regional Planning, and Planning Education in India - An Anthology of writings by Dr. D. S. Meshram' and hope that it will not only be helpful only to the students of planning but also to academicians, researchers, policy makers, and citizens.

S. B. Khodankar
Secretary General, ITPI

1 | MASTER PLAN OF AUROVILLE UNIVERSAL TOWNSHIP

Abstract

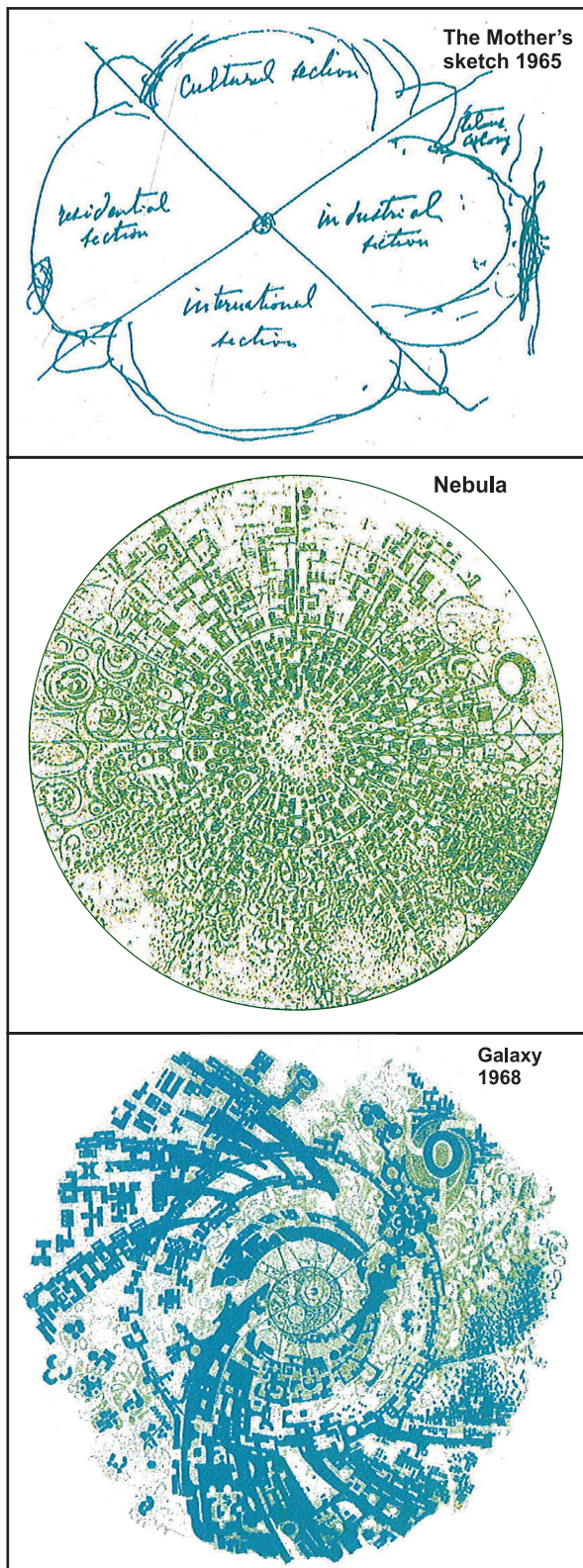
Auroville received the unanimous endorsement of the General Conference of UNESCO in 1966, and is now administered under the Auroville Foundation Act, which describes that Auroville belongs to humanity as a whole, but to live in Auroville one must be willing servitor of Diving Consciousness. Accordingly, Master Plan of Auroville (perspective - 2025) has been drawn on the concept laid down by the Mother in 1965 to make it Universal Township. The concept envisioned close interaction of Auroville with its surrounding to create a holistic model of development that will complement and not divide human settlements as urban and rural. Efforts have also been made in the Master Plan to adopt the planning system as suggested in the Urban Development Plan Formulation and Implementation (UDPFI) Guidelines.

1. INTRODUCTION

The Mother in 1965 laid down the basic concept for the development of Auroville town, delineating important activity areas that will fulfil the vision of making it a universal township. The concept envisioned close interaction of Auroville with its surroundings, to create a holistic model of development that will complement and not divide human settlements as urban and rural. The surrounding green belt will be a fertile zone for applied research in the sectors of food production, forestry, soil conservation, water management, waste management, village development and other areas essential for sustainable development. The results of such innovative methods can be applied / extended to both rural and urban areas everywhere, particularly in India where the urban - rural divide is continually widening. The basic issues which warrant preparation of Master Plan for Auroville on priority are:

- Lack of adequate housing in Auroville due to which it has not been possible to encourage new residents to settle;
- There are still significant patches of land within the city area, not secured by Auroville which are essentially needed to plan and implement cost-effective infrastructure / facilities, such as roads, sewerage, water supply, power and communication;
- Provision of green belt surrounding the city area, as conceived by Mother, dominating agriculture and forest type of uses, so that it is not only integrated with the existing village settlements, but also with environmental activities that promote water harvesting, aquifer recharge, bio-diversity conservation and recreation;
- To prevent non-conforming developments taking place and also to curb speculative elements, which threaten the harmonious use of land; and
- To realize the basic concepts of making Auroville as a Universal Township as conceived by the Mother (Fig. 1).

Fig. 1: The Mother's Sketch 1965



2. AUROVILLE CHARTER

Auroville received the unanimous endorsement of the General Conferences of UNESCO in 1966, 1968, 1970 and 1983. It is now administered under the Auroville Foundation Act (Government of India Act No. 54, dated 29 Sept, 1988). The Basic Charter of the Auroville is:

- Auroville belongs to nobody in particular. Auroville belongs to humanity as a whole. But to live in Auroville, one must be a willing servitor of the Divine Consciousness;
- Auroville will be the place of an unending education of constant progress, and a youth that never ages;
- Auroville wants to be the bridge between the past and the future. Taking advantage of all discoveries from without and from within, Auroville will boldly spring towards future realizations; and
- Auroville will be a site of material and spiritual researches for a living embodiment of an actual human unity.

3. GOALS AND OBJECTIVES

The broad objective of the Auroville Master Plan (Perspective, 2025), as indicated in the Auroville Foundation Act 1988, is to ensure development of Auroville in a planned manner. In order to meet the requirements of the Act and to realize the vision of the township, the specific objectives of the Master Plan (Perspective, 2025) are:

- Laying down broad policies and directions of growth in the principal zones;
- Determining the hierarchy of roads and access ways;
- Establishing the zoning of land uses on all lands falling within 20 sq km area of the township;
- Determining the standards for common facilities like education, health and social facilities for the resident population;

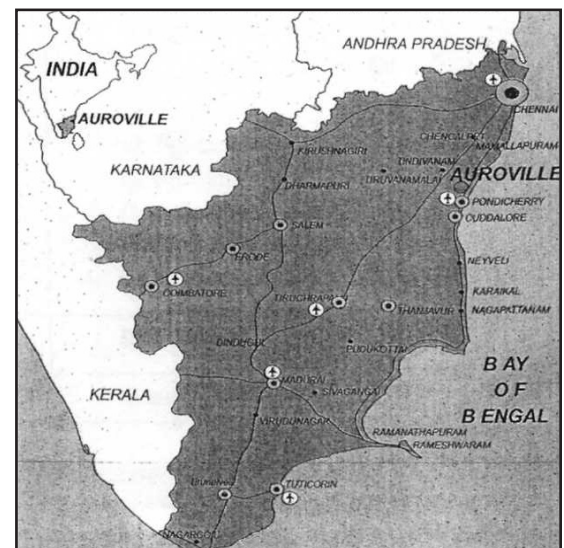
- Identifying the social and physical infrastructural needs of the township;
- Identifying the conservation of historic, ecologically sensitive and aesthetically important areas;
- Developing a mechanism for sustainable development, harmonizing the needs of environment and development;
- Identifying the requirement of investments; and
- Suggesting policies for integrating the neighbouring villages in the Master Plan so as to take advantage and benefit from Auroville's location for their economic betterment.

4. LOCATION AND CLIMATE

4.1 Location

Located at a distance of 160 km south of Chennai on the East Coast Highway of India (Fig. 2), Auroville is just 6 km, north of Pondicherry. Initially the site was a barren plateau traversed by dry canyons and gullied land with hardly any vegetation. Although it is part of Villupuram district of Tamil Nadu, functionally it is closely connected to Pondicherry. The township boundary is in the form of a circle of 2.5 km radius encompassing 20 sq km. Most of the area lies in Villupuram district and is comprised of the *panchayats* of Iruribai and Bommopalayam. Small extents of land are in Kottakuppam, Rayapudupakkam, Mathur *Panchayats* and in Alankuppam, within the Union Territory of Pondicherry. The land is generally of poor quality for agriculture and the entire area was identified as a backward area.

Fig. 2: Location Map - Auroville Township



Pondicherry city with a population of about 1 lakh (1991) is the largest urban center (Fig. 2) at a distance of 6 km to its south while Tindivanam, Headquarters of Tindivanam taluk with a population of over 60,000 is about 25 km to the north-west. Cuddalore town, further south of Pondicherry is another important urban center with a population of about 1.5 lakh. To the north of Auroville, at a distance of about 10 km, lies the Kaliveli tank, a unique environmental resource in the region. To the south is another major water body - the Ustery tank, an important source for irrigation.

4.2 Climate

Auroville has a tropical climate. The dry season usually lasts for seven months from January to July. May and June are the hottest months with occasional showers. The rainy season is mainly from October to January. The average rainfall is 1230 mm a year. The prevailing wind blows from the south-east. The central part of the designated Auroville Township area is above 50 mt from mean sea level. The site slopes down from the center to the periphery. The uncontrolled runoff is the main cause for the erosion of adjoining land. The deeper canyons are located mainly in

the east and south of the designated area. There are a few water bodies or 'eris' in and around the township, of which Iumbaieri is the largest one.

5. EXISTING LAND USE

Since inception of the township, the land in Auroville has changed considerably, from a barren and marginal land in 1968, to today, a developed, and productive land, of course entirely with the efforts of Aurovillians. Out of 20 sq km of the designated area of the township, about 12 % is presently under urban use and the rest is under agriculture, plantation, and other non-urban uses. The land use pattern (Table 1 and Fig. 3), illustrates that in the developed area, about 41 % of land is residential. Public and semi-public use is the next important in the township, accounting above 28 % of the developed area. Commercial, manufacturing and other economic activities constitute above 12 %; while 13 % is under roads and streets serving both urban and non-urban uses.

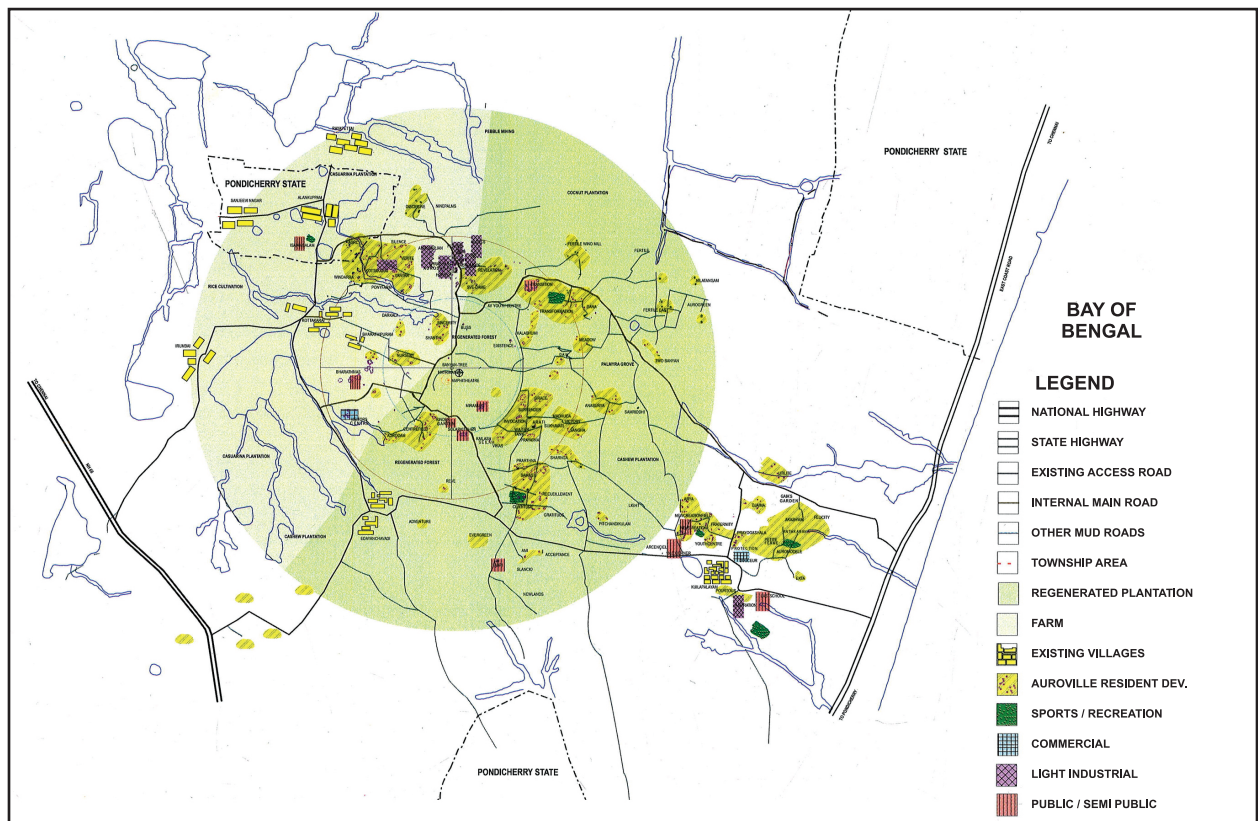
In the township, commercial areas include retail services providing for food and other items of daily necessity, community eating places and the Visitors Information Center - with its exhibition

Table 1: Existing Land Use - 2000, Auroville Universal Township

Land Use		Area in ha	Percentage
A.	Developed Area		
1.	Residential	95	40.9
	a) Village settlements	(20)	
	b) Auroville communities	(75)	
2.	Commercial	19	8.2
3.	Manufacturing and Economic Activities	10	4.3
4.	Public and Semi-public uses including peace area, gardens and area under administration / institution.	65	28.0
5.	Roads / streets	30	13.0
6.	Recreational (playgrounds)	13	5.6
Sub-Total		232	100.0
B.	Unbuilt Area		
1.	Regenerated land	598	34.2
2.	Agriculture	990	
	a) Agricultural and related research	(50)	2.9
	b) Farming	(940)	53.7
2.	Commercial	19	1.0
3.	Water bodies	45	2.6
4.	Canyon, waste and other lands	98	5.6
Sub-Total		1750	1 00.0
Grand Total		1982	100.0

space and sales section of products made in Auroville and the guest houses. While, manufacturing uses comprised of about 100 large and small manufacturing and processing units, the products of which are marketed locally as well as internationally. The extent of land occupied by such units range from small plots of 50 to 75 sq m to 5 ha. The public and semi-public uses include amenities such as, schools, health facilities, and areas occupied by services and utilities. Peace area forming part of public and semi-public uses is the most special area in Auroville. It is the center of Auroville, which contains the Matrimandir - the soul of Auroville, the Urn and Amphitheatre consecrated at the foundation ceremony, the central Banyan tree, the lake and the well laid-out gardens around the Matrimandir. At

Fig. 3: Existing Land Use Plan , Auroville Universal Township



present recreational uses are mainly in the form of a few playgrounds located close to residential communities, such as, the center field and certitude play area.

Roads which provide access to Auroville are the East Coast Road and the Pondicherry-Tindivanam road. However, within the township there are temporary gravel and mud roads providing access road to various facilities / settlements in Auroville, some of which will be replaced once the planned roads are built.

Agriculture and related uses include lands used by Aurovilian's either for food production (including vegetables and fruits) needed by residents or for research in improving farm practices and diversifying cropping patterns; the Auro-orchard and Pitchandikulam medicinal herbal stations are some of the typical examples. In most of the cases both production and research are carried out together. Most of these are based on organic farming practices.

Canyons are a unique feature in the landscape of Auroville and its surroundings. These deep gullies have been formed due to erosion. Some of them are 2.5 km long and 20 to 30 m wide and 2-5 m deep.

There are five water-bodies '*eris*' in the area of which two are large in size, namely the Irumbai *eri* and the Alankuppam *eri*. These are seasonal water bodies which help to irrigate small extents of land, particularly after the rainy season.

6. ASSIGNED POPULATION AND DENSITY

Auroville township has been planned for an ultimate population of 50,000, who will come and stay here for accomplishing a special task to carry out spiritual as well as material research. A systematic development of infrastructure will attract working age persons to Auroville from all over the world, which is projected to be in the range of 15,000 by 2010 and 50,000 around 2025.

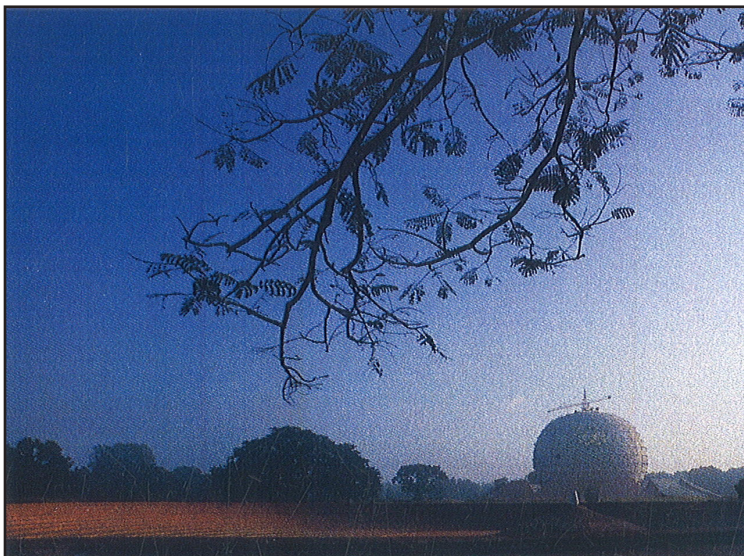
The main concentration of Auroville's population will be in the residential zone. The overall density in the residential zone will be 240 persons / ha. The proposed development would be achieved in a unique way i.e. lower density areas closer to the Crown and, higher density area closer to the green belt, as per the original concept of Mother. The objective of the design is two fold viz:

- To establish that urban areas can and should achieve overall high densities, not compromising on the form, amenities and without sacrificing or reducing the extent of open spaces, which determine the quality of environment and life; and
- To establish that urban areas should avoid, to the maximum extent possible, conversion of agriculture lands for urban use.

The residential zone is proposed to be delineated into ten sectors of 10 ha each approximately. Each of these sectors will be developed at varying densities from 100 persons / ha to 640 persons / ha particularly in high-rise building blocks in a wide range of urban forms. The net residential areas would be about 100 ha which would provide a residential floor space of 1,500,000 sq m (FAR 150) that could accommodate the entire 50,000 persons at an average floor space of 30 sq m / person. The floor space per person will be in the order of 30 sq m and 55 % of the area will remain unpaved.

7. PROPOSED LAND USE

Fig. 4: View of Matrimandir - the Soul of Auroville Universal Township



The entire Auroville township is sensitive from the environmental and ecological points of view. The areas under check dams, regenerated lands, and plantation are some of the important environmental resources for developing the township in a sustainable manner, of course keeping in view the basic ideals of the development of town and the innovative approaches being practised / developed in Auroville. The land use structure, therefore, is based on the premise:

- The built-up area consisting of buildings and developments for residential, cultural, manufac-

turing, commercial and utility uses, international pavilions and the open spaces would evolve around the Matrimandir (Fig. 4), with its garden in the center of the township; and

- The largely unbuilt part consisting of agricultural uses, regenerated forests / tanks, water bodies, channels, and a number of green activities linked to the promotion of sustainable development would encircle the built up area and also act as interface between the city and its bio-region.

There will be an intense and close interrelationship between the city area and the outside rural area, including the green belt, which will be of a synergical nature. Each would complement the other and support the activities in the 'urban' and 'rural' sectors, and encourage rural - urban continuum.

7.1 Land Use in the City Area

In line with the concept, the city area is proposed to have the peace area with the Matrimandir, the Banyan tree, the lake, the amphitheatre and the gardens in the center and residential zone, international zone, industrial zone and cultural zone (Table 2 and Fig. 5) around it.

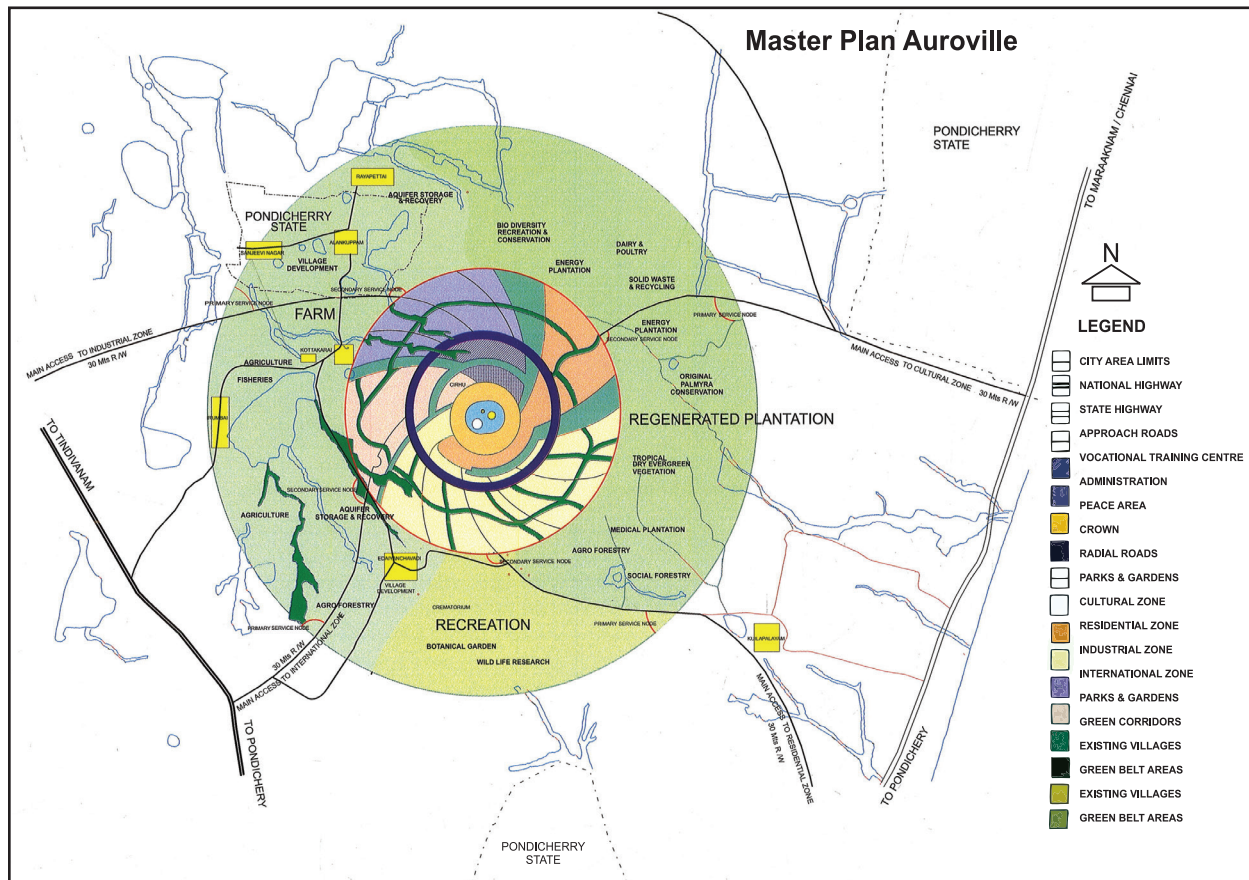
The activities of the cultural zone represent unending education; international zone shows acceptance of Auroville's universality; industrial zone emphasises on the importance of a strong economic base; residential zone gives realization of human oneness; and green belt manifests environmental, economic, spiritual as well as material sustainability. The green belt activities subserve internal requirements of the town as well as the external requirements of the region. All these activities emanate from the central theme of living and working for an actual human unity - the underlying message of all religions and philosophies - the Divine Presence, which is signified in the peace area by the Matrimandir, the timeless banyan tree and the amphitheatre containing the soils from all parts of India as well as from all over the world.

There is another special use zone, which will travers all the four zones in a concentric fashion, with a width of about 75 meters, consisting of a circular road with buildings facing it. This is

Table 2: Detailed Land Use in Auroville Universal Township, 2025

Use	Area in ha	%	Remarks
1. Residential	121	24.64	Residential Zone 80%other zones 20 %
2. Commercial	20	4.10	Mostly in Crown Area connecting the zones
3. Industrial	56	11.40	Industrial Zone / Manufacturing units
4. Public & Semipublic	159	32.38	Peace Area
a. Matrimandir	(28)	(5.70)	International Zone
b. Pavilions	(38)	(7.73)	Cultural and Residential industrial and
c. Educational and cultural	(73)	(14.86)	other zones
d. Administration, utilities and other uses.	(20)	(4.07)	
5. Open space and recreation	46	9.36	To be provided in all zones
6. Transport and communication	89	18.12	To serve all zones.
Total	491	100	

Fig. 5: Proposed Land Use Auroville Universal Township Master Plan



termed as the 'Crown Area'. This Crown Area will provide most of the service facilities required to support the activities in the proposed four zones mentioned above. The development in the Crown Area will naturally be somewhat different, depending upon its proximity or interface with each zone. For the purposes of zoning regulations, the Crown Area is considered as separate zone under each of the four zones.

In the proposed land use structure public and semi-public uses constitute a large percentage of the total area because Auroville is conceived and designed as a Universal Township, which will provide a number of international pavilions, cultural and educational centers of a high order, transport and communications, including roads, cycle tracks, footpaths, etc.

7.2 Land Use in the Green Belt Zone

The unbuilt area in the Green Belt Zone will broadly have three categories of land uses, viz. agriculture and farming, forest and land regeneration and recreational areas. Their development is designed to promote bio-diversity, environmental restoration, land regeneration, water management, and technology transfer of the above activities for wider application. This will make the green belt not only an asset to Auroville and the surrounding villages but also a National Resource Center (NRC) for sustainable development.

7.3 Agriculture and Farming

The western part of the green belt consisting of *eris*, natural drainage channels and village settlements, is reserved for intense agricultural development, covering approximately 500 ha. At present, these lands are vacant or marginally used. They will be utilized to set up prototype farms for raising appropriate crop varieties that can be efficiently produced in different geographic conditions in Tamil Nadu, in order to replicate them for the benefit of farmers in these areas.

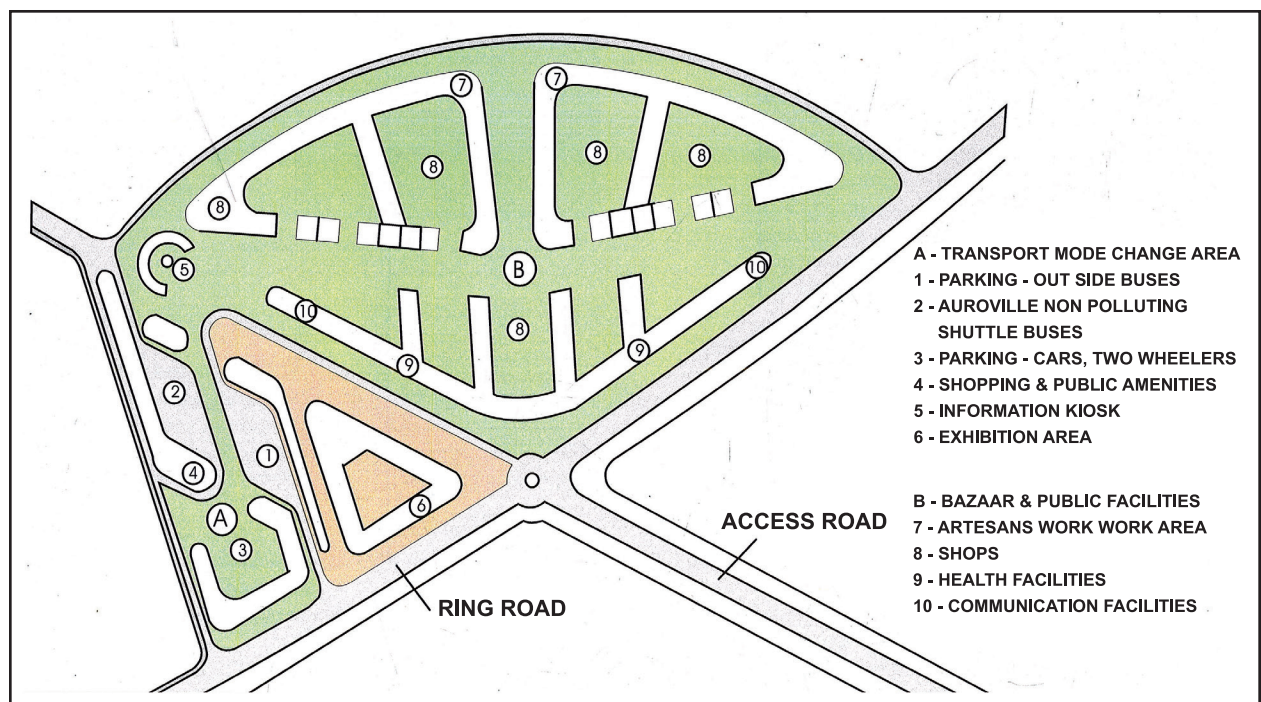
7.4 Re-generated Land and Plantations

The eastern part of the green belt, which has already been developed with dense plantation of trees, acts as a barrier against cyclonic strong winds coming from the coast, which was till recently the main cause for soil erosion, gully formation and degradation of land. These lands occupy about 5,650 ha. They will be utilized to strengthen the ongoing work of land regeneration, re-establishing indigenous forest vegetation, propagation of bio-diversity through gene pools and seed banks, instituting zero runoff parameters and practices. This part of the green belt will also serve the Auroville township to carry out waste water treatment and recycling, solid waste management and experiments for producing alternative energy through use of bio-mass and waste.

7.5 Recreation

One of the several purposes of the green belt is also to provide open air recreational facilities for the inhabitants. An extent of 256 ha has been designated for this purpose, which will also include a botanical garden in addition to agro and social forestry for the benefit of neighbouring villages.

Fig. 6: Service Nodes in Auroville Universal Township



7.6 Service Nodes

Two kinds of service nodes are proposed. These service nodes are provided in the green belt at the intersection of the four main access roads linking the township and the city area. The first one would be called Primary Node and the latter one, the Secondary Service Node. These service nodes will provide adequate parking and transshipment space for changing over to 'non-polluting' mode before entering the city (Fig. 6). These service nodes will also offer other facilities for providing a convenient interface with neighbouring village settlements.

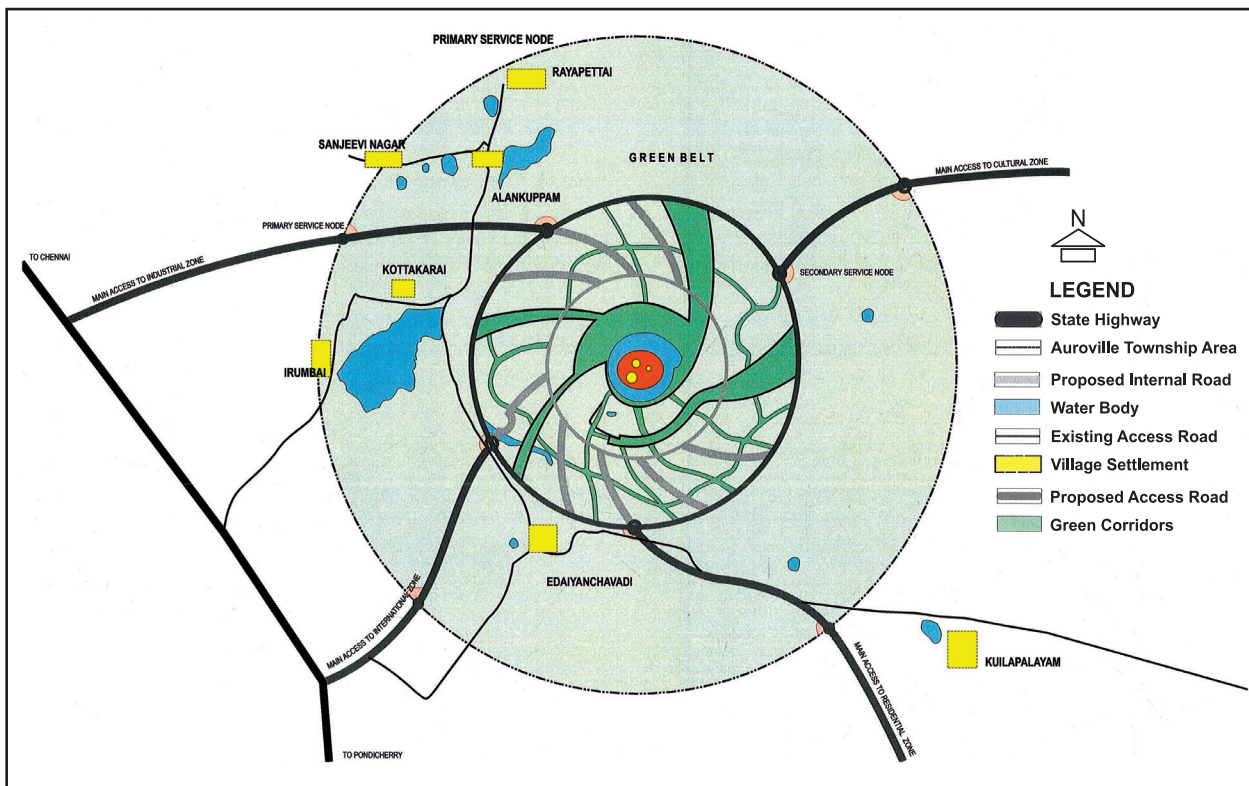
8. PHYSICAL INFRASTRUCTURE AND ROAD NETWORK

The road network, is planned to meet the future requirement of traffic and for smooth functioning of the township. The types of roads and access ways in order of hierarchy (Fig. 7) are as under:

8.1 Traffic and Transportation

Access Roads to Auroville: Four principal accesses are proposed. Two from the Tindivannam-Pondicherry road, connecting the industrial zone and the international zone. The other two accesses are from the East Coast Road (ECR), which would link the residential zone and the cultural zone. Thus, each zone will have an independent access from state / national highways, these roads will provide link to outer ring road of the city.

Fig. 7: Hierarchy of Roads - Auroville



City Ring Roads: Two ring roads are proposed within the city area, one circumscribing the four main use zones and other adjoining the utility zone, which is designated as the Crown Road. The right-of-way of these roads is suggested to be 30 meters. These two ring roads will help in distributing the traffic to the different zones. The entire city area has been envisaged as a "non-polluting vehicular zone". Accordingly, the ring road circumscribing the city area will be used progressively by non-polluting vehicles.

Internal Distribution Roads: The internal distribution roads consists of vehicular roads as well as pedestrian and cycle paths. The rights-of-way of vehicular roads would vary between 18 to 24 meter depending upon its functions.

Pedestrian and Cycle Paths: These will be integrated with open spaces and green corridors. A minimum of 3 meter width would be reserved for pedestrian and cycle movement.

In addition to the main categories of roads discussed above, two bypass roads are also suggested i.e. one in the north and another in the south of the township to facilitate diversion of traffic which is not destined to Auroville.

8.2 Water Supply

The Auroville Region gets an average rainfall of around 120 cm / annum. In spite of such good amount of rainfall, the water situation in the region is not satisfactory because of excessive runoff, limited surface storage and inadequate knowledge of aquifer storage areas. Evaporation losses are also considerable due to high temperature in the area which goes up as high as 38.8°C in June. Hydro-geological studies made so far revealed that there is adequate potential for ground water supply of potable water of good quality as long as there is no saline intrusion due to over-extraction. These studies also revealed that water could be tapped both from open wells (3 to 12 meter below ground level) and tube wells. The estimated total yield from rainwater is 25.48. The runoff itself is estimated between 7.70 mcum and 2.84 mcum giving an average of 5.28 mcum.

The annual requirements of water will range from 0.383 mcum to 3.650 mcum. It is therefore clear that the per capita requirement should be based in such a way that the extraction is within safe limits of availability taking into consideration that the rainfall will not be uniform in all years, and also the possibilities of over-extraction and some withdrawal of water for irrigation purpose. It is, therefore, proposed to adopt the standard of 200 lcpd to meet the total requirements of the township and residential supply will be limited to 135 lcpd. The annual water requirements for a population of 15,000 would, therefore, be about 3 million litre per day or 1.1 mcum per year. Auroville's work in Water Management so far has been characterised by principles of zero runoff, conservation, and recycling and reuse of waste water.

8.3 Sewerage, Sanitation and Solid Waste

Auroville has been experimenting with septic tanks, imhoff tanks, (both individual and at community level), leach pits and root zone treatment of sewerage for compact communities. The use of such facilities will continue in the cultural and international zones as well as in the green belt developments. Separate, partially centralized systems of collection and treatment

will be considered only for the industrial and residential zones to avoid contamination of groundwater.

Sanitation: the approach to sanitation will be through the use of a variety of night soil disposal methods, which include toilets / latrines of various designs and disposal methods. These will include FOLs connected to individual or community treatment facilities. Extreme care will be taken to see that these systems do not pollute the underground water resources on which Auroville and its neighbourhood depend.

Drainage: the storm water drainage system will be provided to fully support the "zero runoff" concept. Already many check dams have been constructed across the canyons and earthen dams along and across roads to divert the runoff into the ground below. In addition, Auroville is exploring rooftop water harvesting and a major proposal for collecting the excess runoff within the green belt and pumping it out to a central lake to be created as a major water management project. The infiltration from the lake would regularly recharge the aquifers and prevent saline intrusion into the aquifers due to over extraction that may occur outside Auroville. The western part of the green belt extending from Alankuppam village to Irumhai village is a good aquifer recharge and storage area, which can be used for water recovery when needed. These proposals will have greater relevance for the ultimate phase, and studies have already been commenced, accordingly.

Solid Waste Management: In Auroville, presently solid waste management, consists of sorting at source, efficient collection and recycling of both organic and non-organic wastes. Incinerable wastes are built in a two chambered LPG fuelled incinerator at 800°C at the Auroville Health Center. Some of the non-recyclable wastes like batteries, rubber items, thermocole, film, glass and PET are stored in a special storage facility until a market or acceptable environment friendly disposal solution is found.

The first phase development is anticipated to generate about 7 to 12 tons of waste based on a per capita generation of 0.5 to 0.75 kg. This would include garden wastes within the city area but exclude waste from the green belt. The waste generated in the green belt would be utilized either as biomass fuel for producing electricity or for conversion into soil nutrients and enriches. The approach to solid waste management will include:

- Finding practical and ecological packing alternatives to reduce non- degradable wastes;
- Sorting wastes at source into 5 or 6 streams - paper, plastic, metal glass, organic, batteries, etc.,
- Converting recyclable wastes into useful products. This would include conversion of compostable material to spoil enriches;
- Using bondable debris as road / building material;
- Using incinerable wastes to generate electricity; and
- Scientific and safe disposal of bio-medical and hazardous wastes.

Auroville with its past experience will initiate and promote the "zero garbage" concept to the maximum, so that no dumping or sanitary landfill is needed. Transportation of solid waste for disposal will also be minimal.

8.4 Power-Energy

Concerned with the ecological implications of energy consumption, Auroville has been experimenting from the beginning with the use of renewable energy sources such as sun and wind that are continuously available, as opposed to fossil fuels (coals, oil, etc.). Auroville's Vision is to become energy independent and self-sufficient, with all its energy requirements met from renewable sources. Auroville, in cooperation with Departments of Government of India, has installed a 36.3 KW solar P.V. power plant close to the Matrimandir, which is the largest stand-alone solar power plant in the country. A unique solar bowl has also been installed on the roof of the solar kitchen which generates enough energy to cook meals for about 1,000 persons a day for the Auroville community. Due to limitations of technology and high cost, Auroville will have to draw its major power requirements for the first phase from the Tamil Nadu Electricity Board grid. Auroville is now drawing 2.1 million KW of power per year from TNEB and its demand in the first phase would be in the order of 20 million KW per year based on the present per capita energy consumption. Conservation measures are expected to bring this down to about 14 million KW. In order to fulfil its energy objectives Auroville is considering two important avenues:

- To build a wind farm in southern Tamil Nadu that would supply energy to the TNEB grid which could be drawn at Auroville; and
- To build gasifier plants in Auroville to draw energy from bio-mass resources in the region. Proposals for pilot plants of 3 MW total capacity are under consideration.

8.5 Tele-Communication

The requirement of 10,000 telephone lines for Auroville is based on the fact that it will have a proportionately larger number of resource persons engaged in several activities of sustainable development which naturally means that use of computers would be more or less, universal. Accordingly, the Auroville telephone services is negotiating with the Department of Telecommunications to fulfil its future requirements of 10,000 telephone lines.

9. SOCIAL INFRASTRUCTURE

The social infrastructure in Auroville will consist of two distinct parts, namely

- The facilities needed by the residential population (which is predominantly located in the residential zone); and
- The other facilities that will be part of the main function of the Auroville Universal Township.

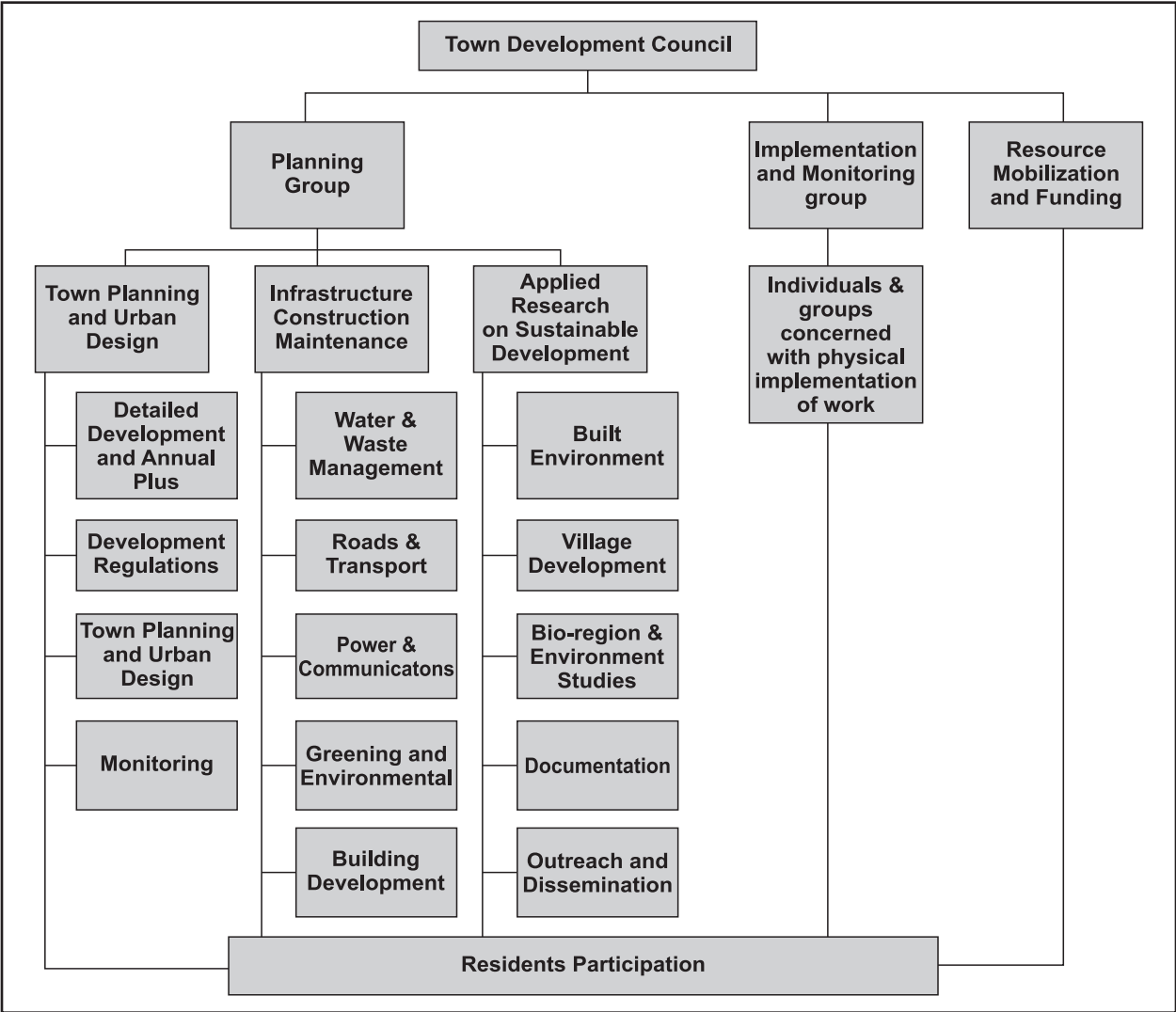
The latter will be located mainly in the International and Cultural Zones. The social infrastructure required for serving the residential population is proposed to be at four levels, namely:

- Cluster or community level serving a population of 250 persons;
- Sector level serving a population of 1,000 persons;
- Neighbourhood level serving a population of 5,000; and
- City / district level initially serving a population of 15,000 persons and ultimately to a target of 50,000 persons.

The social infrastructure has been worked out for a population of 15,000 Aurovilians that is to be achieved in the first phase. The facilities indicated under city / district level are worked out for a population of 15,000, but will also serve the needs of more population as the city grows.

Tourist Facilities: Auroville by its very concept and the diverse activities in which it is involved will draw a large number of visitors, both from abroad as well as from within the country, to experience both spiritual and material experiments and progress. It will also attract a number of general tourists, particularly to visit the Matrimandir and to shop for special handicraft works, for which Auroville is becoming an important center, both nationally and internationally. Facilities for this activity are being provided at strategic points within the city area itself as well as in the service nodes, provided at the 4 approaches to the city. Such facilities will consist of guest houses, restaurants, information centers and other amenities required by tourists.

Fig. 8: Organizational Structure for Implementation of Auroville Master (Perspective, 2025)



10. IMPLEMENTATION AND MONITORING

The implementation of the Master Plan (Perspective-2025) for Auroville requires a more structured organizational setup than hitherto available. Accordingly, organizational structure (Fig. 8) will consist of the Planning Group which will be responsible for preparation of the Five Year Development Plans followed by Annual Plans and Layout Plans / Detailed Schemes within the framework of Master Plan (Perspective - 2025) as suggested in UDPFI Guidelines. The implementation and monitoring of the projects will continue to be the responsibility of the concerned AV group through their project leaders. However, the overall coordination and monitoring of the work will be the responsibility of the Planning Group.

The implementation of the Master Plan will require full support and involvement of the State Government of Tamil Nadu and Pondicherry UT, specifically for:

- Widening of four main access ways to the township, because present accesses are narrow and pass through the village settlements. Besides, in the longer term it would also be necessary to establish the northern and southern by-passes connecting the East Coast Road (ECR) and Tindivanam-Pondicherry Road to facilitate easy and direct access between these highways;
- Securing the lands that are not under the ownership of Auroville but developments are proposed in the Master Plan. For securing land, various options such as land exchange, lease of land, land pooling techniques, etc., have been suggested; and
- The development of villages within the designated area of Auroville as well as those in its 'bio-region'.

11. PHASING AND RESOURCE MOBILISATION

The Master Plan (Perspective - 2025) is conceived to cater to the total population of 50,000 while by the year 2010, it is expected to accommodate 15,000 population. The Five Year Development Plan (2001 -2006) proposals also have been given along with Five Year Program for overall city development and special projects.

In the Development Plan proposals for 2001-2006, Auroville proposes to invest Rs.350 crore on infrastructure development to accommodate the population growth, the sources of funding have also been identified. The summary of the investments for 2001-2006 in residential, international, industrial and cultural zones have also been worked out in detail.

12. REVIEW OF THE MASTER PLAN

During periodical review, the requirement of infrastructure for the increasing population would be assessed in the Development Plans, after every five years and provided as per necessity, (as per UDPFI Guidelines).

Although the Master Plan (Perspective - 2025) indicates a time horizon of 25 years, it will neither be traditional Master Plan nor a static and rigid plan / document. In the framework of Perspective 2025, the Planning Group would prepare the Five Year Development Plan (as suggested in UDPFI

Guidelines) comprising of the priority items to be taken up for development. At the close of the First Five Year Development Plan, the progress / requirements would be assessed / reviewed and second phase of Five Year Development Plan would be prepared on the basis of the feedback obtained from the field / monitoring, which will be followed by further Five Year Development Plans for every five years.

The inputs for the review will flow from implementation of Five Year Development Plans and monitoring of Land Use Regulations. Two Groups, namely Planning Group and Implementation and Monitoring Group will assemble necessary data required for such review. The review process will follow the same process as the preparation of the Perspective Plan and will be approved by the Governing Board in consultation with the supervisory Ministry, namely the Ministry of Human Resource Development, Government of India.

13. CONCLUSIONS

The Master Plan (Perspective - 2025) have been conceived to realize the basic concept of Mother to make Auroville a Universal Township as per Auroville charter - 'Auroville belongs to humanity as a whole, but to live in Auroville one must be a willing servitor of divine concisioners. Auroville will be a place of an unending education of constant progress and a youth that never ages'. Efforts have also been made in the Auroville, Master Plan (Perspective 2025) to adopt Planning System as suggested in UDPFI Guidelines consisting of four interrelated Plans i.e. Perspective Plan (long term policy document) followed by Development Plans (five years), Annual Plans (co-terminus with Five Year/Annual Plans of state government / local body) and Plans of projects schemes.

It is expected that Auroville would endeavour to develop the township in the spirit it has been conceived, which will go a long way in promoting and establishing foundation for sustainable development.

REFERENCES

Town and Country Planning Organisation, Ministry of Urban Development and Poverty Alleviation, Government of India (2001). *Auroville Universal Township Master Plan, Perspective - 2025*.

Ministry of Urban Development and Poverty Alleviation, Government of India (1996), *Urban Development Plan Formulation and Implementation Guidelines*.

2 | EMERGING CHALLENGES AND APPROACHES IN URBAN PLANNING AND DEVELOPMENT

The urban population of the country is expected to be practically doubled from 285 million in 2001, to 546 million in 2025 and the major portion of this increase would be housed in the existing towns and cities. This massive scale of urbanization, technological advancements particularly with the advent of electronic revolution; fast changing urban structure and urban lifestyle; increasing complexities of the urban population; inadequacy of shelter and basic services; growing insecurity and rising crime would further become acute and pose a greater challenges to the efficient planning, development and management of towns and cities. Therefore, in the paper it is recommended to adopt concept of integrated development as suggested in the 74th Constitution Amendment Act.

1. INTRODUCTION

There has been a vast change in the concept of planning and practice of urban development in the country. Specifically, after the independence, starting from piecemeal schemes for improving sanitation and public health conditions to Comprehensive Development Plan for the city as a whole. Although, considerable progress has been made in the sphere of socio-economic and physical development; planning and development of towns and cities has not achieved the desired success. The 21st century will still usher in an era of greater change and therefore, development efforts are required to be geared up to meet the emerging challenges.

Increasing stress, on employment generation and urban poverty alleviation programs, implementing national housing and habitat policy, strengthening third tier of local governance with the implementation of 73rd and 74th Constitution Amendment Acts, pronouncement of new Industrial Location Policy, treating certain infrastructure services at par with industry by giving fiscal concessions, introduction of second phase of economic reforms, steps initiated for creating enabling environment for private sector participation in development process will have for reaching bearing on urban planning and development. All these policy shifts, calls for re-visiting the urban planning and development mechanism to make it more efficient, effective, dynamic, participatory and sustainable.

The massive scale of urbanization, technological advancements particularly with the advent of electronic revolution; fast changing urban structure and urban life styles; increasing complexities of urban problems; inadequacy of shelter and basic civic services; unmanageable urban sprawl, slums and squatter settlements; growing insecurity and rising crime, urban renewal, conservation and rejuvenation of built heritage, deteriorating environmental conditions would further become acute and pose a greater challenge to the efficient planning, development and management of towns and cities. All these trends call for a change in urban development planning system and approaches, which were hitherto mainly based on static conditions, regulatory control mechanism and government budgetary resources.

2. LIMITATIONS OF PRESENT SYSTEM OF URBAN PLANNING

In a statutory process which is in vogue, in the country the Development Plan of a city or town attempts to evolve scientific and rational policies to meet the functional needs of the city and

aspirations of its community in a period of 20-25 years. However, it is felt that the process followed in plan preparation has not been found to be very effective. The basic criticism of such process is that, it neither match the pace of urban growth nor it cope up with the changing development needs of the society. The gap between the plan targets and actual development has thus, got widened. Although Master Plans are generally prepared for the planning areas identified under the respective Acts, they mainly confine to the precincts of city limits and seldom take into consideration the developments taking place on the urban fringe and adjoining peripheral areas, offcourse due to statutory requirements.

The Five Year Plans at the state and the national levels are sectoral in nature, in terms of development goals and, allocation of resources which have neither a bearing on the Master Plans prepared at the settlement level nor have physical and fiscal links to local levels. The organizational and planning linkages between these two cannot be effectively achieved or promoted under the prevailing Master Plans approach.

The National Commission on Urbanizations (NCU) has also highlighted lack of integration between national and state level five years economic plan and master plan at town level. As such master plans of towns and cities need to take into consideration national / regional urban strategies, rural urban migration flows, positive responses to the phenomenal expansion of informal sector, unauthorized and low income squatter, settlements, etc:

2.1 Weak Data Base for Plan Preparation

Systematic spatial and attribute data base, particularly at town level and intra-city level, which is an essential support base for a sound planning exercise, is woefully inadequate. There is no single agency responsible to produce large-scale base maps. As on today, it is estimated that only one-fourth of local urban settlements which have some sort of Master Plans might be having large scale maps showing broad features. Keeping in view the large number of towns, conventional techniques would not suffice to cope with the demand and therefore, efforts for using latest techniques are required to be geared. Scenario regarding availability of attribute data is also not that rosy. Apart from census data, mainly on demographic aspects, intra-city information on urban economic aspects, land use, environmental parameters, urban geology, disaster risks, urban crimes and social disorder is scare and not readily available and every time special surveys are required to be conducted. The system of periodic updating of data base both graphic and attribute, including urban land record management aspects is also almost in non-existence. However, the silver lining is that, with the emerging technology of digital photogramtry, higher resolution satellite images, LIS / GIS computer package, situation in generation as well as periodic revision of data base could be improved substantially.

2.2 Non-comprehensive Nature of Plans

The experience of preparation of Development Plan reveals that it mainly focus on land use planning and generally does not take into account the changing socio-economic conditions prevailing in the city. Needs of all income groups and different strata of society are noi adequately dealt with. Most of the plans do not recognize the existence or emergence of slums and squatter settlements and as such planning proposals do not spell out clear-cut strategy for their

development. In housing layouts, although provision is made for EWS / LiG groups, it also does not cater for informal activities sufficiently. Informal sector is not properly integrated with the land use allocations and the planning standards with the socio-economic conditions in the city. The plans generally lack in proper integration between spatial and economic planning aspects. The proposals are rigid in nature and there is a lack of flexibility in the Development Plan. The public participation merely meets the statutory requirements of publishing the Draft Plans in some newspapers or official gazette. It generally focuses on the end result, rather than the process of achieving it. Greater stress is laid on regulatory and restrictive measures, rather than growth and development oriented instruments for implementing, without adequate provisions for feedback and adjustment during the period of the Plan. Interaction with other line agencies and affected groups in determining objectives, needs, constraints, and priorities have not been very extensive and the ongoing programs and schemes as part of budgetary process and are not properly integrated. The Plan proposals concentrate on the new developments and to a large extent it neglects the problems of existing / old built up areas. Majority of the plans do not give well conceived program of actions for different areas in the towns or city, in a phased manner, as such provision for periodic review of various developmental activities with the changing needs of the towns and cities is also found to be weak.

2.3 Lack of Plan Implementation Mechanism

The Development Plans under the provision of Town Planning Act or Municipal Acts or Improvement Trust Act or Urban Development Act or certain other legislations are prepared with some conception and specific objectives and their implementation is invariably left to the Development Authorities or other line departments, which are not involved in the process of plan preparation. The process of detailing out the city level Plan further down to zonal level or area level action plans, takes a longer time which also affect the implementability of the Plans. In the absence of detailing of Plan into a well structured package of programs and schemes, the complexity and multiplicity of organizations at local, as well as, at state level with overlapping responsibilities and jurisdiction come in the way of proper implementation of urban Development Plans.

There is a general lack of monitoring, review and evaluation mechanism of the Plan. It is generally assumed that the Plan will be implemented through government budgetary resources, which more often do not happen. The Plan does not make an in-built provision for resource mobilization mechanism in the absence of budgetary resources. Procedural and administrative delays in acquisition and assembly of land and lack of coordination among various agencies also hamper the process of the implementation of the Plans.

3. EMERGING CHALLENGES

The twentieth century witnessed the impact of agricultural and industrial revolution in the form of accelerated urban growth, increased level of pollution particularly in larger cities. The advancement of space technology, super communication highways, electronic revolution and urban explosion would have tremendous impact on various sectors of economy beside urban development. The emerging scenario will have greater bearing on planning and development pattern of towns and cities in our country.

3.1 Urban Growth

Growth of urban population is attributed mainly to natural increase, rural-urban migration, reclassification of towns including changes in their boundaries and addition of new towns. During the last decade natural increase accounted for 60% of urban growth while rural-urban migration contribution was estimated at about 20 percent. Emerging trends, however, indicate that there may be some acceleration in rural-urban migration and much of the urban growth will be in and around the existing urban settlements only. Thus, It is quite clear that urban settlement system shall be further skewed. Experience of various developing countries show that economic reforms further accelerate the urbanization level. It is essential that by 2021, about 550 million people amounting to about 41 % of total population would be living in urban areas. In a span of 20 to 25 years almost second urban India would be added to the fold of urban population in the country. As per 2001 census, metropolitan cities which were 23 in 1991, have increased to 35, which will be around 75 by the end of first quarter of the 21st century.

Similarly number of class-I towns numbering 300 in 1991, increased to 423 in 2001. There are 5161 number of towns and cities, with 593 districts and over 3000 municipal bodies. These trends suggest that the major policy for planning and development should relate to the absorptive capacity of the urban centers and their ability to maintain the productivity level. Urban infrastructure and services in cities are abysmally low and the access of the urban poor to these services is poor and appalling. Increasing pressure from rural areas to the urban centers would result in high growth of urban slums and urban poor especially in the fringe areas of the cities. Economic, liberalization policy urban and industrial growth would create serious environmental problems and infrastructure deficiencies.

3.2 Role of Urban Growth Centers

Urban areas are going to play a pivotal role in smooth implementation of various policies and programs of the government, enunciated through economic reforms and liberalization. In order to achieve the desired level of 7-8 % growth in our economy, in the next two decades, adequate level of infrastructure and civic services need to be provided, in and around large urban centers which are to function as the nerve centers of the industry, trade and commerce, construction and service sectors. To enable the small and medium towns to act as growth centers for regional development it would require sizable investment in the infrastructure so as to develop proper rural-urban continuum. Planning for urban development would; therefore assume a greater role for channelising the urbanization process which would promote sustainable urban growth and regionally balanced settlement system in the country.

3.3 UNCHS Habitat - II, Stipulations

Agenda of the United Nations Conference on Human Settlements Habitat—II, suggest for integrating urban planning and management in relation to housing, transport, employment opportunities, environmental conditions and community facilities for sustainable human settlements. To avoid unbalanced, unhealthy and unsustainable growth of human settlements, it is necessary to promote land use pattern that minimize transport demand and save green spaces. Appropriate urban density and mixed land use are of prime importance for urban development. To establish

sustainable land use pattern, proper framework needs to be developed for planning, development and implementation of plans at various levels. For this purpose, efficient and accessible land market, fiscal incentives and land use control measures are required to be promoted. Strategies and policies to facilitate partnerships among the public, private and voluntary sector need to be formulated, besides, management practices to deal with competing urban land requirements. Integrated land information and mapping system would be essential to adopt environmentally sound land use strategies at local level.

3.4 Impact of Information Technology

Planning and development methodologies in the next century are likely to be affected by hi-tech information system, complex institutional network, high energy consuming urban living, material affluence and improvement in living standard. In this rapid urbanizing society, towns and cities are growing very fast and the hi-tech age of electronic, computer, communication system will drastically change the life style, which in turn will affect the planning and design practices. In near future, there will be more of tele-conferencing and tele-administration for more faster communication than commutation. The rate of change in technology is faster than human ability to adjust to the new environment. All these will demand more efficient urban system, thereby requiring newer models of urban planning and development. The ever increasing haphazard growth pose greater challenge to planners for evolving future concepts and techniques which could guide the future trends in urban planning and development in an harmonised manner. It call for planning for a better environment within the available resources and also within the environmental constraints. Over the years, although planning system in the country is well established, it needs to be strengthened in terms of implementation of plans so as to meet the dual challenges of environmental deterioration and resource constraints. The future planning has to take into consideration the morphology and structure of cities which in today's context are congested but not compact with low density on the periphery than the core. The need is to identify newer areas of development, newer resources and newer spatio-economic order leading to rational use of land and other resources to improve the standard of living of the people.

3.5 Implications of Liberalisation Policies

Due to liberalization of economy, cities are bound to grow further, therefore, it is advisable to take stock of development process so as to channelise future growth. Beside cities being engines of progress, would continue to function as centers of cultural, educational, intellectual and technological advances. The solution would, therefore, be in partnership approach to tackle the growing problems, which are not only affecting the economic potentials of cities but also hamper the social cohesion and economic stability. Urban problems are not only growing but its magnitude and dimensions are also becoming extremely difficult to handle and deal with. In this technological age, events move very fast at an intricate speed and the space loses its meaningful dimensions and as such preparedness is required to timely absorb the future shocks. We have to change our planning and development approach to check the emerging chaos of over urbanization and wasteful use of resources. In order to meet the energy crises in human

settlements more emphasis should be on use of solar energy, human energy and other form of pollution free non-conventional energies.

3.6 Statutory Provision of 74th Constitution Amendment ACT

With enactment of Constitution (Seventy Fourth) Amendment Act, 1992 urban local bodies are being strengthened as democratic institutions of self government. It is a first major step in the process of democratic decentralization in the country. Funds, functions and functionaries would be three essential ingredients of decentralization, which would generate a powerful urban voice. An important provision under the Act provides for the setting up of District Planning Committee (DPC) and Metropolitan Planning Committee (MPC) and entrusts the task of spatial as well as economic planning to such locally representative institutions. Therefore, the integration of the District and Metropolitan Plans with the Annual Plans of the state governments as well as the National Plans become pertinent. Constitution of India, for the first time recognizes a framework of physical and economic development for urban areas so as to take care of their planning and development needs. It provides a three tier structure from local to state level:

- At local level - Plans to be prepared by *Panchayats* and Municipalities;
- At regional level-District Development Plans by DPCs and Metropolitan Development Plans by MPCs; and
- At state level-State Spatial Strategy incorporating District and Metropolitan Plans by the State Governments.

4. CONCLUSIONS

Frame base discussions it is quite clear that the concept of integrated development planning has, firmly been embedded in the constitution Amendment Act, 1992 and the need is to identify the emerging perspective for integrated spatio-economic planning from national to local level. It is envisaged that an inter linked framework would comprise (i) national level spatial strategies, (ii) regional level strategy Plans (state and district), (iii) metropolitan Plans, (iv) city and ward level development and land use plans.

REFERENCES

74th Constitution Amendment Act, 1992.

United Nations Conference (1996) Istanbul, Turkey Habitat II

3 | PLANNING AND DEVELOPMENT OF HILL AREAS: ISSUES AND OPTIONS

Abstract

Despite having rich stock of natural resources like forest, hydel power, minerals, etc., hill areas have generally remained poorly developed. Therefore, the plans for hill development needs to highlight the role of each and every sector of development in bringing economic benefits to the region and in maintaining the vital ecological balance by coordinating various economic and social activities in space through the creation of a systematic and functional settlement system. The paper suggest to make attempts to arrest the damage to the fragile mountain eco-system and to promote development without destruction. Besides, the paper also notes that there is an intimate and inseparable relationship between environment and development and argues that the objective of sustainable development cannot be achieved by ignoring the environmental parameters.

1. INTRODUCTION

Even though, hills and mountains contain about 10 per cent of total population of the country, in fact, almost half of the country's population living in or adjacent to the hilly and mountain areas depend directly or indirectly on the resources of the hills. Due to increasing pace of industrialization and denudation of natural resources in the plains, hills are becoming the frontier region of the country. Despite having rich stock of natural resources like forests, hydel power, minerals, etc., hill areas have generally remained poorly developed. On the other hand, increasing pressure of human activates has considerably damaged the ecology and environment of the hill areas. Excessive exploitation of natural resources and implementation of ill-conceived development projects have been threatening the eco-system of hill areas. This has resulted into discernible destructive impact in the plains by way of flash floods, siltation of water bodies, loss of soils and crops, damage to human habitat, etc., ultimately causing irreversible human and economic loss.

2. CLASSIFICATION OF HILL AREAS

For delineating the hill regions. Planning Commission, in 1981 accepted that any area above 600 meters in height from mean sea level be classified as hilly, however, in 1985, any area with average slope of 30 per cent and above was classified as hilly. But in practice, 1981 classification is being used for the purpose of Hill Area Development Program (HADP). Accordingly hill states comprise Jammu and Kashmir, Himachal Pradesh, Sikkim, Manipur, Meghalaya, Nagaland Tripura, Arunachal Pradesh Mizoram and Uttaranchal. The hill areas identified by the Planning Commission may not meet all the requirements of a planning region but are taken as a special purpose; 'designated hill area' for allocating special central assistance for development in these areas.

3. CHALLENGES OF HILL AREAS

Each hill region has its own problems and potentials because of its peculiar setting and conditions but some of the common problems faced by the hill regions, among others, are indiscriminate felling of trees and exploitation of other natural resources, soil erosion, siltation in the downstream areas, flooding of foothills and plain areas, shifting cultivation, faulty agricultural practices, less

extent of cropped land, fragmented and small holdings, heavy pressure on agricultural land, least diversified economy mainly rural and agrarian, large extent of uncultivated wasteland, inadequate irrigation facilities, scarcity of buildable land, emergence of linear urban corridors, inaccessibility of certain areas, uneven development of urban system, deficiency of infrastructure in hill settlements, and lack of preventive measures for ecological damage caused due to the mineral and mining operations.

The hill areas are basically low-density zones, but are experiencing rapid increase in population. Although hill areas are endowed with abundant renewable and non-renewable natural resources, they are dominated by subsistence agrarian economy. In fact, poverty thrives amidst resource plenty hill areas, which suffer from lack of adequate means of irrigation and wasteful, faulty, and age-old agricultural practices.

4. HILL AREA DEVELOPMENT

Although considerable awareness has been created about the deteriorating environmental quality and conditions in the hilly regions, since Stockholm Conference on Human Environment in 1972, the remedial measures are not keeping pace to cope up with the alarming situation. Hill areas have been receiving the attention of concerned state governments from time to time but the thrust for their development was given during the Fifth Five Year Plan when specific programs on Hill Area Development were initiated, however, various components / schemes being implemented under HADP generally lack in physical and spatial dimensions, because most of the schemes are either activity specific or target group oriented and are sectoral in nature, generally lacking in physical and spatial dimensions. In order to have a tangible effect of these programs / schemes in achieving the major objective of ecological balance of hill areas, there is a felt need to integrate all such programs and schemes both horizontally and vertically.

Hills as the natural biosphere reserves are of spatial significance both from ecological and economic point of view and need adequate attention for protecting their environment and development of resources. In spite of the fact that hill regions are ecologically rich but are economically less developed. The hill areas with natural endowments have large economic potentials but need to be utilized in rational and sustainable manner. Considering sensitive and fragile eco-system of hills and mountains, their peculiar character, and problems, development strategies followed in the plains may not be fully applicable for hill environment, rather conservation oriented integrated development approach, be it road construction or development of resources, would be more suitable for planning and development of hill areas.

Hill regions have rich resources of minerals but they are not exploited scientifically, causing degradation of hill environment. The industrial development in the hill areas has been very poor and whatever industrial development has taken place has remained confined to only few isolated pockets leading to wide spatial imbalances in hill regions. Tourism, although emerging as important economic activity, has not been developed in an integrated manner. Forest is being used as the major fuel wood because of lack of alternative source of energy, causing larger-scale destruction of forests. In spite of poor state of hill development and large-scale environmental and ecological problems, hill areas in India have vast potentials, which need to be harnessed properly in order to have sustainable development of hill regions on a wider scale. By adopting proper land development measures there is wide scope of bringing more area under agriculture

and forest. The hill slopes are specifically suitable for large-scale plantation and horticulture crops. With good scope of fodder production, dairying has considerable scope for development in the region. A sound development of forest would not only help in eco-restoration but would also provide industrial timber if exploited scientifically and also be a good potential for bee keeping, sericulture and minor forest products. The sustainable exploitation of minerals would help in setting up of mineral resource-based industries, thereby leading to diversification of economy.

The approach to hill area development should therefore, be to arrest further damage to the fragile mountain eco-system and to promote development without destruction. The plan for hill development should attempt to highlight the role of each and every sector of development in bringing economic benefits to the region and in maintaining the vital ecological balance by coordinating various economic and social activities in space through the creation of a systematic and functional settlement system. There is an intimate and inseparable relationship between environment and development and the objective of sustainable development cannot be achieved by ignoring the environmental effects. In order to have development without destruction all the socio-economic and physical activities need to be planned within an ecological framework.

5. MODELS FOR HILL AREA DEVELOPMENT

Development approach for hill area should emphasize among others sound land use planning, development of alternative sources of energy to reduce dependence on forest fuel wood, planned development of tourism activity, rational urban settlement system and optimal utilization and development of resources. All these parameters need to be well knitted to the integrated plan. Two such models of development followed in other countries are: i) European model, and ii) Japanese model.

About 150 years ago in the European Alps in places like Switzerland, Bavaria and Austria, similar conditions prevailed as in the Himalayan Region today. The problems of conservation and development of mountain region in the above European countries have, over the years, been tackled by:

- Adopting sound practices of land use planning with the help of land tenure system, development of hydro-electric power as a major alternative source of local energy for development;
- Preventing the destruction of forest cover; and
- Adopting development of planned and dispersed tourism.

All the three factors have been blended to achieve the objectives of conservation and development. This model is considered to be useful in other mountain regions of the world as well.

In the Japanese model, hill areas have been kept as very sparsely populated where only two per cent of the large population of over 100 million is living in the hills, which cover 75 percent of the land area. This has been achieved partly by conserving the hills as resource regions for forestry, hydro-electric power, and tourism partly by having economic development in the plains. Although it has some adverse impacts in terms of acute congestion and pollution in the remaining 25 per cent of the land area containing 98 percent population. Nevertheless, hill areas have been treated on the basis of conservation development factors as in Europe.

Despite different physical and socio-economic conditions in our hill areas, it would be interesting to explore to what extent we can draw on their experience.

6. POLICY PERSPECTIVE PLAN

A Policy Perspective Plan for larger region should identify the broad developmental issues and imperatives and set out well-defined goals and objectives. The integrated plans at sub-regional level or for typical hill sub-region should identify the priorities for development programs spatially and temporally. At this level, physical plan should also be integrated with the socio-economic development plans of state government and other concerned agencies at various levels to work out the financial implications and order of priorities, considering availability of funds from various sources vis-a-vis development needs. At the lowest level i.e. the sub-watershed level, action area plans, indicating the specific area based programs of development with stages of implementation in a coordinated manner, should be prepared in consultation with other development agencies and involvement of local people.

7. WATERSHED A UNIT FOR PLANNING

For conservation and eco-development of hill areas a watershed would be a suitable unit for planning and accordingly, while delineating planning region for hill area development, it would be more appropriate to take into account the whole of watershed area including high altitude of hills, plateaus, valleys and plains. A watershed is a clear conceptual unit comprising hydrology, physical geography and other natural resources and hence it will be of great advantage for hill area development if watershed is taken as a unit for planning. Within the watershed all the development programs could be made area specific to a large extent, which would help in achieving the economic growth.

8. INTEGRATED DEVELOPMENT APPROACH

Integrated development approach for hill areas, thus, calls for coordinated action in all aspects of development at various levels. Such an approach would ensure planning from the bottom and action areas where the problem exists. Considering the broad objectives at regional level, development program for the specific areas at lower level be worked out to have a top-down linking and similarly programs at lower level should be adjusted in a such a way that they fit well with the objectives and resources indicated at the higher level plans to have bottom-up linkages. Horizontally, all the programs need to be coordinated in the detailed plan for sub-watershed at the local level in line with the broad objectives and available resources. An integrated development approach needs reliable, timely, accurate, complete and useful data and information on land use, natural resources, socio-economic activities and other parameters of development.

The remote-sensing techniques have proved to be very useful in inventorying, development management and monitoring of land, water and other natural resource data and information. The technology offers a wide opportunity for integrated study of hill areas particularly in terms of land and natural resources. The remote sensing technique can help to a great extent in analysing the environmental changes in hilly areas and prepare an integrated development plan. A sound database and information system particularly at sub-watershed level in the form of various thematic maps and attribute data would facilitate in planning and development of hill areas.

Land use planning should be based on the land capacity and suitability studies at sub-watershed level. Very steep slopes should be forested while the moderate slopes should be put to a mix of horticulture, fodder, plants, etc., while valley and plain flat lands in the hills should be under cultivation of food crops. All these should be supported by a proper land development program such as terracing contour bonding, trenching of hill slopes, construction of check dams, etc. Encroachment on forestland should be checked and removed and forest should be enriched by planning on denuded and sparsely forested zones. Hills and mountain have vast scope of hydel power and water resource development for irrigation schemes. This will also help in augmenting ground water table by more recharge that will in turn intensify the vegetative cover. Non-polluting hi-tech industries as well as local resource based industries could be developed in the hill regions in the selected areas. For development of tourist infrastructure such as construction of new roads, hotels, cottages and allied activities care should be taken that they do not affect the hill escarpment and should be developed in harmony with the surrounding environment. While developing human settlements, both urban and the rural, it should be seen that limited availability of flat and buildable land is optimally utilized. The level of facilities and services need not necessarily be on the basis of population unit and distance norms but be provided as per the needs of the hill people. The norms and spatial standards as prevalent in the plains may be required to be scaled down. Detailed guidelines on erosion control measures in the construction of hill roads laid down by the Ministry of Transport (Road Wing) should be strictly followed while constructing new roads.

To preserve and maintain the genetic pool of special flora and fauna in the hill region, biosphere reserves such as national parks, wildlife sanctuaries, reserve forests and scenic spots have to be maintained. The wide public awareness program for environmental protection and consecration, legislative measures and appropriate machinery are needed to tackle the situation. The operational and planning and development machinery needs to be strengthened appropriately to evolve and implement the eco-development plans at various levels.

9. CONCLUSIONS

The basic philosophy of hill area development should relate to sustainable development, within the parameters of the World Commission on Environment and Development's definition i.e. 'sustainable development is the ability to meet the needs of the present generation without compromising the ability of the future generation to meet their own needs'.

REFERENCES

- Meshram, D.S., and Chotani M.L. (1994) *an approach to hill area development*
Gupta, R.C. *Physical Planning for Tourism Area: Basic Issues and Concepts*
Maitra, A.K. *Environmental Impact Assessment of Urban Development of Hill Towns: Case Study Shimla*

4 | URBAN AND REGIONAL PLANNING REFORMS AND THE UDPFI GUIDELINES

Abstract

The paper emphasize that the dimensions of urban growth necessitate that Mater Plan approach should be dynamic enough to incorporate the changing needs of the society from time to time. However, the 74th Constitution Amendment has added yet another dimension in terms of operational jurisdiction and coverage of the planning process. Accordingly, the Urban Development Plan Formulation and Implementation (URDPFI) Guidelines recommended urban development planning system consisting of a set of four inter-related plans i.e. Perspective Plan, Development Plan, Annual Plan, and Plans of Projects / Schemes, besides the planning process focusing on people's participation, which needs to be adopted by State Governments, local bodies and Development Authorities.

1. INTRODUCTION

The basic approach of preparation of master plans followed since last four decades have proved to be useful in tackling the myriad problems of rapidly growing urban areas. However, it would be pertinent at this stage, to analyse whole process of plan preparation, implementation and enforcement of master plans and their impact on the over all development of towns and cities, because we are at the threshold of urban explosion and problems of the urban areas are not only multiplying astronomically but becoming very complex.

In fact, dimensions of urban growth necessitate that master plan approach should be dynamic enough to incorporate the changing needs of the society from time to time. The 74th Constitution Amendment Act has added another dimension in terms of operational jurisdiction and coverage of the plans. However, economic development plans at macro level and physical development plans at micro level need to be integrated to achieve the desired socio- economic development. The approach must therefore make a shift from rigid land use planning and development control to take a wider view of the dynamic processes of city development. Instead of having fixed land use frame for a specific projected population for a particular time horizon, development plan should be flexible enough to accommodate not only the schemes of central and state governments but also accommodate incremental and progressive changes.

In a statutory process that is in vogue in the country, development plan of a city or town attempts to evolve scientific and rational policies to meet the functional needs of the city and aspirations of its citizens in a perspective of 20-25 years. However, it is felt that the process followed in plan preparation has not been found very effective. The basic criticism of such process is that, it neither matches the pace of urban growth nor it can cope with the changing development needs of the society. The gap between the plan targets and actual development has thus got widened. Although master plans are generally prepared for the planning areas identified under the respective acts, they mainly confine to the precincts of city limits and seldom take into consideration developments taking place on the urban fringes and adjoining peripheral areas due to limitations of statutory requirements.

The five year plans at the state and the national levels are sectoral in nature in terms of development goals and allocation of resources which have neither a bearing on the master

plans prepared at the settlement level nor have physical and fiscal links to local levels. The organizational and planning linkages between these two can not be effectively achieved or promoted under the existing planning system. The National Commission on Urbanisation (NCU) has also highlighted lack of integration between national and state level five year economic plans and master plans at town level. As such, master plans of towns and cities need to take into consideration national and regional urban strategies, rural-urban migration flows, positive responses to the phenomenal expansion of informal sector, unauthorised and low income squatter, settlements, etc.

2. SEVENTY FOURTH CONSTITUTION AMENDMENT ACT, 1992

74th CAA envisages that the municipalities should be vested with powers and responsibilities for the preparation of plans for economic development and social justice and implementation of schemes. The first three items of the Twelfth Schedule to 74th CAA, are urban planning including town planning, regulation of land use and construction of buildings, and planning for economic and social development. Besides, it provides for constitution of District Planning Committees (DPCs) to consolidate the plans (including spatial plans) prepared by *panchayats* and municipalities in a district and to prepare a draft development plan for a district. The CAA also provides for constitution of Metropolitan Planning Committees (MPCs) to prepare a draft development plan (including coordinated spatial plan) for metropolitan area as a whole having regard to the plans prepared by the municipalities and *panchayats*. Thus, it is quite clear that every municipality needs to prepare a spatio-economic development plan, along with other such plans, which would be consolidated by a DPC and form the basis for formulation of the Draft District Development Plan.

3. NATIONAL WORKSHOP ON MASTER PLAN APPROACH

The then Ministry of Urban Affairs and Employment, Government of India, to critically examine various issues related to preparation and implementation of master plans, including their alternatives, organized a national Workshop on 'Master Plan Approach: Its Efficacy and Alternatives' during February 24-25, 1995. The National Workshop concluded that in spite of some deficiencies in the master plan approach, there is no alternative to land use plans. The major recommendations of this workshop were:

- To develop realistic and effective urban development plans, appropriate institutional mechanisms for implementation and a set of comprehensive and simplified development management / promotion rules and regulations which can be easily understood by the public and mechanisms to involve the participation of the public;
- Plan formulation exercise should be completed within specified time period including notifications and hearings and approval;
- To put in place a system for periodic review, revision and modification to plans; and
- To adopt latest concepts of land swaps, land pooling, town planning schemes, accommodation reservations, transfer of development rights, etc., along with innovative techniques and tools like remote sensing, aerial photography, geographic information system (GIS), management information system (MIS), etc., for the preparation of development plans.

4. THE UDPFI GUIDELINES

As a follow up of the national workshop on 'Master Plan Approach: Its Efficacy and Alternatives' the Institute of Town Planners, India prepared the Urban Development Plan Formulation and Implementation (UDPFI) Guidelines at the behest of Ministry of Urban Development, Government of India.

Taking into account the problems of existing planning system in India, the UDPFI Guidelines recommended urban development planning system consisting of a set of four inter-related plans i.e. Perspective Plan; Development Plan; Annual Plan, and Plans of Projects / Schemes.

Perspective Plan: Perspective Plan is a document containing spatio-economic development policies, strategies and general programs of a local authority, which presents to the state government and people, the intentions of a local authority regarding development of an urban settlement in the next 20-25 years. The scope of this plan covers social, economic and spatial development goals, policies and priorities relating to all those urban activities that have spatial implications. It would also cover long-term policies regarding development of infrastructure and resource mobilization that are necessary to promote urban activities. Special care is required to be taken in this plan, for minimizing conflicts between environmental protection and urban development.

Development Plan: Development plans should be prepared within the framework of the approved perspective plan for a medium-term of 5 years. It is a comprehensive plan of spatio-economic development of an urban settlement. Major objective of a development plan is to provide further necessary details and intended actions in the form of strategies and physical proposals for various policies given in the perspective plan depending upon the economic and social needs and aspirations of the people, besides available resources and priorities. Scope of this plan covers an assessment of current issues, prospects, priorities and proposals for development of an urban settlement including employment generation, economic opportunities, transportation and land use, housing and other infrastructure, and matters like environment, conservation and ecology. It also contains implementation strategies for various agencies including the private sector, schemes /projects, development promotion rules, and resource mobilization with particular reference to finance, land and manpower, and provides an efficient system of monitoring and review.

A development plan is a statutory plan, approved and adopted by a local authority for implementation with the help of schemes and projects and would be co-terminus with Five Year Plans of state governments and local bodies. This would provide opportunities to incorporate the needs and development aspirations of the people through the elected representatives.

Annual Plan: The purpose of preparation of Annual Plan is to identify new schemes and projects, which an authority will undertake for implementation within a year taking into account the physical and fiscal performance of the preceding year, and also keeping in view priorities, policies and proposals contained in the approved development plan.

These plans would also provide details on resource requirements during the year and the sources for funding including those mobilized by a local authority - grants, aids and projects and schemes

funds of the state and central governments. It is thus an important document for resource mobilization as it is on this basis that the plan funds will be allocated by funding agencies.

Plans of Schemes / Projects: Within the framework of development plan, schemes or projects would be conceived. These schemes and projects would include working layouts, providing all necessary details for execution including finance, development, administration and management. These schemes and projects could be for any area, old or new; for any activity or land use, like residential, commercial, industrial, recreational, educational or health related; or infrastructure development, separately or in an integrated manner; by any agency such as government, semi-government, private or even individuals; or for any agency, prepared by town planners, architects, engineers as the case may be.

The schemes and projects would provide all the required planning, architectural, engineering, financial and administrative details required for execution.

4.1 Planning Process

Planning is a continuous, time-oriented cyclic process and, therefore, spatial development planning should be seen and practiced as a process, where planning, implementation, monitoring, review and again planning go on as a dynamic process. The stages of the process are given below.

Aims and Objectives: Aims can be defined as broad and general statements indicating the decisions of the policy makers, aspirations of the people and needs of the community, while the objectives are specific statements indicating the ways and means of achieving the set aims by taking into account the potentials.

Identification of Projected Needs: After identification of development aims and objectives, the next stage in the process of planning is identification of projected requirements of various activities, supporting infrastructure and land as the basic input for plan formulation. It is this stage of planning process which consumes most of the time. Therefore, it is emphasized that primary surveys and studies should be rationally chosen so that, it saves time and minimizes delays. Traditionally, the state town and country planning departments have been collecting and compiling relevant information from various departments regarding their future plans, which lack participation and commitment of the relevant departments. Therefore, the Guidelines suggest the constitution of a Development Integration Committee comprising of all heads of central and state government departments having jurisdiction over local planning area. Main function of this committee should be to discuss and advise on development aims and objectives; provide input on existing conditions, projections, priorities and major programs of each department to form part of projected requirements; and to ensure coordination for inter-departmental interactions and cooperation in respect of plan formulation and implementation. Besides, this committee could also discuss other matters of mutual interest. This would pave way for a participatory process of planning and also save time and money in collection of basic data. It is also expected that each participating department or agency should share its own money and manpower if required for discharging its functions as a member of the Development Integration Committee.

Plan Formulation: Plan formulation consists of drawing up of alternative concepts of planning a settlement by, taking into account:

- Aims and objectives;
- Projected requirements;
- Planning principles / theories;
- Planning techniques; and
- Norms and standards.

It is followed by a process of evaluation of the alternatives having regard to achievement of aims and objectives; judicious utilization of land resources; environmental and fiscal resources sustainability; and urban design quality. This leads to the selection of a preferred alternative for further detailing for the proposed plan for a settlement. This plan is further divided into private and public sector programs of action.

Decentralization of Plan Approval Process:

Following the spirit of the 74th CAA, and also recognizing the fact that the current process of approval of urban development plans takes a lot of time, resulting in delays in a fast-changing socio-economic context, make the planning exercise out-of-date, it is therefore, recommended that the plan approval process should be decentralized (Table - 1).

The approving authority may approve the Plan submitted to it without or with specific modifications and in case there are specific modifications, the local authority or other agency / body or individuals, as the case may be, shall be obliged to modify the plan before taking next step in the approval process. Time-frame for such modifications and reconsiderations should not exceed 60 days.

Approval of Perspective Plan: Perspective Plan is to be approved by the state government on the technical advice of a State Town and Country Planning Department. In pursuance of the policy of decentralization, it is recommended that Perspective Plans of small and medium size towns be scrutinized by the Divisional Town Planner at the divisional office and Plans for all large cities be technically scrutinized by the State Chief Town Planner at the headquarters, and sent to the State Government with necessary recommendations and advice for consideration and approval.

Approval of the Development Plan: Following the spirit of the 74th CCA, decentralization is recommended where the Development Plans should be approved by a local authority (municipal council / corporation). The State Town and Country Planning Department as the official agency of the state government, should examine the draft development plan for its being within the

Table 1: Time limit for Approval of Plans

Plan	Approving Authority	Time (months)
Perspective Plan	State government through the State Chief Planner	10
Development Plan	Municipal Council / Corporation	7
Annual Plan	Municipal Council / Corporation	3
Schemes / Projects	Municipal Planner	1

framework of the Perspective Plan and issue a letter of concurrence. Following the process of public notification and public hearing the Development Plan will be finalized and approved by the municipal corporation or municipal council, as the case may be. With a view to introducing efficiency, clause for 'deemed approval' should be introduced.

5. IMPLEMENTATION

As per the UDPFI Guidelines, implementation of Development Plans has to be thorough Annual Plans and projects. The various steps for effective implementation include:

- Formulation of the Annual Plan and identification of projects for implementation within the framework of approved Development Plan;
- Identification of various agencies responsible for;
 - Development promotion and management,
 - Execution of action projects and schemes, and
- Actions for implementation would include public sector interventions, private sector actions and joint ventures or public-private partnerships.

6. PUBLIC SECTOR INTERVENTIONS

Public sector interventions pertain to legal and non-legal matters and capital improvement programs, however, prioritization of projects, under capital improvement programs would need more inputs.

6.1 Private Sector Actions

Private sector actions for implementation of development plans or projects include formulation of projects, fiscal resource mobilization, execution of the project, its management and post-project maintenance. Private sector can execute all types of projects provided they are economically viable and remunerative. Under the current liberalization policy of private sector participation in implementation process, less resources are likely to be made available to local authorities by State Government as plan funds, or grants. Thus, the role of private sector will become increasingly significant.

6.2 Joint Ventures

Joint ventures or public-private partnership, are yet another system for effective implementation of development plans. It is an effective system which can be used to ensure social commitments towards the community and people below the poverty line.

6.3 Review and Modification of Plans

Review is a critical examination of the implementation of Development Plan policies during a given period of time. The basic objective of this exercise is to assess the progress of work done so far and identify areas of successes, failures and conflicts with a view to guiding the future courses of action. This is an important step in the dynamic planning process which hitherto has not been effectively utilized. It is emphasized in the Guidelines that this exercise is utmost necessary and must be undertaken.

6.4 Review of Perspective Plans

Review of Perspective Plan of 20 years should be conducted immediately after the expiry of 10 years. A maximum time period of two years should be associated for this exercise. In order to introduce dynamism and efficiency, it is suggested that a fresh Perspective Plan for 20-25 years should be prepared after incorporating results of the review and the future projected requirements, it should be followed by usual approval process including public notification and hearing.

6.5 Review of Development Plans

The Development Plan covers term of two successive elected local authorities in such a way that the first three years fall during and up to the end of the term of a local authority in office and the next two years fall in the beginning of the term of the next or subsequent local authority. Accordingly, after the expiry of three years from the date of approval of a development plan and immediately after assuming office, a local authority shall review the plan. This exercise should be completed within six months time. Taking into account the results of the review exercise and future requirements for the next subsequent plan period of five years, a fresh Development Plan should be prepared and further action be taken for its approval. Total time taken for review, preparation and approval of development plan should not exceed two years.

6.6 Review of Annual Plans

Performance of the projects and schemes implemented by a local authority, as contained in the Annual Plan of the previous year, shall be reviewed in terms of achievements of the physical and fiscal targets. This would ensure a continuous monitoring and review of actions taken by a local authority. Results of the review should provide inputs for the preparation of the next Annual Plan. Monitoring of the plans and schemes should be regular so that time taken in review and formulation of Annual Plans is minimized. Since each year, the Annual Plans has to be sent to the State Urban and Regional Planning Board and Metropolitan Planning Committee or District Planning Committee, as the case may be, the time for review and Annual Plan formulation should be suitably adjusted, depending upon the directives from these bodies.

7. MODIFICATIONS

Suggested urban development planning system in UDPFI Guidelines provides opportunities for review of Development Plans every three years by the incoming elected local authority. Therefore, it is expected that the need for changes in land uses and modifications in the development plan will not normally be felt. However, under special circumstances if modifications are desired necessary, in public interest, the local authority may take action to effect the modification at any time in accordance with the following procedures:

- Publish draft modifications in at least one local newspaper, inviting objections and suggestions from the public;
- Hear the objections and suggestions of the public and finalize the modifications and submit to the following for approval;
 - The State Urban and Regional Planning Board in case of modifications in a Perspective Plan or;

- The State Government in case of modifications in the Development Plan; and
- The Board or State Government may approve the modifications with or without variations or even reject the modifications.

8. PEOPLE'S PARTICIPATION

There can be no meaningful development in any society, if the people themselves are kept out of the planning process. People's participation, therefore, is essential and must be introduced at relevant stages in the planning process. Taking into account the interest, attitude and behaviours of the people, a system of direct and indirect participation has been suggested as given below:

- Perspective, Development and Annual Plans formulation : Indirect
- Formulation and Implementation of Land Pooling Schemes, : Direct
Redevelopment / Rehabilitation / Shelter Schemes or any
other Project Schemes directly affecting the people
- Plan approval : Direct
- Monitoring : Direct/Indirect
- Maintenance : Direct/Indirect

The suggested indirect participation of the people is ensured through elected representatives in the Municipal Council / Corporation and Ward Committees (74 CAA). This kind of participation has appropriately been provided in the plan formulation process. The direct participation can be through individuals, citizens groups, neighbourhood groups, business groups, consumer groups, and such other groups. NGOs and CBOs can also play a vital role as an intermediate link between the people and the government. It should be mandatory to present the salient features of a development plan in a public meeting organized by the local authority just after the public notice inviting their comments and suggestion before its approval. All land pooling schemes should be formulated with direct active participation of the people.

10. CONCLUSIONS

As the country is poised to have about 40 percent population in urban areas and urban population is expected to be practically double from 285 million in 2001 to 546 million in 2025, the major portion of this increase would be living in the existing towns and cities, therefore, the adoption of UDPFI Guidelines would go a long way in resolving the issues of orderly and planned development of our towns and cities.

REFERENCES

Seventy Fourth Constitution Amendment Act, 1992:

Ministry of Urban Affairs and Employment Government of India, National Workshop (1995), *Master Plan Approach: Its Efficacy and Alternatives*.

Ministry of Urban Affairs and Employment Government of India (1996), *Urban Development Plan Formulation and Implementation (UDPFI) Guidelines*.

5 | IMPLEMENTATION OF DEVELOPMENT PLANS FOR GOOD GOVERNANCE

Abstract

The National Commission on Urbanization observed that the involvement of citizens in decisions making is almost negligible in our country, therefore, the present system is neither truly democratic nor it is representative forum for projecting the views of the people. Accordingly, the paper suggest that the agenda for good governance, should aim at participatory approach in decision making, efficiency in delivery of public services, transparency and accountability, besides to constitute Ward Committees, District Planning Committees (DPCs) and also Metropolitan Planning Committees (MPCs) to provide opportunities to the people to participate in indecision making process.

1. INTRODUCTION

1.1 Management of Urban Affairs: Present system

The present system of management of urban affairs can broadly be categorized into (i) Policy Planning; (ii) Planning of individual settlements and regions; (iii) management of existing cities; and (iv) implementation of development programs. Involved in the process of planning and management are the central and state governments, local bodies and specialized agencies and organizations which either deal with a particular subject or provide specific services (NCU, 1988). NCU further observed that the involvement of citizens in decision making is almost negligible, therefore the present system is neither truly democratic, nor it is representative forum for projecting the views of the people. Thus, in the present system there is total lack of peoples involvement / participation and the neglect of municipal bodies and over emphasized role of special purpose agencies which has resulted into bureaucratic approach to planning and management of our towns and cities.

2. FROM URBAN MANAGEMENT TO URBAN GOVERNANCE

The term governance is interpreted differently by different practitioners. Urban governance differs from the broader governance agenda (which has tended to concentrate on macro-levels), which focuses on the meso-levels. It also differs from urban management perspective of the operation and maintenance of infrastructure and services, because urban governance acknowledges that one should ignore the complex social and political environments in which the services are being managed. At the city level, good governance is not only concern with good urban management but also with interactions between all stakeholders in the city. Therefore, political, contextual, constitutional and legal dimensions need to be considered. (Joris van Etten and Leon van den Dool)

The Habitat Agenda advocates transparent, responsible, accountable, just, effective and efficient governance of towns, cities and metropolitan areas, through enabling local leadership and the promotions of democratic and participatory process. It stresses that public authorities should use public resources in all public institutions to further these objectives. It further stresses the need for participatory approaches in human settlements development and management.

3. UNCHS (HABITAT) ON GOOD URBAN GOVERNANCE

UNCHS (Habitat) Urban Governance Campaign is engaging cities, partners and the international community in a vigorous debate on what exactly constitutes good urban governance. Habitat has initiated this debate by arguing for the definition for urban governance. ‘Urban governance is the sum of many ways individual and institutions, public and private, plan and manage the common affairs of the city. It is the continuing process through which conflicting or diverse interests may be accommodated and cooperative action can be taken. It includes formal institutions as well as informal arrangements and the social capital of citizens’.

Based on international legal instruments, commitments at major UN Conferences and operational experience in cities, the campaign proposes that good governance is characterized by the following seven inter dependent and mutually re-enforcing norms:

- Sustainability in all dimensions of urban development;
- Subsidiarity of authority and resources at the closest appropriate level;
- Equity of access to decision-making process and the basic necessities of urban life;
- Efficiency in the delivery of public services and in promoting local economic development;
- Transparency and accountability of decision makers and all stakeholders;
- Civic engagement and citizenship; and
- Security of individuals and their living environment.

This is supported by wide range of operational principles, which are based on experiences and reflect regional conditions. However implementation of these mutually re-enforcing norms should take into consideration the local conditions.

4. 74TH CONSTITUTION AMENDMENT ACT (CAA), 1992

The 74th CAA introduced 3 tier system of government at local level by providing classification of urban local bodies i.e. *Nagar Panchayats*, Municipal Council for Small Urban areas and Municipal Corporations for large urban areas. With regard to the composition and functions of Municipalities, CAA envisages a broad framework. Under Article 243-W, Twelfth Schedule has been added for the first time which has listed 18 functions to be performed by Municipalities (Table 1).

Table 1: Twelfth Schedule to 74th Constitution Amendment Act

1.	Urban Planning including town planning;
2.	Regulation of land use and construction of building;
3.	Planning for economic and social development;
4.	Roads and bridges;
5.	Water supply for domestic, industrial and commercial purposes;
6.	Public health, sanitation, conservancy and solid waste management;
7.	Fire services;
8.	Urban forestry, protection of environment and promotion of ecological aspects;

9.	Safeguarding the interests of the weaker sections of society, including the handicapped and mentally retarded;
10.	Slum improvement and upgradation;
11.	Urban poverty alleviation;
12.	Provision for urban amenities and facilities such as parks, gardens and playgrounds;
13.	Promotion of cultural, educational and aesthetic aspects;
14.	Burials and burial grounds; cremations, cremation grounds and electric crematoriums;
15.	Cattle pounds: prevention of cruelty to animals;
16.	Vital statistics including registration of births and deaths;
17.	Public amenities including street lighting, parking lots, bus-stops and public conveniences; and
18.	Regulation of slaughter houses and tanneries.

The existing State Municipal Acts generally provide an exhaustive list of mandatory and discretionary functions and many of the functions listed in the Twelfth Schedule, except the first three functions are enumerated in the State Municipal Acts also. However, the CAA has not made any distinction between the mandatory functions and discretionary functions.

At present there are many agencies operating outside the framework of democratically elected local bodies which have been entrusted with the task of urban planning, development and management. Some of these authorities are like Urban Development Authorities, City Improvement Trusts and Spatial Purpose Development Authorities / Agencies. With the 74 CAA municipalities would play more active role in urban planning, development and management. However, there is a need to strengthen the local bodies from management and functional point of view to enable them to take up additional function as envisaged, in 74th CAA.

Constitution of Ward Committees for one or more wards, within the territorial area of a municipal councils / corporations having a population of 3.0 lakh or more is mandatory. The aim is, to bring the people and local governments closer, so that the committee can play an effective role at the neighborhood level in the delivery of services. Some cities have already taken action to constitute Ward Committees. The Committees ones fully constituted will be instrumental in ensuring better participation of the people in delivery of services and also will provide feedback which will be useful for urban planning, development, and management.

Under the 74th CAA it is mandatory for the state governments to constitute a District Planning Committee (DPC) to consolidate the plans prepared by *gram panchayats*, *nagar panchayats*, municipal councils and municipal corporations and also to prepare a draft plan for the whole district. District Planning Committees have been constituted in some states, thus the process for establishing a three tier system of government have started but there is a long way to go to achieve the decentralization process fully. The Draft Development Plan to be prepared by DPC needs to address critical matters of common interest including spatial planning, sharing of water and natural resources, the integrated development of infrastructure and environmental conservations besides the extent and type of available resources including finance.

There are 35 metropolitan areas (2001) in the country with a population of 10 lakh or more, absorbing about 37.8 per cent of the total 28.54 crore urban population living in urban areas. As per 74th CAA creation of Metropolitan Planning Committee (MPC) is mandatory comprising of one third of its members as elected representatives of urban and rural local bodies in the metropolitan areas and the others to be nominated representing various states and central government agencies responsible for various services in the metropolitan areas, the nominations can be from representatives of the private sector as well. The Metropolitan Planning Committee needs to prepare a Draft Development Plan for metropolitan area as a whole having regard to the Plans prepared by Municipalities and *Panchyats* in metropolitan area and to address to the matters of common interest, including coordinated spatial planning of the area, sharing of water and other physical and natural resources, the integrated development of infrastructure and environmental conservations besides the extent and nature of investments likely to be made in the metropolitan area by central and state governments and other available resources including financial. Several states have passed enabling laws to set up MPC, but none had been constituted until last year. Maharashtra Government, recently passed enabling law under which the Mumbai Metropolitan Regional Development Authority (MMRDA) is to assist the MPC i.e. to function as its technical arm. This is perhaps the right initiative in the direction to use the expertise of the technical persons of the Development Authorities / Special Purpose Authorities in a more effective manner. The Ordinance has already been issued by the Government of Maharashtra for constituting Metropolitan Planning Committee (MPC) in Mumbai, Pune and Nagpur. While the Urban and Rural bodies are free to plan for matters which fall exclusively within their jurisdiction, the CAA has recognized that the growth impulses largely stem from the interaction between urban agglomerations.

The 74th CAA is serious attempt to ensure adequate constitutional obligation so that democracy in municipal government is established for effective planning, development and management. It is a pointer to the determination of the state to bestow power to the people to plan and develop for themselves and participate in the decision making and management process. If the provisions of 74th CAA are implemented in the letter and spirit it would minimize the beaurocratic dominance at state and central level and transform the local bodies to more vibrant institutions of local self government for taking up the cause of public welfare more effectively

5. MASTER PLAN APPROACH IN VOGUE

Planning of towns and cities in India dates back to Vedic period, when Mohenjodaro and Harappa were planned on the basis of definite street pattern. During the Buddhist Period large number of capital cities were built with linear or extensive Bazars and monumental town squares, besides number of small towns came up with centers of higher learning as foci. Villages in particular and rural areas in general were dominated and controlled by towns and cities. Town and cities built by Mughals had reach landscape contents in addition to a significant number of public and private buildings of architectural values. During the colonial Period, the traditional linkages between the urban and rural areas were indirect in the interest of the rulers. Large cities with port facilities flourished at the expense of other smaller settlements. However, town planning as a conscious and as a specific professional discipline relatively is a recent phenomena. In the twentieth century, Lutyens' Delhi, capital cities of Chandigarh, Bhubaneswar and several other

new towns such as Jamshedpur, Bhadravati, Bhilai, Durgapur, Rourkela, Faridabad, Kayalan, etc., are some of the important towns built according to well conceived Master Plans.

In fact, there has been no serious attempt to bring spatial planning into the main stream of National Development Planning (NCU, 1988). Presently there is no mechanism in the planning process to work out the special implications of the special sectoral pattern on investment that is envisaged in the Five Year Plans. However, the momentum of preparation of Master Plans picked up during the Third Five Year Plan (1961-66) when central government provided 100 percent grant to the state governments. Since then, concerted efforts were made for providing appropriate legislative support for preparation, enforcement and implementation of the master plans. As per TCPO estimates about 879 Master Plans / Development Plans (1995) have been prepared (Table - 2) under the State Town Planning Acts, Town improvement Trust Acts, City Development Acts and other related acts / legislations and plans for 319 towns are in the process of preparation or are in the draft stage.

Table 2: Status of Preparation of Development Plans

Sl. No.	State	Plans approved by the Govt.	Draft Plans prepared	Plans under preparation	Total
1.	Andhra Pradesh	93	—	12	105
2.	Assam	13	12	—	25
3.	Arunachal Pradesh	1	6	14	21
4.	Bihar	7	17	—	24
5.	NCT, Delhi	1	—	—	1
6.	Goa	14	—	2	16
7.	Gujarat	106	—	—	106
8.	Himachal Pradesh	6	1	8	15
9.	Haryana	36	—	17	53
10.	Jammu & Kashmir	1	5	4	10
11.	Karnataka	27	—	—	27
12.	Kerala	15	6	21	42
13.	Madhya Pradesh	19	5	—	24
14.	Maharashtra	224	4	14	242
15.	Manipur	1	9	—	10
16.	Mizoram	3	—	11	14
17.	Maghalaya	3	—	2	5
18.	Nagaland	9	—	—	9
19.	Orissa	40	24	27	91
20.	Punjab	77	—	—	77
21.	Rajasthan	35	8	19	62
22.	Tamil Nadu	79	29	6	114
23.	Tripura	8	—	4	12

Sl. No.	State	Plans approved by the Govt.	Draft Plans prepared	Plans under preparation	Total
24.	Uttar Pradesh	50	27	—	77
25.	West Bengal	7	—	—	7
Union Territories					
1.	Chandigarh	1	—	—	1
2.	Dadra & Nagar Haveli	1	—	—	1
3.	Daman & Diu	1	—	—	1
4.	Andaman & N. Islands	—	3	—	4
5.	Pondicherry	1	3	—	4
		879	158	161	1198

The Development Plans / Master Plans are the statutory instrument for controlling, directing and promoting the sound, rational and orderly development of towns / cities with a view to achieving maximum economic and social benefits. The Development Plan is prepared on a long term basis keeping in view the future growth of population and economic development potentials likely to occur in the plan period. The preparation of the development plan is based on well laid down statutory procedures including processing, approval, enforcement and implementation. Development Plan indicates use of land for the existing and proposed area to be regulated and also indicates the manner in which the development of land therein is to be undertaken, for various purposes such as residential, industrial, commercial, recreational, public and semi-public, etc., along with network of road, street pattern and traffic circulation system for present and future. Plan also defines the areas required to be preserved and conserved. The development of areas of natural scenery and spatial features requiring preservation of historical places, architectural and cultural interest are also identified. The Development Plan also gives zoning regulations to regulate the development within each zone. It also indicates the stages of preparation of Zonal Development Plans, Development Schemes, Improvement Schemes, Town Planning Schemes, etc., along with details and specific location of various activities, facilities and services. Such Zonal Plans are link between Master Plan and detailed site development plans and are necessary for the smooth enforcement and implementation of Master Plan proposals.

The concept of statutory master plan is in vogue over last four decades and has, made a discernible impact in regulating and channelizing the development and growth of cities and towns. Without Master Plan the situation of the towns and cities would have been worst. It is well known fact that the process of plan implementation followed in the country is based by and large on experience of implementation of Master Plan of Delhi, and Kolkata;. Central / state sector schemes like integrated Urban Development Program (IUDP), Integrated Development of Small and Medium Towns (IDSMT), Environmental Improvement of Urban Slums (EIUS), Urban Basic Services Program (UBSP), Nehru Rojgar Yojana (NRY), etc., have also contributed in implementation of city development plans. In one exercise undertaken by TCPO, it has been observed that in many states, local bodies are facing problems in implementation of Master Development Plans mainly because of:

- Weak financial base;
- Lack of technical knowhow;
- Procedural and administrative delays in acquisition of land;
- Lack of proper coordination among various agencies involved in implementation of plan;
- Inadequate institutional support;
- Weak data base;
- Ambitious plan proposals;
- Lack of integration between spatial planning proposals of the master plan and economic plan proposals at state and regional level;
- Inadequate legislative support;
- Lack of flexibility in development approach;
- Lack of monitoring mechanism; and
- Ineffective public participation, etc.

The Five Year Plans at the State and the Central levels are sectoral in nature in terms of development goals and allocation of resources which have no bearing on the Master Plans prepared at the settlement level nor have physical and fiscal links to local levels. The National Commission on Urbanization (NCU) has also highlighted lack of integration between national and state level five years economic plan and Master Plan at town level. The Master Plans even though has not proved to be fully effective due to various factors mentioned above but definitely it has been the major instrument for planning and orderly development of towns and cities. In the absence of Master Plan the situation of the towns and cities would have been more chaotic and haphazard, which can be observed from the rampant unplanned, unauthorized construction, and unwarranted development taking place on large scale, in majority of areas / pockets where Development Plans have not been prepared.

It will be interesting to note that in the National Workshop organized by Ministry of Urban Development and Poverty Alleviation, Government of India in 1995, it was recommended, that for realistic effective implementation of Development Plans, following steps need to be taken to evolve:

- Spatial development plan depicting broad land use zones and major spatial proposals;
- Resource mobilization plan;
- Institutional mechanism to implement the development plan;
- A set of comprehensive and simplified development management / promotion rules / regulations / law which can be easily understood by the public;
- A mechanism to involve the participation of the public especially the poor, socially disadvantaged groups, women, non government and community based organizations in the planning process in case of all cities / metropolitan areas / regions;
- The plan formulation exercises must be completed within a specified time period and the time schedule for plan preparation, public notification / hearing and approval must be statutorily prescribed in the relevant acts;

- Keeping in view the provisions of the Constitution (74th) Amendment Act, a strong push needs to be given to the preparation of integrated development plans for urban areas - integrating physical and socio-economic planning and taking into account the urban - rural spatial and functional linkages, environmental protection and financial and non-financial resources. These plans should be prepared by utilizing the latest techniques and tools like remote sensing, aerial photography, geographic information systems (GIS) and other computer applications for preparing the base map; and
- State Government should take expeditious steps to constitute the District Planning Committees (DPCs) and Metropolitan Planning Committees (MPCs), with full regard to the socio-economic planning.

The Workshop also conclusively recommended that there is no alternative to Master Plan in the Indian context, except a better Master Plan which is more transparent, simple and dynamic.

6. IMPLEMENTATION OF DEVELOPMENT PLANS IN MAHARASHTRA

Out of 879 approved Master / Development Plans (Table - 2), 242 i.e. one fourth were from Maharashtra, a progressive state. There are 244 planning authorities including 12 Municipal Corporations; 24 Class -A Municipal Councils; 49 Class - B and Class - C Municipal Councils, almost all of them are covered by statutory Development Plan. (A.R. Patharkar, 1995). Although the extent of implementation of the Plans differs from one municipal body to another depending upon their financial strength, however, it can safely be assumed that implementation has not been more than 30 %, even after lapse of 10-15 years from the adoption of the plan (Table 3 and 4). However, in majority of settlements the major proposals of Development Plans are generally

Table 3: Level of Implementation of Development Plans in Maharashtra State (1993)

Sl. No.	Status of Local Body	Total No. of reserved sites in DP	Sites Developed so far	Expenditure Incurred so far (Rs. in crore)	% of sites developed with respect to total No. of sites
1.	Municipal Corporation in the State (Total 10)	93	—	12	105
	• In respect of reserved sites	2032	687	60.54	33.8
	• In respect of DP roads	207 km. (Road length)	121 km	6.86	58.4
2.	'A' Class Municipal. Councils (Total 23)				
	• In respect of reserved sites	1975	524	13.69	26.5
	• In respect of DP Roads	503 km. (Road length)	375 km.	7.06	74.5
3.	'B' Class Municipal Councils (Total 46)				
	• In respect of reserved sites	1706	389	9.36	22.8
	• In respect of DP Roads	234 km. (Road length)	46 km.	3.23	19.6
4.	'C' Class Municipal Councils (Total 148)				
	• In respect of reserved sites	2896	569	14.96	19.6
	• In respect of DP Roads	534 km. (Road length)	149 km	3.73	27.9

Table 4: Status of Development Plans in Maharashtra State

Sl. No.	Development Plan Status	No.
1.	Original Development Plans of Municipal Councils	93
	• Total number of Municipal Councils in State	2032
	• Municipal Councils for which Development Plan (original) have been sanctioned	207 km. (Road length)
	• Municipal Councils for which Development Plan have not been sanctioned	1975
	• Development Plans under preparation	503 km. (Road length)
	• Preparation of Development Plan yet to be taken up	1706
2.	Revised Development Plans of Municipal; Councils	
	• Out of 232 Development Plan due for revision	2896
	• Preparation of Revised Development Plan under progress	534 km. (Road length)
	• Preparation of revised Development Plan yet to be taken up	
3.	Development Plans of Municipal Corporations	
	• Total number of Municipal Corporation in State	
	• Corporation for which Development Plan have been sanctioned.	
	• Development Plan prepared but not finally sanctioned	

implemented / followed and picture of settlement has emerged by and large tallies with what was envisaged in the Development Plans. In fact, basic service infrastructure in terms of water supply and drainage is generally planned and implemented by way of coordination in conformity with Development Plans forming basic guide for such schemes. Development Plans have been used by Planning Authorities as well as by the Private Sector as guiding document for shaping settlements, although there are some violations in respect of unauthorized constructions / developments and slums are the invariable results of local administrative, political and economic forces in which Development Plans have to operate. Thus, it could be concluded that Development Plans have played a key role in shaping the picture of urban settlements and in the decision making process of the Planning Authorities.

The responsibility of the Urban Local Bodies goes much beyond the execution of the Plan. They are responsible for creating physical infrastructure, maintaining it, providing basic and social amenities in the town. They have been additionally saddled with the responsibilities of primary education, health and hygiene of the community and of late running employment generating program for tackling the problem of unemployment and urban poverty. The demand on these institutions is thus very heavy, while the resources available with them are very weak. Because of the archaic urban land policies and Rent Control Act, the income of the local bodies has remained static. The government too has made the little efforts for allocating more funds to help them carry out assigned functions. These urban local bodies are also plagued by high corruption, poor managerial capacity, lack of technical expertise and constant interference from the elected representatives. Under these circumstances they are compelled to devote

their attention to providing the more pressing needs i.e. water supply, drainage, solid waste management, etc. These bodies are spending nearly 50 % on establishment, about 30% on maintenance of utilities and a mere 10-15 percent on the development works. It is thus no surprise that the execution of development Plan suffers. Besides, with nearly 50 percent of the public being illiterate any participation from them is ruled out.

7. CONCLUSIONS

From the above discussions, it can be observed that the agenda of good urban governance, should aim at participatory approach in decision making, efficiency in delivery of public services, besides transparency and accountability.

As a follow-up of the National Workshop on “Master Plan Approach: Its Efficacy and Alternatives” a research study was awarded to the Institute of Town Planners, India (ITPI), which is the apex professional body in the country. The study, in fact realized that 74th CAA demands devolution of planning functions to the local bodies and involvement of people in the planning and decision making process besides administratively and professionally it is expected that the system should provide a long-term policy plan, a mid-term comprehensive plan further integrated with budgetary process and divided into projects / schemes for implementation, monitory and review. The study also observed that there can be no meaningful development in any society if the people themselves are kept out of the planning, development and implementation process. Accordingly, taking into account the interest, the attitude and behaviors of the people a system of direct and indirect public participation needs to be evolved.

It is imperative to assign the functions to the local bodies as enumerated in the Twelfth Schedule, and to constitute Ward Committees (WCs), besides District Planning Committees (DPCs) and Metropolitan Planning Committees (MPCs) to provide opportunities to the people to participate in decision making process and also strengthen local bodies to carry out effectively the new function assigned to them.

As stated earlier, it needs no emphasis to mention that the areas developed as per Master Plan proposals are good to manage and govern than unplanned areas / unauthorized areas / slum pockets. Therefore, the implementation of the Master Plans would go a long way in governing towns and cities.

8. CONCLUSIONS

United Nations Habitat (1999)- The Global campaign on Urban Good Governance

Ministry of Urban Affairs and Employment Government of India, National Workshop (1995), *Master Plan Approach: Its Efficacy and Alternatives*.

Seventy Fourth Constitution Amendment Act, 1992:

6 | PREPARATION OF URBAN MAPS THROUGH REMOTE SENSING FOR SUSTAINABLE DEVELOPMENT

Abstract

The Urban Mapping Scheme provides vast scope in improving the decision support system in terms of making available latest and accurate maps and photographs for planning, management and monitoring. Use of remotely sensed data for urban planning and management is a step in continuation and support of the policies framed for generation and use of spatial data. The maps generated under Urban Mapping Projects for 25 towns (first phase) provide scope for a range of applications such as: preparation of large scale urban base maps, preparation of land use plans, preparation of master / development plans, monitoring unauthorized development; and planning for utilities such as electricity, water supply, waste disposal, communication, etc. However, in view of the limited coverage of the Urban Mapping Scheme in comparison to the requirement of up-to-date base maps, for 4615 urban settlements in the country, there is an intense need to priorities preparation of base maps, accordingly the paper suggests to give immediate priority to all Class - I towns numbering 300 (1991 census) and to those towns identified as GEMs by National Commission on Urbanization, and subsequently the scheme be extended to all the towns.

1. INTRODUCTION

Human being while living in settlements whether rural or urban creates a built environment and in the process disturbs the natural environmental system. The environmental problems in rural habitats often arise through use, overuse and misuse of natural resources which are caused due to poverty or lack of alternatives; while environmental problems in urban settlements occur due to transformation of natural environment into man made environment. Between rural and urban, urban settlements particularly larger ones, affect the natural environment most, because of the huge landmass they occupy having further tendency to expand rapidly, devouring good agricultural land, besides, producing a large quantity of liquid and solid waste which has a wider adverse impact on the surrounding region as well.

India, has 15% of the world's population which is squeezed into 2.4% of the world's total landmass, i.e., 844 million persons, according to the 1991 Census. The urbanisation level of 25.72 per cent may not appear high as compared to the urbanisation level of the developed countries of Europe and North America, but its sheer size of 217 million is gigantic and exceeds the total population of many countries of the world. There has been an eight fold increase in the urban population of India from 25 million in 1901 to 217 million in 1991. The urban population of 217 million is spread over in 4615 towns of different sizes and poses a greater challenge for managing the urban environment in the country. In the planning process, town planners tend to shape the physical environment of towns and cities for better living and efficient functioning. However, inadequacy of up-to-date reliable base maps, planners face lot of problems in creating the desired level of built environment, as large scale base maps are not available for all urban areas showing exact spread of the towns along with physical and environmental features. It is here that the emerging techniques of satellite based Remote Sensing and Aerial Photography in conjunction with conventional techniques can help in making available up-to-date base maps for effective planning of settlements to shape the sustainable development of our cities.

2. THE URBAN SCENARIO

Besides structure and morphology of towns, the quality of urban environment is mostly related to the urbanisation. Since the beginning of the 20th century, the pace of growth of urban population has accelerated both in terms of level, scale and magnitude, resulting in continuous accretion in size, number and area of urban settlements. During the last two decades 1971-91, the urban population in the country has almost doubled from 109 million to 217 million. This period has also witnessed considerable awareness for environmental protection in the country. The major increase of urban population has been confined to the existing settlements. If this trend of growth of urban population continues unabated, it is estimated that by 2001 about one third of India's population would be living in urban areas.

There is uneven distribution of urban population in various size / classes of towns and cities. It is significant to note that 65 % of the urban population is concentrated in just 300 Class-I urban agglomerations and towns having population of one lakh and above. The remaining large number of small and medium towns numbering 3468 have only 35% of the urban population. Even among the Class-I category of towns, 23 metropolitan cities (population 10 lakh and above) dominate the urban scene by having almost one third of the urban population of the country. In the last four decades, the growth of large and metropolitan cities and their share of urban population has been increasing and this phenomenon is unlikely to change in the years to come.

Yet another facet of the process of urbanisation reveals considerable inter-regional and intra-regional variation in the growth of urban population as also in the level of urbanisation. The smaller states of Mizoram and Goa are at the top with regard to level of urbanisation, (46.20% and 41.02 percent urban population respectively) followed by Maharashtra (34.40%), Gujarat (34.20%) and Tamil Nadu (30.90%). At the lower end, are the States of Orissa (13.43%), Bihar (13.17%), Arunachal Pradesh, (12.21%), Assam (11.08%), Sikkim (9.12%), and Himachal Pradesh (8.70%). At the district level, nine districts in the Himalayan and other hilly regions' did not have any urban population, while in 93 districts the level of urban population ranged from 5 to 10 per cent only. On the other hand there are 16 districts where the level of urbanisation is more than 60%. The variation in urbanisation across different states and union territories ranges from 90% to about 9% which is attributed to the regional pattern of growth in general and industrial development in particular. There is heavy urbanisation in a few areas of the country such as Calcutta conurbation, Bombay-Ahmedabad corridor, Punjab, Haryana, Upper Ganga Plains, Lower Ganga Plain, Sagar-Bhopal, Ratlam Plateau, Maharashtra, Goa, Karnataka coast, Kerala and Tamil Nadu, coastal Andhra Pradesh, and a few other isolated industrial pockets. There are also vast areas in the country which are almost devoid of urban settlements leading to an extremely low level of urbanisation of 5 to 10 percent.

The pattern of urbanisation is characterised by heavy concentration of economic activities and opportunities in a few selected urban pockets and if the existing spatial pattern of urbanisation continues, the urban growth would get further concentrated only in these areas. These clusters, which are presently highly urbanised, may reach a stage where the carrying capacity may not be able to sustain the high level of urbanisation. Hence, it is imperative to urbanise other areas in the country such as the Eastern Peninsular Region, the North-Eastern Region, Western Rajasthan,

Northern Bihar, Eastern Uttar Pradesh, etc., which are rich in resources and have the potentials to absorb of urban population provided urban infrastructure is improved.

The present trends also indicate that the process of urbanisation is irreversible unless intervention in the form of deliberate policy interventions for directing the growth in the desired direction is implemented. The unprecedented scale and level of urbanisation in a relatively short period, as compared to the developed countries, has created serious environmental problems and in order to plan for the future, it is essential to assess the environmental implications of urban pattern at various levels.

3. DEVELOPMENT IMPLICATIONS

After 1972, United Nations Conference on Human Environment in Stockholm, the issue of environment has moved into the mainstream and the entire international community has demonstrated its concern for it by studying the impact and implications of various developments. The phenomenal growth of urban population has strained urban services and severely affected all types of urban environment viz physical, social, economic and aesthetic, in a majority of our settlements. The heavy concentration of population and activities in towns and cities particularly the larger ones, has resulted in the creation of foci which have adversely affected the natural environment. The affluence of the cities has led to an extravagant level of consumption which has resulted in depletion of non-renewable natural resources and dumping of waste. The foremost impact of urbanisation is discernible in the pattern of urban growth which is mostly in the form of urban sprawl. The physical expansion of cities results into addition of precious peripheral agricultural land to urban use. In India, it is estimated that about 1.5 million hectares of good agricultural land has already been gobbled up by the ever growing towns and cities since 1951 and with the expected level of urbanisation another 0.8 million hectares of agricultural land may be converted to urban use by 2001.

The increase in the urbanisation level entails rapid expansion of metro and mega cities. The regional impact of these large settlements has become more complex and extensive in the surrounding region resulting in depletion of natural resources and change in land use to non-conforming uses. All such activities taking place in the peripheral areas of the cities have proved detrimental to the environment as most of these activities are meant for meeting the immediate requirements of the core city and not the region as a whole. For instance, in the immediate vicinity of large cities, brick kilns are quite common on agricultural land.

The ever-increasing pressure of urban population particularly on large metro and mega cities, not supplemented by adequate infrastructure has led to a deterioration in the quality of life. Consequently a large chunk of urban population is residing in shanties, slums and squatter settlements with degraded and sub-standard living conditions. A study conducted by TCPO estimated that on an average, one third of the population in metro and mega cities resides in slums and squatter settlements. If the current trend continues, 75 percent of Bombay's population will be living in slums by 2301. The problems of slums is related to low per capita income and acute shortage of housing both in quantitative and qualitative terms. With the pace of urban growth, the face of urban India is rapidly changing. Bangalore, Pune and Dehradun which for long were considered cool, green and quite cities are turning into boom towns characterised by pollution of various kinds. Similarly, hill towns such as Ooty, Mahableshwar, Darjeeling,

Gangtok, Shillong, Mussoorie, Shimla, etc., are also facing the problem of explosive growth of population and tourist inflow. Forests in these areas have been destroyed due to which water crisis are common. Environmental implications of cities like Bangalore, Pune and Dehradun relate mainly to the changing functions of these cities from garden and institutional towns to industrial centers.

The massive increase in the number of people, coupled with inadequate infrastructure, has had a direct impact on the environmental quality of our towns and cities. The disposal of garbage, solid waste and liquid effluent generated and produced by the concentration of human beings and their activities in urban areas are the major cause of environmental degradation. High density of population tends to consume every conceivable open space thereby disturbing the mass and space relationship and the city's eco-system in particular. Most of the industrial cities in India generate industrial liquid waste between 8-16 percent of the total city waste and it is estimated that by the end of this century, the volume of this waste may go up to half the volume of domestic sewage in cities. The huge quantity of waste generated by these cities causes air, water and land pollution. About 60 percent of the atmospheric pollution is caused by vehicle exhaust in Delhi, the average annual level of suspended particulate matter in the atmosphere is 8 to 10 times above the acceptable level as recommended by the WHO.

Other implications of such a level of urbanisation relate to traffic and transportation problems, deterioration of central and old areas of the towns / cities, inadequacy of services and utilities, excessive use of energy, etc. Even though environmental awareness has increased, environmental conditions have not improved. Keeping in view the relationship between environment and development, sound environmental planning principles and practices are required to be followed along with latest innovative technologies so as to achieve sustainable development. Surveys to study and analyse the precise nature and quantum of the urban environmental problems are the pre-requisites for any planning and development exercise. The emerging technique of remote sensing is ideal for understanding the various facets of the urban environment and its implications on development.

4. NEED FOR PREPARATION OF BASE MAPS

The rapid growth of urban area, both physically and demographically has activated changes in terms of town structure, land use pattern, physical infrastructure and socio-economic-activities which have a direct bearing on the total urban environment. But mapping of these towns and cities has not kept pace with the growth, as a result of which many towns do not have up-to-date base maps. Mapping of all these physical changes is necessary for effective land use planning and development for sustainable environmental improvement of urban areas. To prepare the base maps for more than 4615 urban settlements by conventional methods is time consuming and expensive. The use of modern techniques of aerial photography and remote sensing could be better utilised as this would also facilitate updating of existing base maps by adopting a computer based Geographic Information System. The National Commission on Urbanisation (1988) has also suggested the use of the techniques of remote sensing for urban planning and development, particularly in monitoring the dynamic aspects of the urban environment.

The preparation of base maps for urban centers is not a regular affair in our country but it is taken up as and when the need arises. For preparing Master Plans / Development Plans and

for carrying out other town planning exercises base maps of the towns concerned are prepared generally on the basis of available topographical maps, city survey sheets, municipal and other departmental maps, etc., even though they are out dated. Of late, some of the State Town Planning Departments like Tamil Nadu, Andhra Pradesh, Gujarat, Madhya Pradesh, etc., have also started using aerial photos for preparation of base maps. It is estimated by TCPO that by now about 1200 Master Plans / Development Plans have been prepared in the country. Only for these towns some sort of base maps are available which also requires updating in terms of changed land use information and extended coverage due to increase in the urbanizable limits while the remaining towns do not have any kind of base map. It is believed that out of 300 Class-I cities, about sixty cities only have base maps.

Mapping of physical changes in temporal and spatial frame is essential not only for effective land use planning but also for taking up development exercise. Generally, Survey of India topo-sheets are available in the scales of 1:250,000 and 1:50,000 and in some cases, the scale of 1:25,000. These scales are useful for regional planning but are not of much use for urban planning exercises, implementation of schemes and for maintenance purposes, etc. It may also be mentioned that these sheets are also not up-to-date.

In large cities, in the absence of up-to-date base maps and land records, some times infrastructure facilities are sought to be developed on lands which have already been diverted for some other purposes, for instance roads are planned on land which is already encroached, etc. Thus, reliable and accurate base maps are the basic requirement for efficient land use planning and designing and development of urban infrastructure such as water supply, sewerage, traffic and transportation system.

Availability of proper base maps will have a far reaching impact on the entire system of land use planning and environmental management. In fact, accurate base maps along with proper land records could prove to be a useful resource for planning and developing the city as a self sufficient entity, incorporation of land related information i.e. use of plot / parcel, ownership, value, infrastructure availability, etc., on the base map itself will further enhance the utility of the base maps for planning, implementation and maintenance purposes.

5. APPLICATION OF REMOTE SENSING TECHNIQUES

To improve the environmental conditions in our towns and cities the techniques of satellite remote sensing and aerial photography which provides synoptic view of earth can help effectively in studying land and natural resources. Besides, for national land use perspective and policy it would be essential to get the correct status of urban land so as to facilitate the preparation of programs for urban areas and also formulate urban land use policy at national, regional and local levels. Satellite remote sensing can help in monitoring the growth of urban areas in terms of sprawl and extent in the country. Through this technique it would be possible to know as to what rate the agricultural land is being diverted annually for urban use / activities.

The settlement pattern in our country is not evenly balanced as there are certain areas in the country which are devoid of urbanisation while some areas are heavily urbanised as mentioned earlier. To open up new areas for urbanisation, it would be necessary to study the existing natural resources and infrastructure base. With the help of remote sensing, an attempt could be made

to study the general settlement pattern at the national and regional level to identify areas which are suitable for bringing under urban use.

At the town level, location and extent of slums and squatter areas, shanties, *jhuggi-jhopries*, etc., can be identified in and around towns using large scale aerial photographs. This would be helpful in framing various slums up-gradation policies and programs. Detailed land use structure, physical and spatial elements of urban environment can also be studied with the help of aerial photographs which are the basic requirements for taking up various planning exercises for environmental improvement of urban areas.

Our towns and cities are expanding vertically as well as horizontally. The tendency of lateral expansion of town is quite common inspite of the fact that large chunks of vacant spaces are available within the town providing scope for re-densification. Considering the commercial value of urban land it would be advisable to use each parcel of buildable land judiciously.

Aerial photographs provide for generation of large scale urban base maps as well as three dimensional view of urban structure and environmental features can be used as the best tool to study the deteriorating environmental conditions in towns and assess the environmental implications of various urban development programs being taken up which would serve as a base for environmental improvement of urban areas for sustainable development.

6. STAGES IN BASE MAP PREPARATION THROUGH AERIAL PHOTOGRAPHS

Like any other mapping project, the stages of work involved in the preparation of base maps of urban areas include:

- Acquisition of aerial photographs at large scale;
- Field work to collect ground control / truth data;
- Rectification of aerial photo and preparation of photo mosaics;
- Interpretation of aerial photographs and compiling of other necessary information from secondary sources for urban mapping;
- Preparation of fair maps for urban areas; and
- Printing of maps.

7. UTILITY OF BASE MAPS

Urban maps need to be multi-purpose so that they can be used by various agencies like Town Planning Departments, Local Bodies, Public Works Department, Services and Utilities Agencies, Taxation Department, Directorate of Survey and Land Records, etc., besides for planning, monitoring and management of development of towns. These maps would also serve as an efficient base for land use planning and designing of urban infrastructure such as water supply, sewerage, traffic and transportation. Additionally, the maps could be used as a base for cadastral mapping for property assessment and tax administration which will ultimately strengthen the financial base of local bodies. Various layers of information pertaining to particular towns can be created in the computer using Geographic Information System, which besides helping in efficient planning and development would serve as a permanent base in digital form for updating base maps from time to time by incorporating the data generated by the faculty administrative system at the

local level. The agencies which can use multi-purpose base maps to achieve desired results is given in Table - 1.

Table 1: Base Maps to be used by various Agencies

Sl. No.	Agencies	Use
1	2	3
1.	Town Planning Department	Planning, analysis and preparation of development plans, Town Planning Schemes, land pooling projects, layouts and site plans, etc.
2.	Development Authorities	
3.	Housing Board Local Self	
4.	Government	
5.	Utilities & Services Departments (i) Water supply (ii) Electricity (iii) Drainage & Sewerage (iv) Telecommunication	Morphology of towns, slope analysis, population density, land use planning, development, management, implementation and monitoring of projects.
	(v) Police Department	Land uses, activity zones, population density, crime zones etc.
	(vi) Health and Education Department	Location of facilities and its relation to population.
	(vii) Tourism Department	Places of tourist interest, their location, facilities available and planning for better services and facilities.
6.	Census Department	Survey and analysis of data and presentation of findings.
7.	Universities and Research Institutes	Research work pertaining to Planning & Geography departments.
8.	Private organizations dealing with marketing sales, insurance, etc.	For field operations and field staff.

8. URBAN MAPPING SCHEME

Of the 4615 urban agglomerations (UAs), cities and towns in the country only about 1200 cities and towns have a Master Plan / Development Plan which indicates the urgent need for preparation of base maps for urban planning. Presently no single agency is responsible for production of large scale urban base maps of towns and cities, as a result, there is a tremendous scarcity of up-to-date base maps. In order to fill in this gap the Urban Mapping Scheme was initiated by the Ministry of Urban Development, Government of India, as a pilot project during the Eighth Five Year Plan to cover 50 towns (now enhanced to 53) in two phases of 25 and 28 towns each respectively from different states with the help of latest technology of aerial photography and remote sensing by

Table 2: Towns Covered under Urban Mapping (Phase - I and II)

Phase - I Towns			
Sl. No.	State	Sl. No.	Towns Covered
1	Uttar Pradesh	1	Faizabad
		2	Agra
		3	Nainital
2	Gujarat	4	Porbandar
		5	Valsad
		6	Veraval
		7	Surendra Nagar
3	Maharashtra	8	Bharuch
		9	Ulhas Nagar & kalyan
		10	Akola
		11	Nagpur
		12	Ratangiri
4	Andhra Pradesh	13	Nanded
		14	Solapur
		15	Khammam
		16	Nandyal
5	Orissa	17	Bhimavaram
		18	Gudivada
		19	Puri
6	Tamil Nadu	20	Bhubaneswar
		21	Tindivanam
		22	Nagapattinam
		23	Karaiikkudi
		24	Tiruchendur
		25	Rajapalyam
Phase - II Towns			
Sl. No.	State	Sl. No	Towns Covered
1	Karnataka	1	Mangalore
		2	Mysore
2	West Bengal	3	Asansol
		4	Siliguri
3	Madhya Pradesh	5	Bhopal
		6	Indore
4	Rajasthan	7	Ajmer
		8	Bikaner
5	Haryana	9	Ambala
		10	Gurgaon
6	Punjab	11	Muktsar
		12	Moga
7	Meghalaya	13	Shillong
8	Sikkim	14	Gangtok
9	Chandigarh	15	Chandigarh
10	Assam	16	Guwahati
11	Kerala	17	Kochi
		18	Thiruvananthapuram
12	Bihar	19	Gaya
		20	Chapra
13	Pondicherry	21	Pondicherry
14	Goa	22	Panaji
15	Himachal Pradesh	23	Hamirpur
		24	Nalagarh
16	Arunachal Pradesh	25	Itanagar-Naharlagun
17	Mizoram	26	Aizwal
18	Nagaland	27	Kohima
19	Tripura	28	Agartala

adopting computerised GIS. TCPO has been entrusted with the task of implementation of the Urban Mapping Scheme at national level. The basic objectives of the scheme are:

- To obtain aerial photographs and photo mosaics for selected towns on the scale of 1 : 10000;
- To develop technical capability of the Town Planning Departments at the center and state; and
- To prepare large scale base maps of 1:2500 scale with necessary details for the selected priority towns and to generate digital graphic data in a revision cycle.

In the first phase, 25 towns were selected in consultation with the State Governments. National Remote Sensing Agency (NRSA) was assigned the work of supplying aerial photo mosaics for these towns along with line maps after rectification, ground control, etc. Work on the first phase comprising aerial photographs and fair maps have been completed for all the 25 towns. For the second phase, another 28 towns (Table - 2) have been identified and aerial photography and mapping is in progress for 13 towns.

The Urban Mapping Scheme provides vast scope in improving the decision support system in terms of making available latest and accurate maps and photographs for planning, management and monitoring. This becomes particularly relevant in view of development and investment in space technology, which is generating large amounts of high resolution data to be used for various applications. Thus, use of remotely sensed data for urban planning

and management is a step in continuation and support of the policies framed for generation and use of special data. The maps generated under this project for 25 towns of first phase provide scope for a range of applications such as:

- Preparation of large scale urban base maps,
- Preparation of land use Plans,
- Preparation of Master / Development Plans,
- Monitoring unauthorized urban development, and
- Planning for utilities such as electricity, water supply, waste disposal, communication, etc.

Various agencies including Jal Nigam, Development Authorities besides Town Planning Departments are successfully using these maps. Besides these maps also provide scope for traffic and transportation planning and management and also for administrating law and order. These maps in association with cadastral maps and information forms a base for valuation and tax collection of municipal properties.

9. CONCLUSIONS

In view of the limited coverage of the Urban Mapping Scheme in comparison to the requirement of up-to-date base maps, for 4615 urban settlements in the country there is an intense need to prioritise preparation of base maps, immediate priority should be given to all class - I towns numbering 300 as per 1991 census and to those towns identified as GEMs by National Commission on Urbanisation, and subsequently be extended to all the towns.

REFERENCES

- Census of India (1991), *Series-1, Paper-2 of 1991 - Provisional Population Totals : Rural-Urban/Distribution*.
Center for Science and Environment, (1984-85). *The State of India's Environment 1984-85, the Second Citizen's Report*.
Government of India, Planning Commission (1992-97), *Eighth Five Year Plan, Vol.11*.

7 | INFORMATION TECHNOLOGY FOR URBAN PLANNING AND DEVELOPMENT

Abstract

Advancements in telecommunications, computer and satellite technology during the twentieth century has not only improved the connectivity but have affected the life style of people, process of governance and administration, approach for planning and development, functioning of various urban systems, social structure, education, and various other facets of human activities. Computerized urban information system and urban observatories as envisaged by the UNCHS, should be developed at national, state and municipal level by the planning and development agencies with facility to update the data online with access to public. The preparation of Plans for various towns / cities, will be facilitated to a great extent by the advancement of Information Technology, in near future. A computerized inventory of best practices regarding use of Information Technology (IT) in planning needs to be developed at central and state level with proper networking, the paper suggests.

1. INTRODUCTION

Advancements in telecommunications, computer and satellite technology during the twentieth century has not only improved the connectivity but have affected the life style of people, process of governance and administration, approach for planning and development, functioning of various urban systems, social structure, education and various other facets of human activities. Enactment of the 'Information Technology Act 2000', would provide legal recognition for all those activities carried out by means of electronic data interchange and electronic records and digital signature. With the Cyber Law in force from 17th October 2000, e-mail has become a legal document. A move is on, to have a convergence act for converging the technologies such as computer, communication, consumer electronics and the contents.

The proliferation of the internet and web site based technologies have changed the dimensions of business and commerce. Users of internet have steadily been increasing and today India has four million internet users. In fact, technological innovations in the form of internet world wide web have ushered in the new era of information technology which will have impact on every sphere of human life including habitat. Within a few years, India will be one of the IT superpower, when perhaps every school or college in the country will have internet, and people in rural areas will also start using internet. IT will be used more for innovative ways to find out information on various aspects of socio-economic development, to project our cultural heritage, to share the best practices and experiences in various fields of development and to have global connections. Fast convergence of Infotech, communication technologies and satellite technologies will have great impact on the planning and development process of human settlements. IT may facilitate or hasten the development scenario and as such it needs to be treated as process and not an end. The real test lies in the application of information technology as an effective tool for urban development and planning.

2. EMERGING DIMENSIONS OF URBAN PLANNING

An appraisal of urban planning and development practices reveal that during the last century particularly after independence the results achieved are not commensurate to the desired goals

and objectives of planned urban development. Systematic data base both for spatial and attribute particularly at town level and intra-city level, an essential support base for a meaningful plan, is woefully inadequate. It is estimated that one-fourth of total urban settlements which have some sort of Master Plans might be having large scale base maps showing broad features. As part of planning practice Development Plan approach has emerged as an important instrument for urban development planning in the country. So far, about 1000 Master Plans / Development Plans have been prepared and Plans for about 400 towns are in the process of preparation and finalisation. The concept of Master Plan has no doubt made a discernible impact in regulating and channelising the development and growth of towns and cities and without this the situation would have been worst in the urban areas. However, experiences of implementation of Master Plan has not been very encouraging mainly because of weak data base, financial constraints, ambitious plan proposals, lack of integration between spatial planning proposals of the Master Plan and Economic Plan at state and regional levels, inadequate legislative support in certain areas, lack of flexibility in development approach, multiplicity of agencies with overlapping jurisdiction or undefined clear cut demarcation of responsibilities, etc.

As such issues regarding efficacy of Master Plan have been discussed at length in the National Workshop on "Master Plan Approach : Its Efficacy and Alternatives", organised by the Ministry of Urban Development / TCPO which recommended that the Master Plan as a tool for urban development planning cannot be done away with, rather the need is to make it more dynamic, realistic and effective. The workshop recommended for greater involvement of people, elected local bodies and their representatives at every stage of plan preparation and implementation in the spirit commensurate with the provision of 74th Constitution Amendment Act. In order to develop realistic and effective urban development planning system, steps need to be taken to evolve Resource Mobilisation Plan along with Spatial Development Plans. It also recommended that planning exercise should aim at guiding the activities of both public and private sector including the growing informal sector while keeping the large interest of the society in view. Review and revision at regular interval should be an essential component of the planning process to impart flexibility to the development process. Urban development planning should aim at devising ways and means to increase the economic productivity of urban population and improve upon efficiency by eliminating bottlenecks and drawbacks in the delivery of urban services and generating more employment opportunities.

The urban development planning process is required to meet the challenges posed by the emerging urban scenario. It is estimated that by 2021 about 550 million people accounting to about 41% of total population would be living in urban areas. In the span of 20 - 25 years almost second urban India will be added to the fold of urban population in the country. Estimates show that metropolitan cities which were 23 in 1991 may go up to 40 by 2001, 52 by 2011 and 75 by 2021. Similarly, number of class-I towns (agglomerations) numbering 300 in 1991, may also be doubled by 2021 when about three-fourths of urban population is anticipated to be confined to class-I and metropolitan cities. Increasing pressure from rural areas to urban centers would result in high growth of urban slums and urban poor especially in the fringe areas of cities.

Urban areas are going to play a pivotal role in smooth implementation of various policies and programs enunciated through economic reforms and liberalisation. In order to achieve the desired level of 7 - 8 % growth of economy in the next two decades adequate level of infrastructure and

civic services need to be provided in and around large and fast growing urban centers which are to function as the nerve centers of the industry, trade and commerce, construction and service sectors.

To enable the small and medium towns to act as growth centers for regional development, it would require sizable investment in the infrastructure so as to develop proper rural - urban continuum. Planning for urban development, would, therefore, assume greater role for channelising the urbanisation process which would promote sustainable urban growth and regionally balanced settlement system in the country.

The planning and development methodologies in the years to come are likely to be affected by hi-tech information technology, complex institutional networks, high energy consuming urban living, material affluence and improvement in living standard. In this rapid urbanising society, towns and cities are growing very fast and the hi-tech age of electronic, internet, computer, communication system will drastically change the life style which in turn will affect the planning and design practices. In near future we will have more of tele-conferencing and tele-administration, e-governance, e-commerce, e-planning and more of faster communication than commutation. The rate of change in technology is faster than human ability to adjust the newer environment. All these will demand more efficient urban system thereby requiring newer models of urban planning and development. The ever increasing haphazard growth pose greater challenges to planners for evolving future concepts and techniques which could guide future trends in urban planning and development in an harmonised manner. It calls for planning for a better environment within the available resources and also within the environmental constraints. The future planning has to take into consideration the emerging structure of the cities which need to be technologically savvy identifying newer areas of development, newer resources and application of newer urban technologies to rationalise the use of land and other resources for sustainable urban development. In the age of information technology events move faster at an intricate speed and the space loses its meaningful dimension and as such preparedness is required to absorb the likely future shocks. We have to change our planning and development approach to check the encroaching chaos of over urbanisation and wasteful use of resources.

With the enactment of 74th Constitution Amendment Act, 1992 urban local bodies would be the institutions of self governance. Funds, functions and functionaries of the urban local bodies would be the essential ingredients of decentralisation, which would generate a powerful urban voice. Urban Development Plan Formulation and Implementation (UDPFI) Guidelines prepared by Institute of Town Planner, India at the instance of Ministry of Urban development, Government of India and the Report of the Technical Group on Urban Planning System constituted by the Planning Commission deliberated on these issues and suggested interactive and dynamic approach for urban development planning. It has been recommended that in view of the emerging urbanisation, legal, administrative, advancements in economic and technological scenario, the urban planning system while striving for sustainability of urban development should have flexibility and transparency in provision of physical and social infrastructure. Identifying the involvement of private initiatives in urban development. The plan implementation mechanism needs to be linked with the budgetary process through Five Year Plan and Annual Plan mechanism to make the entire urban development planning system more effective and rational. Accordingly, the UDPFI Guidelines as well as Technical Group on Urban Planning System suggested a package of inter-

related Plans comprising of long term Perspective Plan (20-25 years), medium term Development Plan (5 years), Annual Plans, Projects and Schemes synchronising with Five Year Plan and Annual Plan of prevalent economic planning system adopted by the country. The Perspective Plan would be a broad policy document and may be prepared for metropolitan and large cities including fast growing urban centers and potential growth centers. Development Plan would be a detailed Plan indicating various proposals and priorities of development while Annual Plans, Projects and Schemes are implementation plans to be synchronised with Five Year Plans and Annual Plans or state / local bodies. For operationalising the emerging planning system in an effective manner the information technology will play a crucial role in facilitating the planning process at various stages ranging from collection of basic data and information for implementation and enforcement of plans. The policy initiatives taken for wider application of information technology indicate that how IT can facilitate the planning and development process.

3. POLICY INITIATIVES IN INFORMATION TECHNOLOGY

Considering IT as an agent of transformation of every facet of human life, the government has decided to make India a Global IT superpower and a front runner in the age of Information revolution. The policy envisage IT for all by 2008, accelerating the rate of PC penetration in the country from one per 500 in 1998 to one per 50 persons along with a universal access to internet / extra nets / intranets by the year 2008 with a wide range of IT applications covering various socio-economic and development aspects. In order to achieve the goal of IT for all by 2008, policies are envisaged for setting the base for a rapid spread of IT awareness, propagation of IT literacy, networking of government functioning, IT led economic development application and penetration of IT in rural areas, development of training for IT, wider use of day-to-day IT services such as tele-banking, tele-medicine, tele-education, tele-document transfer, tele-library, tele-info centers, e-commerce, public call centers, etc. In view of the importance of information technology to be frontier area of knowledge and critical for assimilating, processing and productivising all other sphere of knowledge, an operation knowledge campaign is required to be launched by initiating various schemes and programs. Information technology would be used as a vehicle for all round socio-economic development in the country which in turn would facilitate creation of a strong domestic IT market. While taking pro-active steps to promote the growth of IT industry it is also being taken care of that these developments do not create a new division in society, referred to as digital divide by some people - divide between those who have access to IT based services and those who do not. As such government has constituted a Working Group on Information Technology for masses in May 2000. The Group is deliberating on major initiatives taken by various state government agencies for taking IT to masses i.e. potential areas and application for deployment of IT, schemes and programs for citizens participation and a comprehensive plan for taking IT to masses.

Over the years, ministries / departments of central and state governments as well as other agencies have been taking active interest to use IT in various public services. Some of the initiatives taken by central and state governments having direct and indirect bearings on urban and regional development planning includes:

- Creation of web sites by the ministries and departments regarding various programs and schemes operated by them for information of the public;

- Development of integrated information system by the Planning Commission on various schemes being executed by NGOs in the country through various ministries and departments; and
- Countrywide program for land record computerization in collaboration with states.

In 534 districts basic infrastructure has been set up and computerisation is at different stages. Measures are being taken by various ministries and departments to improve administrative efficiency through IT.

At State level, the Government of Andhra Pradesh has taken a lead in developing IT industry and use of IT in the process of governance in citizens oriented schemes. Computer Aided Registration of Deeds (CARD) is an important system developed by Registration Department for completion of registration deeds in one hour. Twin City Network Services (TWINS) has been implemented as a single counter packaging 18 types of citizen services and networking in six departments of the state government. This service is being replicated at 285 counters on Build, Own and Operate (BOO) basis. Fully automated service of transport department is another example of the use of IT. The Government of Delhi is preparing an IT policy to make Delhi into a Cyber city. IT Kiosks are being set up so that common man could interact with the government. Gujarat government also plans to establish 1500 Information Kiosks in collaboration with private sector. Smart Card are being used by the Transport Department for issuing driving licence. In Haryana it has been planned to have e-governance by 2005. Private sector would be associated for setting up IT kiosks. Action initiated for computerised operation of local bodies and municipal committees in the state.

The Government of Karnataka has launched an ambitious IT policy called *Mahiti* to take IT to masses. In Bhoomi Project 190 lakh land records concerning to 60 lakh farmers have been computerised. High speed network is being set up. IT initiatives taken by Kerala Government relates to project to be implemented in 1300 '*panchayats*' in the state which will have information on birth-death, caste, ration card, social welfare scheme, housing schemes, etc., and subsidies and incentives. Single counter based services for seven departments known as Friend Project is being operated through IT. A Housing Portal has been set up for providing information on housing schemes, availability of financing, and construction technologies. In Madhya Pradesh, *Gyandoot* is the main project under which 21 rural Cyber Cafes called *Soochnalayas* have been established. Each *Soochnalaya* provides service to about 10 -15 *gram panchayats*, 20 to 30 villages covering 20000 to 30000 population - located at various public places. The service provided by these centers include among others marketing information, land records, etc. In Maharashtra some of the major projects include registration and stamp duty, sales tax and transport departments. In Pune, District Collectorate has provided one point service to citizens on various functions performed by the collectorate. In Punjab Geographic Information System is being planned with basic parameters like village data base, road network, irrigation and canal network, power network and information regarding each department in the form of layers. The Government of Rajasthan has decided to implement most of e-governance initiatives on its own. An information system for *mandis* connecting 236 *mandies* on line have been developed. Tamil Nadu has given lot of emphasis on IT services being provided in local language. Broadband network infrastructure is being developed. In Uttar Pradesh 70 out of 83 districts have optical

fibre connectivity. Government is introducing separate channel on cable network in Lucknow to disseminate information related to government plans. In fact lot of work done in the government sector need to be publicised to the public so that benefit of the existing level of IT induction reach the people of the country.

4. INFORMATION TECHNOLOGY AS A TOOL FOR PLANNING

Information technology in its fully convergent form encompasses various forms of information delivery systems such as remote sensing based aerial photography and satellite imagery, media based information both electronic and print media, computers, internet, communication, etc., into one integrated environment which is considered as a major vehicle for all round socio-economic development in the country. IT has wide spread application in various sectors of development including planning, development and management of human settlements. IT should not be taken as replacement of existing techniques and medium available for planning and development rather it should taken an extension to facilitate the process of development. As such internet is known as fourth mode of communication.

The basic data and information both spatial and attribute is the pre-requisite for preparation of Perspective, Development or Project Plan for any town or city. Aerial Photography and satellite imageries have successfully been used to generate layers of information in terms of base maps, physical and geomorphological maps, land use analysis maps, spatial development and growth pattern maps, assessment and identification of physical resources, like water, soil, forest, minerals, fauna and flora, structure and density of development, environmentally hot spots, problematic and sensitive areas, identification of buildable and suitable sites for habitation, slums and squatter settlements, rough population estimates, unauthorised construction and development, flood prone areas, severe pollution affected areas, congested and overcrowded areas, traffic bottleneck areas, etc. All this information through IT, coupled with conventional means could be generated in a cost-effective manner with accuracy and authenticity. This would facilitate reducing the time required for preparation of Plan.

Another set of attribute data now available on floppies and discs from the Census Department, NICNET, DISNIC and other networks including internet and theme based web sites is also easily available for obtaining necessary background information supported by facts and figures. With the click of mouse a wealth of information could be scanned and the required information could be down loaded for Plan preparation.

Once the basic data and information is compiled and collected through IT, it needs to be supplemented to bridge the gaps wherever necessary through conventional means, field surveys, sample surveys and from other secondary sources. All these information fed into the computer in GIS mode could be analysed, processed and generated in the required format using GIS packages and data base management packages. In this process computation and analysis of large amount of data which otherwise takes months and years can be done in few days ensuring accuracy in processing. In addition, it can handle any amount of complex data and help in developing models and alternatives.

The next stage is presentation of plan proposals and preparation of draft reports. Computer based graphic packages, spreadsheet packages and word processing packages have almost revolutionised

the presentation techniques. All the maps, drawings, charts, graphs, pictorials, etc., are generated through these techniques in a neat and desired format for making presentation. Application of IT for this purpose not only improve the quality of output but also accelerate the generation of maps and drafts in a quickest possible time. The draft of the Plan and project, once put on internet and specific web sites in an interactive system the public participation and inter-sectoral collaboration would be easier for refinement of the Plans and drafts.

The final Plan and project once made available on internet and web site the various agencies responsible for implementation and enforcement of Plans and projects could easily refer the proposals and provisions while taking up various projects and schemes for implementation.

Monitoring of Plan implementation would be easier in an interactive system. The entire Plan with geo-reference in the computer provide a sound base for regulating the development, monitoring the development, and management of services. Sub-system for various aspects of Plan like building permission and disposal system, land registration and deed issue system, recovery of land and property tax could be developed as part of Urban Information System through IT which would be helpful in monitoring and management of development as well as for review and revision of the Plan in a periodical manner. Smart and intelligent system for critical aspects of the Development Plan need to be developed for tackling the problems on fire-fighting basis like problems of unauthorised development, polluting units and industries in non-conforming areas, re-densification and decongestion in particular settings. Packaging of essential citizens services at one central point has been successful experiments in redressal of public grievances and delivery of service through IT.

5. ISSUES AND IMPERATIVES

The Working Group on Information Technology for masses while deliberating on various aspects of IT identified some of the issues which need to be given priority attention for the growth of IT based industry, business and services. Infrastructure and services should be developed in a systematic manner so that IT services are available in the remotest part of the country. The present level of IT services and facilities are inadequate to reach the IT services to the common man. For instance in a country of one billion population there are about 70 million households which have TV out of which only 50% have cable connection. As regards telephone there are about 24 million telephone connections with 8 million telephone households and so far there are only one million internet connections. Besides availability of IT services its affordability and access is also important. The communication and networking infrastructure need to be established, preferably introducing newer and low cost technologies for easy access to the remotest corner of the country.

The concept of e-governance has been mainly confined to computerisation of office functioning. Its benefits to the large public could not reach as envisaged. The need is that, each agency or department including Town Planning Department should identify certain citizen oriented services for use of IT so that it's benefit reach to the people. This would call for sustainability of good quality of services to citizens for functions of the Planning Departments which should be fully computerised for delivery of public services and internal functioning of the office. The planning and building permission, change of land use cases, implementation of Master Plans are some of the areas which need to be computerised for easy access to the masses.

IT education and training and its application for public awareness is another important issue which will act as a foundation for the growth of IT industry in the country. In most of Planning Schools facilities for IT education should be developed so as to produce IT savvy planners in the future. The existing planning personnel may be given adequate exposure and refresher courses to become IT literate. For planning applications, IT tool need to be developed to make the learning and application process considerably simple users friendly and affordable. For a country like India with about 5000 urban centers and more than 6 lakh villages spread over in a large canvas, distance education through IT should be propagated to harness the potentials of Information Technology. For this purpose a campaign may be initiated identifying the benefits of IT in the country. Specific courses may be conducted for application of IT related functions. A network of educational institutions should be established to maximise the induction of IT in order to create a pool of experts and professional. Some models for IT based training and education may be developed for mass education.

An awareness program to make IT as a mass movement need to be worked out by encouraging value added network services in the form of electronic-kiosks 'One Stop' 'Non-Stop' series to the public. IT campaign may also be launched in regional languages. Some of the demonstration projects may be devised in each state taking into account the specific needs of various regions on the line of "Wired Village Pilot Project" launched under the aegis of National Informatic Technology Task Force. DISNIC program need to be widespread and data base may be updated on line.

Computerised urban information system and urban observatories as envisaged by the UNCHS should be developed at national, state and municipal level by the planning and development agencies on the lines of Rural Information System Program with facility to update the data online with access to public. A Citizen's Charter for various planning and development functions need to be made available to make responsive and effective administration.

6. CONCLUSIONS

In fact the preparation of Plans for various towns / cities, will be facilitated to a great extent by the advancement of Information Technology, in near future. A computerised inventory of best practices regarding use of IT in planning needs to be developed at central and state level with proper networking. All the Plans and planning records should be kept in electronic and optical media for proper storage and retrieval. E-site planning, which is interactive and user friendly, may be created by the ITPI for the benefit of professional planners. In nutshell, all those impediments in the way of IT application need to be removed so that it is available economically, interactively, in limitless capacity and round the clock.

8 | TCPO FROM URIS TO URBAN OBSERVATORY

Abstract

Since, inception TCPO have been bringing out various policy documents, prepared Inter - State Regional Plans and first ever Comprehensive Master Plan for Delhi, conducted various research studies, undertaken consultancy projects, formulated Model Town Planning and Regional Development Law, besides prepared a large number of Manuals and Guides on various aspects of planning, and tirelessly worked for developing urban and regional information system in India. This paper is an attempt to showcase the work of TCPO, with reference to developing urban and regional information system (URIS) and it's initiatives in setting up Urban Observatories in the country. In fact for establishing URIS on firmer footing, it is essential to have three-tier structure at National (TCPO), State (State Town Planning Departments) and Local (Metro and cities / towns) levels ensuring adequate hardware / software / manpower for managing the system. These efforts gets more pronounced due to decentralization of planning functions to the local bodies, which don't have access to the latest information, the paper underlines.

1. INTRODUCTION

Immediately after the independence the Government of India set up the Town Planning Organization (TPO) in 1955 to prepare the Master Plan of Delhi in 1957, Government of India also set up another organisation called as Central Regional and Urban Planning Organisation (CRUO) to evolve a Plan for Delhi Region and to advise on the development of steel towns, river valley projects and other matters related with urban and regional planning. The CRUPO started functioning actively from September, 1959 in an advisory capacity to the Central Ministry of Government of India, Planning Commission, State Governments, Local Bodies and Public Undertakings. The first conference of State Ministers dealing with town and country planning was organized by CRUPO in 1960 which made a beginning for undertaking a countrywide program for preparation of Master Plans, enactment of town planning legislation, setting up of Town Planning Department in the state and union territories and augmentation of facilities in education and training in town and country planning.

The Town Planning Organization (TPO) completed the assigned task of preparation of Master Plan for Delhi in September, 1962 and as such the main function of TPO was over. Thereafter, Government of India decided to merge TPO and CRUPO in 1962 and the new organization was christened as Town and Country Planning Organization (TCPO). Since then the TCPO has been functioning as an apex technical advisory and consultant organization on matters concerning urban and / regional planning and development in the country. It has been assisting the Ministry of Urban Development and Poverty Alleviation and other Central Ministries of the Government of India, state governments, public sector undertakings, local bodies / development authorities on matter pertaining to urbanization, town planning, urban transport, metropolitan planning, human settlement policies, regional development strategy, planning legislation, urban and regional information system, urban mapping and research and training. While discharging its responsibilities TCPO undertakes both non-plan and plan functions.

Since, it's inception TCPO have brought out various policy documents, prepared Inter - State Regional Plans and first ever Comprehensive Master Plan for Delhi, conducted various research

studies, undertaken consultancy projects, formulated Model Town Planning and Regional Development Law and prepared a large number of Manuals and Guides on various aspects of planning, and tirelessly worked for developing urban and regional information system since, 1971. This paper is an attempt to show case the work of TCPO, with reference to developing urban and regional information system (URIS) and it's initiatives in setting up Urban Observatories in the country.

2. DEVELOPMENT OF URIS

Town and Country Planning Organisation (TCPO) is the pioneer organisation in the country to perceive the need for development of Urban and Regional Information System (URIS). As far back in seventies the concept had a formal recognition in the Annual Conference of Chief Town Planners of States and UTs held in 1976. Since then a number of committed and persuasive steps have been taken to promote a comprehensive Urban and Regional Information System in India. In July 1977, a noted UN expert on Information Systems, Dr. J.C. Coiner, visited India to carry out a feasibility study on the development of URIS at various administrative unit levels in urban and regional planning with emphasis in integration of sectoral and spatial aspects of planning. It was recommended among other aspects, the creation of geographical base files to support planning activities, identification of a lead organisation, creation of an information cell, and training of personnel working in the information cell on geographic base file techniques and system designing. Besides, it was also recommended that government should actively pursue the implementation of a computer-based spatial information system.

In 1979 the TCPO sponsored a National Seminar of experts to discuss the conceptual framework of URIS, information requirements and gaps in informative, and also the organisational framework. The experts, Chief Planner, Town and Country Planning Organisation, Government of India, New Delhi and President, Institute of Town Planners, India recommended establishment of URIS in the central TCPO in collaboration with State Town Planning Departments and other agencies. It also decided to set up a Steering Group to oversee the development of URIS.

Steering Group on URIS: Following the recommendation in the National Seminar a Steering Group on URIS was constituted with following terms of reference to:

- Identify data needs for spatial structuring to achieve incremental, social and economic parameters;
- Evolve a data processing form for the purpose of urban and regional Planning;
- Suggest guidelines for coordinating the data collected by the various agencies in the country;
- Design an organisational structure to fill up the information gaps;
- Identify the training needs of the people involved in developing a system; and
- Make suggestions for conducting case studies and monitoring.

The Steering Group submitted two Reports one on Urban Information System in 1981 and the other on Regional Information System in 1983. These Reports deal with the minimum critical data to initiate URIS into operation. The Report organized the data groups into three broad cat-

egories viz. (a) physical, (b) socio-economic factors, and (c) basic infrastructures, services and civic amenities. The listed data under Urban Information System includes geo-physical, demographic, crime statistics, employment status and structure, household income and assets, public investments, banking, industrial estates, institutional arrangements for specific development functions, financial structure of urban local bodies, land use, housing stock and facilities, water supply, sewerage, electricity, transportation, communication, medical and health education, recreational and cultural facilities.

With respect to the regional information system, though it was tried to identify similar areas of information, it differed according to regional characteristics and geographical setting. Under this system the data required to be collected pertaining to geographical localities, settlements, demographic, land use, agriculture, irrigation, forests, livestock, poultry minerals, pisciculture, industries, transport, communication, water supply, drainage and sewage, power, housing, education, healthy, finance and tourism. Emphasis was also laid on achieving some co-relation between the function and administrative boundaries for the system.

For the Urban Information System (UIS) the recommendations was to collect data at the level of planning area / urban agglomeration for general planning purpose at municipal area level for local body function and at census ward level for neighbourhood function. For the Regional Information System (RIS) the geographic referencing system was categorized as location specific and area-specific, the acquired data was suggested to be collected at regional, sub-regional, *taluka* and settlement levels.

As far as organisational structure was concerned, a two tier information system was thought to be more appropriate under the conditions existing in the country. The first tier, designated as National Focal Point (NFP) was to be located in the central TCPO, with the main function of coordination of data collection at the national level. The second tier organisation in the state was to be called State Level Focal Point (SLFP) with the responsibility of collection, compilation of data at the state level covering both urban and regional aspects. Obviously, the SFLPs were to be located in State Town Planning Departments. Both the NFP and SLFPs were to effectively

Table 1: Scale of Maps for Regions

Sl. No.	Region	Unit Area for data compilation	Scale of maps (topographic and administrative)
1.	Macro region (national context)	District (with locational data on Urban & industrial centers of national and regional importance.	1:10 million 1 : 5 million 1 : 1 million
2.	Meso region (size comparable to states)	<i>Tehsil</i> or <i>Thana</i> or Development Block (with locational data on settlements (Urban-industrial) of national and regional importance)	1 : 1 million 1 : 250,000 or 1: 200,000
3.	Micro region	Village (district & Blocks)	1 : 200,000 1 : 50,000

inter-act with other data generating agencies at different levels to obtain the much needed data for URIS. Although URIS is primarily intended to provide accurate and timely statistical and geographical information to central and state governments, other organisations in the academic, public and private sectors were also expected to effectively participate in the information output once the system is organised on a firm footing

The Steering Committee was also of the view that in a multi-level framework in which the planning process operate in the country, it is essential to relate the scale of regions with the size of the unit area for data compilation. As the mapping is a complementary technique in data analysis and interpretation, the scale of map on which the data is to be plotted is equally important so that the maps based on secondary data portray the spatial variations as close to reality as possible. Accordingly, the Committee suggested following scales for maps (Table 1):

Pilot Studies: In order to meet the information needs of quantitative as well qualitative importance, the data need to be systematically collected, processed and stored so that meaningful information can be retrieved. In a large country like ours there exist significant differences in data systems, therefore, to understand the existing system of data organisation, an attempt was made to enlist and categorize the secondary data according to the levels of unit areas at which they have to be compiled. Based on the report of the Steering Committee, two pilot studies on System Analysis were carried out, one for Chengalpattu (Tamil Nadu) and another for Anand (Gujarat) with the help of respective State Town Planning Departments under the technical guidance of TCPO. As part of these studies a number of training programs / seminars on URIS were organised by TCPO and study visits were undertaken by UN Consultants Mr. Coiner in 1977 and Dr. Cartwright in 1985 for the development of Urban and Regional Information Systems. The objective of the study was to design an information system after analysing the existing data attributes such as data frames (localities), flow, periodicity, time lag, reliability, coverage, accessibility, concept, etc., as were available with the data agencies, and in the process efforts were to be made to identify data gaps. Apart from these, the pilot study was required to validate the data needs identified by the Steering Group and demonstrate the feasibility and coordination of data collection at all levels of government. A system approach was adopted for the study and the steps taken include:

- Identification of data source agencies;
- Format analysis and system requirements, data attribute analysis and format design;
- Data storage, processing and retrieval system; and
- Documentation.

These two studies of Chengalpattu and Anand have generated three reports each on (a) Agency Analysis, (b) System Requirement, and (c) Attribute Analysis and Format design, which provided the draft for the final report.

The bulk of information was compiled from local organisations, especially municipality, *tehsildar*, district education officer, district industries center, employment office, post office and police departments, etc., which collected the information for their day-to-day function

/ administration. The Census of India and Town Planning Departments are the two other organisations which collect data at a primary level. But the Census of India collects decennial information on the social and economic aspects of the population even though it takes a long time to publish its findings. It does not compile the information on some of the important planning indicators such as migration, working force at the small town level. As regards Town Planning Departments are concerned they have information on data relevant to land use and other associated aspects, but the data are not collected on regular periodicity. Besides, the Central Statistical Organisation (CSO) and the National Sample Survey Organisation (NSSO) are yet other data collecting agencies, but only on few aspects that too not within the framework of urban and regional planning with the result that there are data gaps concerning such subjects as income, assets, expenditure, etc., at settlement level. Some of the observations emanating from the studies are:

- There are many problems with elementary spatial units for collection of data while on one hand they are not uniform of all the cities and towns in the country and on the other hand even the available data is not accessible;
- Many of the data source agencies do not maintain any format due to which the flow of data is not proper, moreover in some cases, there is duplication of effort which creates overlapping;
- Mapping, which is an essential part of urban and regional planning is only available in case of Town Planning Departments, the Census of India and the Survey of India. The locational aspect of infrastructure such as housing, industries, transport, water supply, electricity, sewage network is totally non-existent;
- There is also the problem of financing agencies that collect data; and
- A lot of time is taken in the publication of data, mainly because of the low priority given to statistics.

3. TASK FORCE ON URBAN AND RURAL STUDIES BY NNRMS

Recognizing the need and importance of natural resources management, the Planning Commission, Government of India in 1983 set up the National Natural Resources Management System (NNRMS) as a system to facilitate optimal utilization of the country's natural resources through a proper and systematic inventory of the resource availability and reduce regional imbalances through effective Planning. The Department of Space (DOS) is the nodal agency to establish NNRMS in the country. The Planning Committee of NNRMS Chaired by Member (Science) Planning Commission with Secretaries of various departments as members provided guidance in evolution of NNRMS in the country. The Planning Committee set up nine Task Forces covering a range of areas / disciplines including Task Force on Urban and Rural Studies (in February 1984) to study:

- The existing system of information collection and management decision making in the area; ways to improve the existing system using conventional techniques;
- Extent to which modern Remote Sensing (RS) techniques can improve the existing system; and
- Evolve a balanced and integrated information / management system with an optimal mix of conventional and remote sensing techniques.

The Task Force submitted its report in January 1985 and having analysed the existing system, identified elements amenable to Remote Sensing and the areas where operational systems need to be put up on priority basis. Some of the major recommendations of the Task Force are:

- One Remote Sensing Unit (RSU) suitably equipped be established in TCPO and in each State / UT (for budgetary purposes only 25 RSUs were to be catered);
- Five of these RSUs with TCPO and TCPOs (including the one attached with the TCPO New Delhi), be provided with medium capacity digital image processing facility in order to provide impetus to the growth of digital processing in the area of town and country planning and also to relieve some pressure on the Regional Remote Sensing Service Centers.
- The whole system of acquisition of aerial photography and dissemination of photo-products in the country be streamlined and resources augmented both at the central and state levels as required in order to meet the needs of aerial photography of urban and rural studies;
- The existing Revenue / Lane Records Departments as well as the Town and Country Planning Departments in the States be revamped by providing training in modern techniques, to some of the selected personnel, introduction of modern equipment and creation of facilities in these organisations; and
- One Remote Sensing Cell (RSC) suitably equipped be established in each Land Records / Cadastral Survey Department in each State / U.T.

4. URIS DIVISION IN TCPO

An independent division in TCPO viz. Urban and Regional Information Systems (URIS) Division was set up in 1989 and since then, a number of pilot studies have been carried out to analyse and test the present data systems including Land Information -System (LIS) both at town level as well as at regional level and also conducted training for town planning professionals in the use of modern data sources and technology. Simultaneously attempts have also been made to create data bases on population and land use (attribute) and administrative boundaries and location of towns (spatial). The highlights of some of the important projects undertaken in URIS with GIS database concept are given below.

Land Use Information System (LUIS):

The TCPO initiated two more systems, one being the Land Use Information System (LUIS) based on Master / Development Plans, and the other on Urban Statistics based on the Census of India. Land use information for about 706 towns was collected from various State Town Planning Departments as per detailed designed format. All the data received was computerised in D'Base-II plus. To use this database TCPO designed and developed a simple menu driven software for monitoring and retrieval of this data using D'Base-III plus. The package has two modules at primary level viz, Systems Module for a database management and the second module viz, User Module to enable selective search, query and process for printing information selected.

Monitoring Information System for IDSMT:

The centrally sponsored scheme of Integrated Development of Small and Medium Towns (IDSMT) was initiated in the 6th Five Year Plan (1979-80) and also continued in the subsequent Plans as well.

The main objective of the scheme was to slow down migration from rural areas and small towns to large cities by developing selected small and medium towns, which are capable of generating economic growth and employment. Under the Scheme central assistance was provided amounting to Rs. 40.00 lakh (soft loan) to each town on matching basis for the components namely residential area development (site and services), shopping complexes, development of industrial areas, widening and upgradation of roads, municipal abattoirs and low cost sanitation, etc. Besides, the state governments were supposed to take up other schemes like water supply, sanitation, etc., out of their own resources. For the monitoring of the IDSMT Scheme on customisation of software on development of monitoring information system was developed in TCPO. The main objective of development of this system in D'-Base - III was to monitor the Scheme to assist in release of the funds under the project to be used both by the Ministry of Urban Development as well as State Governments. The system envisaged to assist in generating town profile from data - on demography, social and economic infrastructure, and scheme profiling from detailed parameters of IDSMT viz., approved targets, progress both physical as well as financial. The system was designed to facilitate data entry, data validation, and computation of eligibility for central assistance and indicators of fund utilization.

Case Study of Bharatpur District:

TCPO, has undertaken the initiative for preparing a Model District Plan by using GIS in collaboration with Space Application Center Ahmedabad for Bharatpur District with the objectives to :

- Design and organisation of Spatial Information System (SIS) for Bharatpur on 1:50,000 scale and creation of a spatial and non-spatial data base for District Planning, and
- Demonstrate integrated analysis of spatial and non-spatial data on specific District Planning problems.

The attempt has also been made to (i) organise and develop a village level data base for preparation of district Plan; (ii) apply remotely sensed data sources for building multi-date land use data base, and (iii) demonstrate the application capabilities and efficacy of the data bases and GIS tools for analysis and planning. The scope of the study was confined to building a GIS data base involving integration and organisation of both attribute and graphic data bases from various sources, taking village as the Basic Spatial Unit (BSU) for the purpose of developing information system. The main thrust of the analysis was restricted to three sectors of planning,, viz., land use, agriculture and settlement pattern for training and development perspective for the district. Detailed methodology for analysis of land use change based on multi-date data, assessment of land capability classes, derivation of Agriculture Development Index (ADI), Village Development Index (VDI), functionality assessment of settlements and services, etc., was also undertaken

A major task has been to design and organise database from various sources in a standard format compatible to ARC/INFO which has been used as a core of the Spatial Database in the study. All the activities related to Spatial Data was organised at ARC level in modular basis, while the tabular data manipulation is done using INFO. Besides ARC/INFO provides the facility of a macro language for design and development of custom menus and Information System with its Arc Macro Language (AML) facility. Keeping in view the map requirements in District Planning, ten

basic themes for preparation of base maps were identified to form the graphic database of the study as given below:

- Administrative map: showing boundaries of district / *taluka* / village for the study area;
- Drainage map showing details of drainage up to third order;
- Transportation network map with details of railways, road / highway, etc.,
- Physical terrain map showing topographic features and contours (20 m);
- Land Use / cover map showing level - II details of land use / cover;
- Soil map showing various features at series level;
- Forest map showing types and actual forest cover;
- Ground water potential map; and
- Elevation points, and settlement location (cities / towns / villages).

A set of secondary maps have been derived from the primary maps such as slope map derived from the terrain map. The land use map was first derived from land use data on various categories at different levels secondly, using the GIS capabilities of ARC/INFO. With micro level data it was decided to choose a small basic spatial unit (BSU). As Bharatpur district had only 8 *tehsils* (1981 census) choice of *tehsil* as a basic spatial unit was not considered appropriate to justify the capabilities of GIS, hence Census village / settlement was decided as an optimal BSU.

Data at village / settlement level was obtained from three sources, i.e. (a) District Census Handbook, Census of India 1981, (b) NIC district center, and (c) State Government Departments. However, due to difficulties in integrating the state government department's data with the Census structure; mainly two sources viz. Census 1981 and NIC District Computer Terminal (DGT) of Bharatpur were used, as Census database design followed the structure given in the District Census Handbook and determined the locational / spatial referencing. While the DCT Bharatpur database followed a District sub-division-block-*gram panchayat*-village hierarchy, the standard reference of villages in a district is based on a district-*taluk*-village hierarchy. As the spatial data of the village boundaries was adopted from Census abstract, it was essential to have the DCT, Bharatpur data in district-*taluk*-village hierarchy. Thus, a rationalisation was applied to integration in the District-*taluk*-village hierarchy into the DCT, Bharatpur data.

The database contains 1451 records i.e. 1442 villages + 9 towns urban settlements) as per Census 1981, where as the NIC database contains 1397 records / villages without any data on urban settlements.

The study amply demonstrated the applied concepts of organising a systematic database of spatial and non-spatial data around a GIS core and also the analysis / modelling methods for addressing various planning issues in different areas at a district level. Though the study has been restricted to address a few aspects, it has laid the foundation for a GIS base information system approach for regional planning at district level. The experience gained from this study is useful for organising systematic GIS based Information Systems for other regional problems and also for other districts.

A data base for Bharatpur has been organised at 1:50,000 scale and includes spatial data from Remote sensing and other sources and non-spatial data from Census and the DCT, Bharatpur. As part of generating plan inputs, different aspects addressed are: (a) land use change and scenario, (b) land capability, (c) agriculture development assessment on a village-wise basis, (d) integrated assessment for agriculture development, (e) settlement hierarchy and planning of services, (f) village development assessment, and (g) intra-district disparities.

Town Level GIS Development for LBZ:

Subsequent to the completion of the pilot project on development of GIS data base for district planning a case study of Bharatpur at 1:50,000 scale, Ministry of Urban Development desired TCPO to take up similar exercise at town level for urban areas to assess the problems and prospects of building GIS data base at large scale of 1:10,000. Accordingly, development of Geographic Information System (GIS) for town level with case study for Lutyens Bungalow Zone (LBZ) Delhi was initiated. The pre-validated data provided by NIC was substantially edited before building an accurate graphic database and in-house manual digitization was carried out in TCPO.

The Ministry of Urban Affairs and Employment constituted a Committee in September, 1992 under the Chairmanship of Chief Planner, TCPO with representatives from CPWD, DDA, NDMC, L&DO, etc., with the objective to:

- Define the LBZ boundary with no scope for mis-interpretation;
- Assess implication of the proposals on government land; and
- Suggest development control norms.

The Committee submitted its report in February, 1993. The study area (LBZ boundary) of the digital map under reference covers area as suggested by three different agencies namely

- As per 1988 guidelines issued by the then Ministry of Works and Housing,
- As per DDA Resolution No. 106/92, and
- The boundary as per CP-TCPO's Committee.

However, the land use area calculations are confined to the area under the boundary recommended by CP, TCPO's Committee.

The Survey of India (Sol) topo-sheets from the series of Delhi Regional Plan Survey maps of 1981, at 1:10,000 scale was used for digitising as it was the largest scale map of Delhi available with accuracy authentication from Sol containing cartographic / geographic elements such as map coordinates, roads, buildings, major power lines / pipe lines, symbols and annotations pertaining to road names, area names, building names, building function, etc. Data sets have also been generated from sources other than Sol map. The LBZ Area Boundaries of various Committees were interpolated on the Sol base map from DDA and the maps from various Committee Reports. Land use information from MPD - 2001, was transferred from the draft Zonal Plan prepared by DDA. The data sets are also organised in layers, each layer containing one geographic element or theme. Various layers generated are Road, Building, Pipe Lines, Power Lines, Drains, Rail; adopting Boundary - 1, as proposed by the Committee; Boundary - 2 as proposed by DDA, and

Boundary - 3 as proposed in 1988 Guidelines. The land use data contains about 31 classes of land use at second level in a single layer. The land use classification as mentioned earlier is based on the Draft Zonal Plan of MPD-2001. The land use is broadly classified into 6 major classes viz. (i) residential, (ii) commercial, (iii) recreational, (iv) government, (v) public and semi-Public, and (vi) transportation. Water bodies were added to the list as a separate class. The 6 major classes of land use were further divided into 31 classes at level two (sub - classes under each of the 6 major land use class).

The datasets were created through manual digitisation using GIS software viz., ARC/INFO. The entire LBZ area is covered in one full and 2 part sheets of Sol map of 1:10,000 scale. The area figures have been calculated for various land uses both at level - 1 or at level - 2 classes. The graphic data sets serve the purpose of creating a base map and to some extent conditional retrieval of land use along with area measurements. The graphic data provides vast scope into conversion of a GIS data base for applications in Zonal level planning, monitoring and area calculations. Structure of the land use coverage has been created purely on the basis of the proposed land use in the Draft Zonal Plan for Zone - D of the MPD-2001 mainly to demonstrate the scope of a GIS database in urban planning. As any efficient information system should have a provision for constant updation of data the user agency could take up either the ground surveys or use aerial photographs to update the existing base map in terms of graphic elements as well as land use. Additional data on certain utilities such as water, sewer, electric lines, telephone lines, garbage pickup points, etc., could be added to this existing graphic data.

The digital map of LBZ area, New Delhi was one of the first attempts by TCPO in creation of a large scale digital data base at 1:10,000. The basic difference between the earlier experience of regional data base and the present town level data is in terms of demands or accuracies. It has been observed that manual digitization of maps at 10,000 scale is not very feasible due to errors introduced as human factor in locating the cursor of very small graphic elements such as buildings of about 1 mm sq (on ground 10 m x 10 m.), road curves, dividers and road edges of less than 2 mm. (20 m on ground). Digitization of maps in this scale would be more accurate if scanning and vectorisation with semi-automatic option could be used which permits zooming facilities of the source map.

Town Planning Information System Case Study of Anand:

After completion of the first study on Lutyens Bungalow Zone, the second and final part of the Town level study viz., GIS approach to Town Planning Information System: a Case Study of Anand was undertaken. The study was taken up at the instance of the Town Planning and Valuation Department, Government of Gujarat. The study attempts to create a GIS database for land use at the town level and multi purpose cadastre at the Town Planning Scheme (TPS) level with the assistance of Gujarat Town Planning and Valuation Department.

The major objective of the study was to take up a current town planning issues in operation with scope for replication and implementation of the routine functions in a computerised environment and demonstrate the efficacy of computer applications in urban planning, management and monitoring. The specific objectives of the study are:

- Creation of a land use database for Anand municipality at town level;
- Creation of a digital graphic database for Town Planning Scheme no. 6 at 1:2000;
- Evaluation of accuracy of digital map vis-a-vis conventional mapping;
- Querying on GIS database;
- Computation of area for valuation subsequent to reconstitution of properties; and
- Development of a information system for Town Planning Scheme (TPS).

Anand is a pioneering city in Gujarat with most of its area developed through Town Planning Schemes. This study attempts to work within the framework of the existing system in operation in the Town Planning and Valuation Department of Gujarat and the Anand Municipality. This was consciously done in order to induce automation in the day to day function without disturbing routine functions. Therefore, the data, and the database including the scales of the maps and the procedures used in the study are the same, as they have been devised and operational in the municipality. Two different levels of applications have been attempted to cover both town as well as the Town Planning Scheme (TPS).

The plot reconstitution technique has become a useful tool for preparation and implementation of TPS. Besides the state of Maharashtra, the plot reconstitution technique is now commonly used in Gujarat and Punjab, selectively in Kerala, Andhra Pradesh and Tamil Nadu. At present under the provisions of the Gujarat Town Planning and Urban Development Act, 1976, 117 Development Plans, 48 Revised Development Plans and 144 Town Planning Schemes are in force in the state.

The data sets are organised in layers with each layer containing one geographic element or theme. The land use contains about 7 classes and forms a single layer. The difference in land uses is represented by 7 different land use codes. All the layers except boundary and land use are maintained as Line or Arc data. While the boundary and land use data are stored as polygons, spatial data consists of Town Planning Scheme maps and derived maps resulting from spatial operation in GIS. The spatial data used in the project are TPS maps of 1:2000 scale of original plot and final plot at TP scheme level and 1:20,000 for land use map from the Development Plan,

Besides, there is also a derived map resulting from the overlay of final plot map over original plot map to give the area figures of reconstituted plots. This data serves as attribute data for the monitoring system developed in D'base-III plus. Final plot numbers have been chosen as the key ID for querying both spatially as well as attributes. Attribute data in this study mainly constitutes the information from 'F' form regarding the properties, their value and compensations. Additional data in terms of Building Regulations and Zoning Regulations at property level has been appended to the existing 'F' form structure.

Development of a computerised system for monitoring of TPS no - 6 of Anand Municipality, Gujarat was attempted as one of the main objectives of this study. This system was designed with the intention to gradually replace the existing manual system of monitoring the TPS with an automated system. It is an user friendly package developed in D'Base-III plus environment addressing most of the common queries of the property owners by retrieving the requisite information on the screen.

The operation of this system does not require any special training. As modular approach has been followed in developing this system. Future upgradation or changes, if any could be carried out without much difficulty. The existing manual system depends upon the various inputs which go into the filling of form "F". The same variables have been taken into account for building up the database for the automated system. The system provides for easier and speedier updation of records. It also provides for automatic changes in any related variable consequent to a change in the independent variable. For example, in the CALCULATION module the amount of compensation depends upon the value of the plot with structure or without structure. Information about a particular plot holder can easily be accessed through VIEW modules incorporated in the system. Any changes in the data like changes in the owner's name, plot value, plot sizes, etc., can be instantly carried out. It is necessary to run the CALCULATION module after recording changes in the data. The status of the scheme at any point of time can be known by generating the various 'Status Reports' from the 'REPORT' module. It may be noted that the status reports relate only to financial status of the scheme. They have nothing to do with the physical progress of the scheme. The 'REPORT' module also provides for issuing various notices to those plot holders who are defaulting in their payments to the municipality. It is hoped that the automated system, if implemented will be found useful both by the municipality as well as general public.

5. URBAN MAPPING SCHEME

The National Commission on Urbanisation (NCU) emphasised the need for development of URIS using Remote Sensing (RS) and Geographical Information System (GIS) and reiterated the importance of not only routine collection of information and analysis but also stressed on geo-referenced data bases for spatial planning. Similarly, the 11th Report of the Parliamentary Standing Committee on Rural and Urban Development regarding Urban Mapping Scheme has rightly observed and recommended that in view of inadequacy of up to date base maps for large number of urban areas a program needs to be launched to generate base maps for every city / town in the country.

Of the 4615 urban agglomerations, cities and towns in the country, only about 1000 cities and towns have Master Plan / Development Plan which indicates the enormity of the need for base maps for urban planning. Presently no single agency is responsible for production of large scale urban base maps, as a result, there is a tremendous scarcity of accurate and up to date base maps. In order to fill in this gap the Urban Mapping Scheme was launched as a pilot project during the 8th Five Year Plan to cover 50 towns in two phases of 25 towns each from different states. The broad objectives of the scheme are to:

- Obtain aerial photographs and photo mosaics for selected towns on the scale of 1:10000;
- Develop technical capability of the Town Planning Departments at the Center and the State; and
- Prepare large scale base maps of 1:2500 scale with necessary details for the selected priority towns and to generate digital graphic data in a revision cycle.

During the first phase, 25 towns in consultation with the state governments were selected and National Remote Sensing Agency (NRSA) was assigned the work of supplying aerial photo mosaics

Table 2: Towns Covered under Urban Mapping (Phase - I and II)

Phase - I Towns			
Sl. No.	State	Sl. No.	Towns Covered
1	Uttar Pradesh	1	Faizabad
		2	Agra
		3	Nainital
2	Gujarat	4	Porbandar
		5	Valsad
		6	Veraval
		7	Surendra Nagar
3	Maharashtra	8	Bharuch
		9	Ulhas Nagar & kalyan
		10	Akola
		11	Nagpur
		12	Ratangiri
4	Andhra Pradesh	13	Nanded
		14	Solapur
		15	Khammam
		16	Nandyal
5	Orissa	17	Bhimavaram
		18	Gudivada
		19	Puri
6	Tamil Nadu	20	Bhubaneswar
		21	Tindivanam
		22	Nagapattinam
		23	Karaiikkudi
		24	Tiruchendur
		25	Rajapalyam
Phase - II Towns			
Sl. No.	State	Sl. No	Towns Covered
1	Karnataka	1	Mangalore
		2	Mysore
2	West Bengal	3	Asansol
		4	Siliguri
3	Madhya Pradesh	5	Bhopal
		6	Indore
4	Rajasthan	7	Ajmer
		8	Bikaner
5	Haryana	9	Ambala
		10	Gurgaon
6	Punjab	11	Muktsar
		12	Moga
7	Meghalaya	13	Shillong
8	Sikkim	14	Ganaiok
9	Chandigarh	15	Chandigarh
10	Assam	16	Guvahati
11	Kerala	17	Kochi
		18	Thiruvananthapuram
12	Bihar	19	Gaya
		20	Chapra
13	Pondicherry	21	Pondicherry
14	Goa	22	Panaji
15	Himachal Pradesh	23	Hamirpur
		24	Nalagarh
16	Arunachal Pradesh	25	Itanagar-Naharlagun
17	Mizoram	26	Aizwal
18	Nagaland	27	Kohima
19	Tripura	28	Agartala

for these towns along with line maps after rectification, ground control, etc. Work on the first phase has been completed with aerial photographs and fair maps for all the 25 towns. For covering in the second phase another 28 towns have been identified and work of aerial photography in 13 towns has been assigned to NRSA and for remaining towns clearance from concerned agencies is being obtained (Table 2).

The project provides vast scope in improving the decision support system in terms of making available latest and accurate maps and photographs for planning, management and monitoring. This becomes particularly relevant in view of developments and investment in space technology which is generating large amount of high resolution data to be used for various applications. Thus, use of remotely sensed data for urban planning and management is a step in continuation and support of the policies framed for generation and use of spatial data. The maps generated under this project provide scope for a range of applications such as, (a) preparation of large scale urban base maps, (b) preparation of land use plans, (c) preparation of Master/ Development Plans, (d) monitoring unauthorised urban development, and (e) planning utilities such as electricity, water supply, waste disposal, communication, etc. Besides, these maps also provide scope for traffic and transportation planning and management of law and order. These maps in association with cadastral maps and information, in future form a base for valuation and tax collection of municipal properties.

However, the coverage of the Urban Mapping Scheme is only 53 towns / cities while there are for 4615 urban settlements in the country, thus, coverage of the scheme needs to be extended substantially.

6. SUB-COMMITTEE ON TRAINING AND HUMAN RESOURCE DEVELOPMENT

A Standing Committee on Urban Management (SC-U) is one of the nine Standing Committees constituted by NNRMS as mentioned in para 3 above, which provides guide lines on major issues related to urban applications, identification of new areas for research and advise on taking up of specific national programs. The basic mandate of the SC-U is to:

- Examine present role of Remote Sensing (RS) in the management of natural resources;
- Evaluate the information requirements for the resource management and assess how much of it can be catered to by present and future RS systems;
- Identify improved methods of resource management by adopting newer techniques of data analysis, integration and modelling and also address the integration of information from RS and information from other sources;
- Design the framework of an information system for resource management / decision-making at different levels in the concerned resource sector including the aspects of information needs, input parameters, modelling and transformations output formats and parameters. Here, the role of GIS and integrated modelling needs to be addressed; and
- Generate national programs / projects for achieving the above in the framework of the NNRMS.

In the first meeting of the NNRMS Standing Committee on Urban Management (SC-U) held on January 22, 1998 under the Chairmanship of Secretary, Urban Development, three Sub-Committees were constituted as given below:

- Sub-Committee for studying the applicability of Satellite Imageries and to devise a standard format for formulating pilot projects in priority areas of cities;
- Sub-Committee for interaction with state agencies to understand their requirements and make them aware of the capability of remote sensing; and
- Sub-Committee on Training and Human Resource Development.

The Sub-Committee on Training and Human Resource Development was constituted under the chairmanship of the Chief Planner, Town and Country Planning Organisation, New Delhi. In accordance with the major objective of this Sub-Committee, i.e., to develop training options to cater to the requirement of skilled manpower in RS / GIS technology with focus on large scale mapping and GIS applications in urban planning and management, the Report of the Sub-Committee suggested:

- The training program may cater to 3 levels of target groups;
 - Working level (Junior/Assistant Town Planners, Assistant Directors, Planning Officers, etc.,
 - Supervisory level (Senior / Associate Town Planners, Dy. Directors, Jt. Directors etc.; and
 - Decision makers (Chief Town / Regional Planners, Directors, Additional Directors, Vice Chairmen, Development Authorities, etc.; and

- The duration of training may be in the range of 5 days - 8 weeks depending on the three levels of target group in order to facilitate deputation of personnel without any difficulty;
- A common program with standardised contents be developed to be followed up in all the potential training agencies / institutions; and
- The course may focus specifically on handling large scale maps such as 1:2500 maps in case of Urban Mapping with application areas in urban planning, development and management.

A detailed plan of action has been worked out with proposal for about 1400 professionals to be trained in the application of RS / GIS and GPS in urban and regional planning over a period of five years. It needs to be mentioned that due to limited infrastructure and facilities currently available, for running 8 weeks course only about 500 of the estimated 1400 participants (35%) in the working level will be trained in next 5 years. The other two target groups may be trained without much difficulty due to the shorter duration of the course.

In view of the specific objectives of designing training program for managing spatial data from RS sources with potential to be used in GIS environment for in-service personnel engaged in urban planning management following three categories of training were suggested:

- NNRMS SC-U 3, Working Level Junior / Assistant/Associate Town Planners 8 Weeks long term;
- NNRMS SC-U 2 Supervisory Level Senior Planners / Dy. Directors / Joint Directors 2 Weeks medium term; and
- NNRMS SC-U 1 Decision Makers Directors / Chief Town Planners / Administrators 5 Days short term.

The above training programs are designed to cater to various levels of skill requirement and decision making with short duration orientation courses for Senior officers or Heads of the Organisation to longer duration courses for Middle / Junior professionals. However, it needs to be mentioned that a common curriculum for the duration mentioned above following the contents proposed and the calendar needs to be detailed out in consultation with the agencies identified for the training program.

In the Peer Review meeting (February 2000) of the Standing Committee on Urban Management held under the Chairmanship of Secretary (UD) it was decided that development of Urban Information System (UIS) on national mission mode should be taken up on priority. Accordingly, the Ministry of Urban Development and Poverty alleviation (MUD&PA), Government of India constituted another sub-committee under the Chairmanship of Chief Planner, TCPO. The Report of this sub-committee broadly proposes guidelines for development of urban information base, technologies to be adopted, coverage of priority towns in phased manner and financial implication.

7. TRAINING PROGRAMS

To promote the concept of URIS, a need for training was felt to upgrade the skill of the planners in the country to adopt new methods and technology. TCPO conducts training program every year in various specialised fields including Geographic Information System (GIS) and Data Base Management (DBMS), etc. So far, two training programs on DBMS and four training programs on GIS have been conducted. The first two training programs on

database management were conducted in 1987 and 1988 in collaboration with UNDP / World Bank using dBase - III as the core software package. Later in view of the Geographic Information System (GIS) as an emerging area in information technology useful in generation of information base, collating and analysis in the spatial context, permitting integration of geographic and related attribute and collateral data TCPO moved over to training in Remote Sensing and GIS. Keeping this in view, the first training program on GIS was organised in May 1990 in collaboration with the Institute of Aero Space Survey and Earth Sciences (ITC), the Netherlands and the Indian Institute of Remote Sensing (MRS), Dehradun wherein the training centered around a raster based GIS software package viz. USEMAP, developed by ITC. With the experience gained in this, TCPO successfully conducted second training program on GIS in February 1992 with the core faculty from TCPO and guest faculty members from reputed institutions using ARC / INFO.

Similar programs were also repeated in September 1992 and December 1994 and December 1996 and 1999. Currently following the recommendations of the Sub - Committee on Training and HRD of the Standing Committee on Urban Management of NNRMS, the Town and Country Planning Organisation (TCPO) has organised a four weeks training program on "GIS Application in Urban and Regional Planning" in January 2000, in collaboration with HUSAG, IIRS, Dehradun and as proposed in the report of the Sub-Committee the program is designed to use a networking concept in terms of use of facilities and specialisations available in different agencies and accordingly, the 4 weeks training program is split into two weeks each to be conducted at IIRS, Dehradun for the portions covering Remote Sensing, Image Processing, etc, and at TCPO for portions covering GIS and Urban Applications and Project Work.

8. ROLE OF TCPO IN URIS

TCPO has, thus pioneered the concept of URIS and its implementation and has gathered vast experience in the issues with respect to its development and application in the field of urban and regional planning. Starting from the earliest experience in developing Urban information databases from Census of India,

Integrated Development of Small and Medium Towns (IDSMT), Land use Information System customization of data management systems in non-graphic environment, today TCPO has built enough capacity to develop and handle Remote Sensing and GIS database projects and also to impart training in these areas.

In general it may be observed that in generation and promotion of URIS, small functional and decentralized information systems are more successful as these systems have clearly defined objectives directly relevant to the users, with potential to implement in less time when compared with complex and comprehensive systems. Such systems help in monitoring specific development programs and in evaluating them. These decentralized, purpose specific systems can be compiled and aggregated to form part of large comprehensive information systems.

To build large Comprehensive Urban Information Systems there is a priority need to standardize both data and database design methods as well as data management software. To this end few selected agencies need to be identified to bridge the data gap regularly who could coordinate

at the timing of surveys. For instance, if land use surveys are also carried out along with Census operations it would facilitate analysing of related socio-economic variables vis-a-vis land.

There is need for institutional arrangement for data collection. The responsibility of data-collection could be entrusted to the local body, which can generate it through its administrative routines. In the absence of a local body in a city or town the responsibility may be entrusted to municipal administration.

TCPO ventured into the use of modern graphic data sources based on Remote Sensing and GIS, nine years back and has steadily striving for the generation of GIS databases including large scale databases. It is realised that both training of manpower in these fields as well as funding support under a national level blueprint are vital to popularisation and use of technology in routine planning process. There are several areas which still need to be studied to develop and adapt for operationalization of the technology. Some of the areas are cadastral mapping, customisation of software for town planning and municipal functions, standardisation of databases in relation to their functions, etc. However, since all town planning at sub-zonal level (Action Plans, Town Planning Schemes, etc.) involves cadastral level information, there is a priority need for digital cadastral databases.

The Science Advisory Committee recommended a centrally sponsored scheme by which the cities of the country should be encouraged to design and implement urban land mapping and computerised data base for all urban land. It suggests that not only there is a need for base maps; they also have to contain potential for cadastral information on properties (parcels) normally mapped at very large scales of 1:4000 to 1:8000 supported by information in village registers. In urban areas, the land records are maintained and managed by more than one agency depending on conversion to urban use and implementation of Development Plan and transfer of land to local bodies for maintenance. Thus, there is an intense need to develop a integrated land information system under one agency to coordinate policies on property taxation, investment prioritisation and monitoring of development, etc.

Several states have attempted development of digital cadastral data base on pilot basis. However, these experiments have faced challenges in resolving the existing data in print media to digital format. The problem has been due to the methods of survey, using change without regard to geodesy or national datum.

Use of latest high resolution remote sensed data from satellite platform IRS 1C/1D provide for mapping accuracies up to a maximum 1:12,500 scale whereas the cadastral scales as mentioned above range between 1:4000 to 1:8000. Future satellites (1999) have been planned to generate higher resolution data with about 2.5 metre facilitating mapping at 1:5000 scale. As on date aerial photographs form the only source of data for mapping urban land which is expensive and loaded with restrictive regulations concerning security, however in near future high resolution satellite data would compete with aerial photographs as a data source for urban mapping in terms of better cost, time and quality.

In view of the developments in the communication technologies such as optic fibre/broadband with capabilities for high volume data transmission, statistical, map and remote sensing data

exchange will form the backbone of policy / decision making in urban and regional planning. Thus, provision for development of web technologies will have to be provided for in Planning and design of information systems infrastructure.

9.0 URBAN OBSERVATORIES

The United Nations Center for Human Settlements (UNCHS), the UN Agencies for cities in close partnership with UNDP, the World Bank and other organisations conceived and developed an Urban Indicators Program (UIP), which was promoted for use among member countries during the Habitat-II Conference in 1996 at Istanbul. The access on the basis of partnerships approach involving decision making people at the government level and stakeholders which have interest in urban development issues have been adopted. It has also been related to setup Local Urban Observatories (LUOs) and National Urban Observatories (NUOs) within existing local and national institutions in order to develop and refine necessary tools to monitor progress by using a partnership approach. These LUOs and NUOs would be guided at apex level i.e. Regional Urban Observatories (RUOs) at Regional Level and Global Urban Observatory (GUO) at Global Level.

The setting up of Urban Observatories is a system by which a world wide information and capacity building network established by UNCHS (Habitat) to help, implement both the Habitat Agenda and Agenda - 21 at a national and local levels. Such an observatory help governments, local authorities and civil society to improve, collect, manage, analyse and use of information in formulating more effective urban policy and understand the working of cities as social and economic system for effective national and local action planning, with the objectives to:

- Stimulate broad-based consultative processes to help identify and integrate urban information needs;
- Help, build capacity for the collection, management and policy applications of urban information, focusing on indicators and best practices;
- Provide information and analysis to all stakeholders for more effective participation in urban decision-making; and
- Share information, knowledge and expertise using modern information technology and infrastructure.

The major role and functions envisaged at the Local Urban Observatories (LUOs), National Urban Observatories (NUOs) and Regional Urban Observatories (RUOs) are:

Local Urban Observatories

The role of Local Urban Observatories are to:

- Provide a platform for dialogue among policy makers, communities and the civil society through participatory approach for decision making;
- Advocate participatory process for decision making;

- Generate information on local themes and problems; and
- Encourage policy responses to locally felt needs and priorities;

The function of Local Urban Observatories are to:

- Work with partner groups to develop and apply appropriate indicators, indices and evaluation mechanisms for the urban area and its communities;
- Maintain Management Information Systems and undertake evaluations and impact analysis at the request of local authorities and partner groups;
- Build capacity for the generation, management, analysis and dissemination of urban information, including, empirical information, on a regular and consistent basis and to apply the information in decision making.
- Identify conditions, trends and priority issues through research and consultative processes involving local officials and organisations of civil society;
- Propose options for harmonizing sectoral policies and strategies in the context of the local plan of action;
- Cooperate with other Local Urban Observatories in sharing resources, exchanging substantive and methodological knowledge and disseminating information at the national, regional and global levels;
- Assist other Local Urban Observatories in developing their capacity to collect and use urban indicators;
- Analyse and share lessons learned from ongoing experiences and good practices with other Local Urban Observatories;
- Maintain a local Internet homepage and a newsletter for providing civic society with information on the city and for reporting on activities of the LUO and its partner groups; and
- Produce a biennial state of the City Report, including comparative analysis of indicators and presentation of best practices

National Urban Observatories

The role of National Urban Observatories are to:

- Monitor national trends and conditions;
- Provide information to the national level policy makers; and
- Formulate a national urban policy framework, if it does not exist already.

The functions of National Urban Observatories are to:

- Conduct broad-based consultations to review or to formulate the National Plan of Action (NPA) in light of the commitments and recommendations of the Habitat Agenda and priorities expressed through consultative processes;
- Propose a national urban policy framework to guide the implementation of the NPA and the formulation and implementation of Local Plans of Action (LPAs);

- Propose options for harmonizing sectoral objectives, based on urban indicators and best practices analysis;
- Provide a coordinating framework for the collection, analysis and application of urban indicators at the national and local levels;
- Organise, in conjunction with other partners, national best practice competitions and exhibitions;
- Organize training programs, for policy makers and technicians at the national and local levels, on the generation and use of empirical information;
- Maintain an indicators program to monitor implementation of the NPA;
- Coordinate the assessment and provision of capacity-building resources for implementing, monitoring and evaluating NPA and of LPAs;
- Organize, with relevant partners at all levels, networks for training and peer-to-peer learning among agencies, local authorities and civic organizations engaged in improving the living environment;
- Maintain an internet homepage for providing civic society with information on the national urban policy and for reporting on activities of the NUO and its partner groups; and
- Produce a biennial state of the Nation's Cities Report including comparative analysis of indicators and presentation of best practices.

Regional Urban Observatories:

The Habitat Secretariat had envisaged Regional Urban Observatories (RUOs) so as to have an explicit international dimension. The functions of RUO should therefore, be anchored with an entity, association or network with clear international outlook and a fairly comprehensive coverage of the region through existing networks.

The Role of Regional Urban Observatories are to:

- Holding regional consultation on common issues; and
- Sponsoring regional workshops, etc.

The Functions of Regional Urban Observatories are to:

- Hold regional consultations on common issues, including trans-boundary issues and issues derived from shared ecological, administrative or cultural systems;
- Sponsor regional workshops on the development and adaptation of region specific tools, guidelines, methods and indicators;
- Organize, in conjunction with other partners, national best practice competitions and exhibitions;
- Contribute to development and dissemination of training materials in languages of the region;
- Coordinate training for trainers in national and local capacity-building institutions;
- Assist NUOs and partners in the region with the collection, compilation and analysis of indicators data and best practices;

- Facilitate the sharing and exchange of lessons learned among countries and cities of the region;
- Coordinate regional urban research programs; and
- Identify regional correspondents and focal points for technical cooperation and research.

Global Urban Observatory:

Habitat made further emphasis that GUOs should encourage the establishment of NUOs to monitor national trends and conditions and to inform national level policies and decision making. The GUO would help in:

- Synthesising information from all urban observatories;
- Providing a worldwide assessment of urban conditions and trends;
- Publishing the "State of the Worlds Cities" report series;
- Developing guidelines, methods, data basis and software in support of urban observatory; and
- Facilitate capacity building, training and technical assistance resources for local manpower.

To carry out such an explicit task of NUO and seeing the involvement of TCPO in Urban and Regional Information System, Ministry of Urban Development and Poverty Alleviation, Government of India decided to locate the National Urban Observatory (NUO) in TCPO. The follow up action is being taken up accordingly by TCPO.

10. CONCLUSIONS

For establishing URIS on firmer footing it is essential to have three-tier structure at National (TCPO), State (State Town Planning Departments) and Local (Metro and cities / towns) levels ensuring adequate hardware / software / manpower for managing the system. This assumes importance due to decentralisation of planning functions consequent to the 74th Constitution Amendment Act. In this endeavour the various actors namely NRSA, Survey of India, State Remote Sensing Agencies, TCPO at the Central level and Town Planning Departments at the state level besides Development Authorities, local bodies are required to be involved. This concept also coincides with the proposal on setting up of Global Urban Observatory (GUO) and Regional Urban Observatory (RUO) wherein LUO and NUO would support to GUO /RUO. Thus TCPO has come a long way from establishment URIS to UO.

9 | STRENGTHENING URBAN INFRASTRUCTURE UNDER IDSMT

Abstract

In the absence of any concerted efforts for the development of small and medium towns, the available infrastructure could not provide the required support for holding the population of the towns and serve the hinterland well. With the result, people from rural areas, by-passed smaller settlements and migrated to big cities, putting extra pressure on infrastructure of large and metropolitan towns. Therefore, it was felt that apart from developing larger and metropolitan cities, attention needs to be provided to small and medium towns by making increased investments for strengthening infrastructure and other essential facilities so that these towns could grow as alternate centers of employment, sub-serve the rural hinterland and ultimately help in checking the ever increasing influx of the rural / urban population migrating to big and metropolitan cities. Accordingly, a scheme of the Integrated Development of Small and Medium Towns (IDSMT) was launched in the Sixth Five Year Plan. This paper also discusses the provision of infrastructure under the IDSMT Scheme.

1. INTRODUCTION

In the initial period of the planning era, particularly till the end of the Fifth Five Year Plan, the major emphasis in urban development was confined to the development of large and metropolitan cities while small and medium towns either stagnated or registered marginal growth. In the absence of any concerted efforts for the development of small and medium towns, the available infrastructure could not provide the required support for holding the population of the town and serve the hinterland well. With the result, people from rural areas, by-passed smaller settlements and migrated to big cities, putting extra pressure on infrastructure of large towns. The main reason for such a scenario has been the neglected development of small and medium towns. These settlements did not have the potential to provide economic opportunity and a proper living environment to the people in the absence of adequate infrastructure. Therefore, it was felt that apart from developing larger cities, attention should also be given to small and medium towns by making increased investments for strengthening of infrastructure and other essential facilities so that these towns could grow as alternate centers of employment, sub-serve the rural hinterland and ultimately help check the ever increasing influx of the rural-urban population migrating to a handful of big and metropolitan cities.

Accordingly a scheme of the Integrated Development of Small and Medium Towns (IDSMT) was launched in the Sixth Five Year Plan earmarking an amount of Rs.96.00 crore as central assistance (soft loan) on a matching basis for towns with a population of one lakh and below on the basis of 1971 Census. Since it was not possible to cover all the 3029 towns conforming to the population criteria, a target of covering about 231 towns was fixed during the Sixth Five Year Plan.

2. IDSMT COMPONENTS

The Guidelines framed for the IDSMT scheme during Sixth Five Year Plan have categorised the components of development into two parts i.e. Part 3A components to be assisted by the Central Government on a matching basis which include:

- Land acquisition and development (the residential scheme / sites and services need to provide 50% and 20% plots for EWS and LIG) respectively;
- Traffic and transportation (including construction of new roads and improvement / upgradation of existing roads);
- Development of markets / *mandies*, provision of industrial estates, provision of other services and processing facilities; and
- Construction of municipal abattoir.

The 3B component, for which funds are to be found from the resources of the state governments / implementing agencies and should also be part of the Integrated scheme, include:

- Slum improvement / upgradation, urban renewal and small scale employment generation activity;
- Low cost scheme of water supply, sewerage, drainage and sanitation;
- Preventive medical facilities / health care; and
- Parks and playgrounds, etc.

3. FINANCING UNDER IDSMT

The cost of the projects of each town under part 3A components was expected to be about Rs. 100.00 lakh. However, central assistance (soft loan) given on 50 per cent matching basis was limited to Rs. 40.00 lakh or 50 per cent of the total approved cost of part 3A components, whichever was less. The remaining amount had to be provided by the state governments / Implementing agencies out of their own resources. During 1983-84, the low cost sanitation scheme to improve the environment of small and medium towns and to eliminate the manual carrying of human waste was brought under the purview of part 3A components. For this purpose central assistance of Rs. 15.00 lakh was made available to each IDSMT town, over and above Rs.40.00 lakh, subject to the provision that the state governments / union territories make specific provision of Rs. 12.00 lakh per town over and above Rs.40.00 lakh of matching state contribution for those towns where the approved program was Rs.80.00 lakh and above.

4. PROGRESS UNDER IDSMT

During Sixth Five Year Plan, Rs.63.57 crore were released to 235 towns as central assistance which include Rs. 6.73 crore released for the low cost sanitation. The actual expenditure incurred on the approved schemes amounted to Rs.93.81 crore.

Out of the approved program of Rs.224.02 crore for 235 towns covered during Sixth Five Year Plan, the sites and services accounted for 32.6 %, market and *mandies* 30.6 %, construction of new roads and upgradation of existing roads 15.30 %, bus and taxi terminals 9.20 %, low cost sanitation 7.85 %, industrial area development 30.40 % and construction of municipal abattoir 1.05 %. Against this, expenditure incurred by the end of Sixth Five Year Plan was reported as Rs.93.81 crore comprising of sites and services 31.35 %, market and *mandies* 35.42 %, construction of new roads and upgradation of existing roads 18.62 %, bus and taxi terminals 10.76 %, industrial

area development 2.63 % and municipal abattoirs 1.22 %. The expenditure incurred was almost in the same proportion as indicated in the approved program. .

In the Sixth Five Year Plan period under the residential area development program the proposal was to develop 2854 hectares of land out of which area measuring 1649 hectares were fully developed while work in the remaining area was under progress. Under the scheme the proposal was to carve out 1,13,078 residential plots including 63,826 plots (56 %) for economically weaker sections and 27,363 plots (24 %) for low income group. Demarcation of 32,462 plots (29 %) had already been completed and work for another 29 % plots was in progress. Out of 32,462 developed plots, 19,759 plots (61 %) were developed for EWS and 6,992 plots (21 %) for LiG categories. Ganganagar in Rajasthan had shown exemplary achievement in development of residential plots as also indicated in IIPA report published in July, 1934. Under sites and services, significant coverage was achieved under EWS and LiG category where out of 40 % rehabilitation of families including slum areas nearly 15 % target was achieved till March 1984. Immediately after the provision of infrastructure the allottees started construction of the houses on their plots. The project impact has been extensive. The project evaluation indicates that nearly 4 % of the households of the town have directly been benefited from this project.

Under the component meant for development of commercial areas the target was to develop 283.7 hectares of land for construction of 25,604 shops, 7,996 stalls and 583 godowns. Of the total target, 227.21 hectares (80 %) of land has been fully developed in various towns across the country consisting of 10,287 shops (40 %) 5,880 stalls (73.5 %) and 271 godowns (46.4 %) and the remaining work was reported to be in various stages of construction / completion. In most of the towns where the construction of shops is completed, the shops have been auctioned and the earnings are so attractive that in some of the towns the premium on each shops varies from Rs.50,000 to Rs.2,00,000 besides the monthly rent charged which is sufficient for maintenance of the assets created under this scheme. The notable examples of achievements under this scheme are Anand (Gujarat), Ganganagar (Rajasthan), Ooty (Tamil Nadu), Trichur Guruvayoor (Kerala), Rajnandgaon (MP.), and Amalner and Baramati (Maharashtra).

In respect of component related to industrial area, the proposal was to develop 309.5 hectares of land for carving out 2,021 industrial plots out of which 138.6 hectares (44.7 per cent) have been fully developed and demarcation of 649 plots and sheds have been completed and the remaining work was reported to be in progress.

With the intention to open up new areas for development, construction of 361.2 km of roads was taken up out of which 179.4 km (49.4 per cent) of roads were fully constructed / developed. For easy and smooth circulation of traffic, the existing road length of 188.47 km was proposed for improvement and upgradation, out of which 169.41 km (43.6 percent) of road length has been upgraded and remaining work on construction of new road as well as upgradation work reported to be in progress. Under the component of traffic and transportation, in addition to construction / development of road, the land measuring 126.98 hectares was taken up, for construction of 102 bus terminals / taxi stands. Out of which 79.41 hectares (62.5 %) of land has been fully developed and 62 (61.00 %) bus terminals / taxi stands have been constructed and remaining 47.57 hectares

of land was under development and construction. 40 bus terminals/taxi stands was reported to be at the advanced stage of construction.

Seeing the unhygienic conditions of the existing municipal abattoirs, the construction of municipal abattoirs was subsequently brought under the purview of part 3A component of guidelines and accordingly 48 abattoirs were taken up for construction (out of which 23 are in Uttar Pradesh) while 16 abattoirs have been constructed and work on remaining 32 abattoirs was in advance stage of construction.

To provide the accommodation for pilgrims, specially in temple towns, the construction of eight dormitory type accommodation was considered as special case under IDSMT out of which three have been completed and work on remaining five is in progress. Similarly, construction of 94,181 new units of pour flush water seal latrines, conversion of 1,03,544 units and construction of 5,018 public latrines at the cost of Rs. 17.97 crore were taken up under low cost sanitation.

The specific achievement of the scheme as pointed out by the IIPA, New Delhi in its report published in July, 1984 which indicates that apart from economic impact of individual project one of the major gains of the town has been an improvement in the physical infrastructure / environment and the socio-economic status of the town including services and amenities which have been upgraded'.

IDSMT continued during Seventh Five Year Plan, Annual Plans, 1990-91 and 1991-92 and during Eighth Five Year Plan as well, with timely modifications in the guidelines on the basis of mid-term appraisal taken up by the TCPO. The revised guidelines under operation since 1995 laid down following objectives for IDSMT scheme.

- To improve infrastructure facilities and help in the creation of durable public assets in small and medium towns;
- To decentralise economic growth and employment opportunities and promote dispersed urbanisation;
- To increase the availability of serviced sites for housing, commercial and industrial uses; and
- To promote resource-generating schemes for the urban local bodies to improve their overall financial position.

5. REVISED IDSMT GUIDELINES

The revised guidelines of IDSMT, scheme has been made applicable to towns / cities with population up to 5 lakh subject to the stipulation that about 1/3rd of the total amount available each year for the scheme as a whole will be allocated to towns with less than 50,000 population. Towns for the purpose of central assistance (grant) under IDSMT have been categorised as under:

Population Category

Less than 20,000 - A

20,000-50,000 - B

50,000-100,000 - C

100,000- 300,000 - D

300,000 - 500,000 - E

However, in the selection of towns having potential for development as regional growth centers under IDSMT, preference will be given to headquarters of districts, followed by mandi towns and industrial growth centers, tourist places, pilgrim centers, youth center, etc. The state governments need to identify towns in accordance with State Urban Development Strategies. Indicative parameters for the identification of towns have also been given in the guidelines.

The components eligible for central assistance (Grant) under IDSMT have also been enhanced in the revised guidelines which *inter-alia* include works as per city / town Development Plan / Master Plan which may have city / townwise significance. An illustrative list is given below:

- Strengthening of Master Plan roads including ring, arterial, bypass / link roads and small bridges;
- Sites and services;
- Development of bus / truck terminals;
- Construction / upgradation of Master Plan drains including storm water channels;
- Solid waste management;
- Development of market complexes / shopping centers;
- Provision of tourist facilities;
- Development of city / town parks;
- Street lighting for Master Plan roads;
- Slaughter houses;
- Major public amenities like gardens, playground, marriage halls, pay-and-use toilets, etc.,
- Cycle / rickshaw stands;
- Traffic improvement and management schemes;
- Construction of retaining walls and slope stability measures in hill station towns; and
- Social amenities, especially for the poorer sections.

It may also be mentioned that as per guidelines, the schemes for water supply in the IDSMT towns are required to be undertaken / supported under the HUDCO / LIC / Externally-aided infrastructure lending programs and the Centrally Sponsored Accelerated Urban Water Supply Program (AUWSP) applicable to towns having less than 20,000 population. It is expected that implementing agencies will adopt a basket-type approach so that the expenses incurred on non-remunerative projects and for the weaker sections are made up through adequate returns from remunerative components such as markets, shopping centers, bus and truck terminals, etc. The indicative ratio between commercial projects, cost recovery or user-charge-based schemes and non-remunerative projects is 40:30:30 respectively.

The central assistance which was given as loan earlier has been fully converted to grant-in-aid to be given on the basis of population of a town as per their category along with the share of state government and HUDCO is given in Table - 1:

Table 1: Central Assistance, State Share, and HUDCO Assistance under Revised IDSMT Guidelines

Category of Town (Population)	Project Cost	Central Assistance (Grant)	State Share (Grant) Maximum	HUDCO/Financial Institution Loan/Other Sources
A(<20000)	100	48	32	20 (20%)
B (20000-50000)	200	90	60	50 (25%)
C (50000-100000)	350	150	100	100 (29%)
D (1-3 Lakhs)	550	210	140	200 (36%)
E (3 - 5 Lakhs)	750	270	180	300 (40%)

The project cost is based on a "Minimum Project Cost" concept, higher project size being conditional upon the availability of higher loan / other resources including municipal share. The objective is to see that the available funds are not spread out too thinly and the desired objectives of "integrated" development of regional centers of economic growth and employment with the required infrastructure are achieved.

In accordance with the State Urban Development Strategy and Town / City Master Plans, the Town / City Development (Investment) Plans are required to be prepared by the municipalities in the spirit th of the Constitution 74 Amendment Act. Accordingly in order to enable the preparation of such plans and project reports under the IDSMT scheme, advance grant-in-aid would be available to state government / municipalities on a 60 (central grant): 40((state grant) basis with total cost restricted to Rs.3 lakh in the case of towns with population up to 50,000; Rs.4 lakh for towns with population between 50,000 and 1 lakh; Rs.5 lakh for towns with population between 1 and 3 lakh, and Rs.6 lakh for towns with population between 3 and 5 lakh under the Central Urban infrastructure Support Scheme (CUISS). However, the release of a central grant-in-aid under CUISS will be dependent on availability of state share and also submission of proposals conforming to development plan / project preparation guidelines. These funds cannot be used for preparation of general purpose Master Plan and will be confined to the preparation of development or investment plans and IDSMT project reports.

In order to enable the local bodies to sustain the provision of infrastructure and other essential, facilities in the town it is suggested in the guidelines that the state governments should create a State Urban / Municipal Development Fund at the State level as a part of the reform exercises undertaken in the context of Constitution 74th Amendment Act, 1992, so as to provide a capital base for promoting infrastructure development on a continuous basis. The State Urban Development Fund could consist of a mix of selected / earmarked government grants and loans from the market, secured with the grant funds used as base / equity. Loans for IDSMT schemes may be made available through this source in case Institutional Finance is not forthcoming. Loans from the State Urban / Municipal Development Fund may be sanctioned to

municipalities at varying rates of interests depending upon the size of municipality and subject to stipulated municipal performance. Similar funds could be created at the level-of IDSMT and non-IDSMT municipalities from out of municipal resources. The objective behind the State Urban Development Fund /Municipal Development Fund is to earmark and systematically channelise funds for infrastructure development so as to give effect to state / town development plans. The funds will also inculcate financial discipline in municipalities and will supplement the efforts of state governments, under IDSMT scheme.

As far as physical and financial progress is concerned it may be mentioned that during Sixth Five Year Plan the central assistance amounting to Rs.63.57 crore was released to 235 towns, while in the Seventh Five Year Plan the scheme was continued with the provision of Rs.88.00 crore for covering additional 145 towns and for giving central assistance to the ongoing schemes of the towns covered earlier against which Rs.80.01 crore were released and 145 additional towns were also covered as targeted. During the year 1990-91 and 1991-92 the provision of Rs.21.00 crore and Rs.15.00 crore respectively was made available, against which central assistance amounting to Rs.19.10 crore and Rs. 13.44 crore was released and the additional towns numbering 77 and 60 were also covered respectively. The total approved cost of the 387 towns covered under IDSMT during Eighth Five Year Plan amounts to Rs. 890.65 crore against which central assistance amounting to Rs. 107.81 crore (excluding releases made under CUISS) was released by March 31, 1998. The total expenditure reported by State Governments amounts to Rs.91.17 crore for towns covered during Eighth Five Year Plan period. Thus, total central assistance released for 920 towns covered so far amounts to Rs.309.95 crore against which an expenditure of Rs.465.72 crore was reported by the close of the financial year 1997-98. The number of towns covered and central assistance released, planwise is given in Table 2.

Table 2: Planwise Progress of the Scheme

Plan Period	Towns	C.A. Released (Rs. in crore)
VI Plan	235	63.57
VII Plan	145	80.01
1990-91	77	19.10
1991-92	60	13.44
VIII Plan	387	107.81
1997-98	16	26.02
Total:	920	309.95

In addition, under the Central Urban Infrastructure Support Scheme (CUISS) Rs.1.99 crore were released for 108 towns during the year 1993-94, Rs.1.46 crore during 1994-95 for 78 towns, Rs.1.77 crore during 1995-96 for 88 towns, Rs.2.00 crore during 1996-97 for 95 towns and Rs.0.80 lakh during 1997-98. Thus, an amount of Rs.7.24 crore has been released to 369 towns under CUISS scheme by March 31, 1998.

For Eighth Five Year Plan the proposals approved under various components in different States and Union Territories are as under:

- **Sites and Services:** Total area to be developed amounts to 1248.84 ha for carving out 53,555 number of plots at the cost of Rs.124.84 crore.
- **Commercial Schemes (markets / mandies):** The total number of shops / stalls to be constructed amounts to 49,717 and office-space of total area measuring 520.55 ha at the cost of Rs. 403.45 crore.

- **Traffic and Transportation:** The proposal is to construct 307.64 km of new roads, 929.07 km of roads to be improved / upgraded besides construction of 120 bus / truck terminals, 23 rickshaw / car parking and improving 147 roundabouts and also to provide street lighting on the road length of 525.44 km, at the cost of Rs. 175.19 crore.
- **Slaughter Houses:** The proposal includes the construction of 49 slaughter houses at the cost of Rs.5.08 crore.
- **Construction of Drains:** The proposal is to construct 270.43 km of drains at the cost of Rs.22.74 crore.
- **Parks and Playgrounds:** The proposal is to develop 208.85 ha of area under parks and playgrounds at the cost of Rs.31.32 crore.
- **Community Centers / Kalyanmandap:** Total 99 number of community centers are to be constructed at the cost of Rs.30.53 crore.
- **Tourist Facilities:** An amount of Rs.23.70 crore has been approved for developing tourist infrastructure like dormitories, improvement of *mela* grounds, etc.
- **Slope Stability Measures:** The proposal includes construction of 4.26 km of retaining walls at the cost of Rs.1.31 crore.

Thus, it is quite evident that the IDSMT Scheme envisages a comprehensive program for selected towns / growth centers covering various facets of development. This needs to be based on a multi-sectoral / integrated development plan which will take into account the long term master / development plan strategy for the development of town in conformity with State Urban Development Strategy. As per IDSMT guidelines, state government need to prepare a project document indicating the type of urban infrastructure facilities that would be required in the town keeping in view its projected growth profile and functional activities. The project report must also contain the cost benefit analysis in respect of the various components / schemes / programs identified.

In the formulation and implementation of IDSMT programs, the state governments and local bodies need to involve the private sector, to the extent possible. The modalities of involvement of the private sector in implementation of the programs is also required to be spelt out in the project report.

Guidelines also envisages that organisational set-up of the local bodies, particularly their administrative and financial wings need to be adequately strengthened for implementation of IDSMT and other infrastructure development programs. The implementing agencies should have adequate powers delegated to them for sanctioning estimates and prompt implementation of the program by eliminating procedural delays.

The project document of IDSMT needs to highlight the existing conditions showing shortages in infrastructure services and facilities (backlog, current requirements and future needs) and the norms adopted to measure the deficiencies / inadequacies. Justification for the norms adopted also needs to be spelt out.

In addition, the guidelines make it binding on the state governments to prescribe the implementation arrangements indicating the agencies involved for each component of the program and their contribution, functions and capability for implementation of various components, etc. Besides, the agencies responsible for proper maintenance and operation of infrastructure assets and facilities created and the estimates of expenditure for the maintenance and operation of the assets need to be indicated along with the manner in which this expenditure is proposed to be met.

The local bodies / state governments are also required to provide for the institutional mechanism depicting the machinery for coordination, monitoring and evaluation at state / town level along with their functions and responsibilities.

To enable the local bodies to support infrastructure projects on a continuous basis, creation of Revolving Fund and its operative mechanism have also been suggested in the Revised Guidelines. Both the central and state share will flow as grants to the special Revolving Fund at the municipal level.

However, depending on the nature of projects, only 25 % of the amount given by the central and state governments could be accounted for as outright grant from the fund in the case of non-remunerative projects. The remaining 75 % amount would be treated as a corpus to be returned to the revolving fund for self-sustaining development. Cost recovery (direct and indirect) has to be inbuilt in the projects so that Revolving Fund will be able to support infrastructure projects on a continuous basis. Thus, while central and state share under the IDSMT schemes will be grants, as far as projects are concerned, resource flow will be accounted for, as loans and recoveries will have to be made against these, through suitable mechanisms such as rents, premiums / deposits collected, sale proceeds, user charges, betterment levies, impact fees, development charges, property tax hike, etc. These recoveries will have to be credited to the Revolving Fund.

6. CONCLUSIONS

All these provisions of Revised IDSMT Guidelines have gone a long way in creating infrastructure in small and medium towns and if the state governments / local bodies implement schemes in right earnest as conceived in the guidelines they would be in a position to sustain the creation, development, upgradation, maintenance of the infrastructure on continuing basis.

10 | EFFECTS OF INADEQUACIES OF INFRASTRUCTURE AND SERVICES ON URBAN PLANNING AND DEVELOPMENT

Abstract

Large urban centers, although considered to be generator of economic momentum, display a picture of squalor and unhygienic conditions. Traditionally in India, urban local bodies and parastatal agencies have generally been providing urban infrastructure as part of social and welfare services. Of late the concept and techniques for provision, delivery, operation and maintenance of urban infrastructure have changed considerably. It is increasingly being observed that government alone with limited budgetary resources would not be in a position to make up the galloping backlog in urban infrastructural services which are also required to be improved, augmented and upgraded to meet the emerging needs of urban areas. Inadequacy of infrastructure not only affect the quality of urban life and living environment but also creates the problems of law and order and disfunctioning of urban system. Urban areas are confronted with myriad problems, which are directly or indirectly related with deficiency or inefficiency of urban infrastructural services. Air, water and noise pollution, increasing incidence of fire, urban crime are some of the adverse effects of shortage and inadequacies of basic urban services, the paper argues.

1. INTRODUCTION

With rapid growth of urban population there has been continuous accretion in number and size of urban centers both demographically and spatially, However, provision of urban infrastructure has, not kept pace with increasing size of towns and cities. As a result burgeoning urban areas are putting strain on the already scant infrastructure leading to a point of collapse. Large urban centers, although considered to be generator of economic momentum, display a picture of squalor and unhygienic conditions. Traditionally in India, urban local bodies and parastatal agencies have generally been providing urban infrastructure as part of social and welfare services. Of late the concept and techniques for provision, delivery, operation and maintenance of urban infrastructure have changed considerably. It is increasingly being felt that government alone with limited budgetary resources would not be in a position to make up the galloping backlog in urban infrastructural services which are also required to be improved, augmented and upgraded to meet the emerging needs of urban areas.

With liberalisation of economic policies, globalisation of market economies, technological advancement, decentralisation of planning and development functions, revitalisation of municipal agencies, role of private sector participation in development process would be of vital importance. Increasing emphasis on commercialisation of urban infrastructure services would provide further impetus to the involvement of private sector in urban infrastructure development. Conceptually, incremental approach for development of urban infrastructural services, tapping of non-traditional sources for funding of urban infrastructure, evolving of self financing mechanism, rationalisation of norms and standards for provision of urban infrastructure, multiple use of facilities and services, sharing of operation and maintenance responsibilities by public, private and community organisations are some of the innovative techniques being followed world over to strengthen the efficacy of urban infrastructure development and management.

2. STATUS OF URBAN INFRASTRUCTURE:

Infrastructure may be defined as the physical framework of facilities, utilities and support system through which goods and services are provided to the public. Infrastructure facilities are generally grouped into two major categories (i) physical infrastructure comprising of water supply, drainage, sewerage, water disposal system, transportation, power; and (ii) social infrastructure which includes education, health, telecommunication, security, fire-fighting services, socio-cultural, recreation parks, banks and financial institutions, housing and other services. In the absence of detailed information on various components of physical and social infrastructure analysis of selected facilities and services reveal a grim picture in urban areas with regard to availability of basic infrastructure.

2.1 Physical Infrastructure

On an aggregate, 21 percent of urban population is living in slums and squatter settlements, where access to basic services is extremely poor. Although 83 % of urban population is reported to have access to safe drinking water, there are severe deficiencies in quantity and quality of water available to urban residents. About 49 % of urban population is covered with sanitation facilities while rest of the urban population is devoid of such services. Nearly 46 % of urban household have water borne toilets but only 28 % of the urban households are connected to the public sewerage system. As per the survey conducted by the Central Pollution Control Board (CPCB) even among metros only 5 metropolitan cities have proper wastewater collection system. Ten metropolitan cities have reported to have sewage treatment facilities of which four each have partial primary and partial secondary treatment facilities while the remaining two have secondary treatment facilities only. A survey of mode of disposal conducted by CPCB for 142 Class-I cities reveal an interesting picture, i.e. in about 30 % of the surveyed class -I cities mode of disposal is on agricultural land, another 30 % discharge into rivers either directly or through drains. About 22 % cities followed mode of disposal both on agricultural land and into rivers while rest discharged to other recipient system such as sea, lakes, ponds, etc. Similar situation for mode of disposal of waste water is prevalent in Class-II towns. The problem of wastewater management is acute even in mega cities, in none of the mega cities 100 % wastewater is treated. In Delhi out of 1634 mld waste water generated about 78 % is treated. While in Bangalore, Chennai and Calcutta the proportion of waste water treated is about 75, 63 and 50 percent respectively. In respect of Hyderabad and Mumbai the position is still worse. As such effective steps for collection, treatment and disposal of waste water from urban communities need to be taken to control environmental pollution and its degradation.

The position with regard to solid waste management is no better. It is estimated that about 80,000 metric tonnes of solid waste is generated every day in the urban centers of India. About 60 % of the solid waste generated is collected for proper disposal. The uncollected solid waste is generally disposed off, either to fill the open spaces in and around the locality or into the drains and along the roads thereby causing insanitary conditions and spread of diseases in the towns and cities. It is reported that on an average Rs. 130 - 260 per tonne are incurred on collection, transportation and disposal of solid waste in Indian cities. It does not include the cost of land used for this purpose. Based on the paying capacity of urban residents, the methods of solid waste disposal vary from no garbage collection at all to landfills, composting and recycling. It

has generally been noted that solid waste management such like waste water treatment and disposal receive low priority than other municipal services. In many of the urban areas solid waste is disposed off in low-lying areas without any specific plan for filling the site or any arrangement for leachate and gas control. Proper solid waste disposal is also hampered by the non-availability of suitable landfill sites, partly due to high land costs and partly due to rapid urban growth.

None of the metropolitan cities in the country have 100 % underground collection system. It varies between 33 % in Lucknow and 97 % in Kanpur with a weighted average of 74 %.

The coverage of underground sewerage system varies between 24 % in Nagpur and 85 % in Pune with a weighted average of 60 %. In the metropolitan cities 100 % of the sewage is not subject to treatment before disposal. Sewage treatment facility is available for a total flow of 960 mld which is 22 % of the flow rate generated. Although nearly 300 urban centers have sewerage system only 70 towns / cities have sewage treatment facilities. Of the total garbage generated in urban areas only 60 % is being collected by the municipal authorities while the rest remains un-collected. As far as sanitation facility is concerned about 35 % of urban residents have access to sewerage system, 15 % have septic tank system, 20 % have service latrines and the remaining 30 % use the open spaces. For garbage collection and disposal 1.16 scavengers are employed per thousand of urban population as against the norms of 3 - 5 scavengers / 1000 urban population.

Urban transport system is one of the most crucial sectors of infrastructure development. While urban centers are considered as engines of growth, urban transport is supposed to be the wheels of that engine. With high rate of growth, of urban centers there has also been an exponential rate of increase in urban travel demand. In view of the poor public transport system in many of the large cities and metropolitan centers private mode of various types have increased tremendously. With the result streams of heterogeneous traffic could be seen moving on inadequate and obsolete road network system. Congestion, delays, accidents, high level of energy consumption, increasing level of pollution are some of the manifestations of the poor urban transport system in India. The congestion on the roads is increasing continuously. In central areas of majority of the metropolitan cities in our country the speed is as low as 5 - 10 kmph. India has the dubious distinction of having one of the highest incidences of road accidents. In 1993 alone about 3 lakh road accidents were reported of which urban areas contributed a major share. The high level of pollution caused by traffic in cities is assuming alarming problems. Delhi has the dubious distinction of being 4th most polluted city in the world. Nearly 15-20 % of urban developed land is under transport use but situation of urban transport system is not satisfactory. Large areas of the urban centers, particularly the peripheral and fringe areas have very poor transport services.

Number of motorised vehicle is increasing at a fast rate in urban areas. Delhi alone has about 10 % of motor vehicle population of the country. Traffic volume in metropolitan cities is of high intensity and is increasing continuously. The urban road network is low in capacity, obsolete in pattern and poor in surface quality. The road density varies greatly from as low as 1.59 lane km / sq km in Vijayawada, to 12.44 lane km/sq km in Ahmedabad. The encroachment along road is high in most of the urban areas. The encroachment of carriage way in urban areas ranges between 10-39 %. Non-destined and through traffic on urban roads is also very high ranging from

11 - 35 %. Expenditure on urban transport is also low as compared to other municipal services. Role and potential of intermediate public transport system have not been fully exploited.

Among various infrastructural facilities power is most important for sustained growth and development. The installed generating capacity increased nearly sixty fold from 1362 MW in 1947 to 81164 MW in 1995 (including capacity in private sector of 3345 MW). The per capita consumption of electricity, which was less than 15 units in 1951, increased to 314 units by 1995. Despite these achievements the power sector has not been able to meet growing aspirations of the people in the country. There is severe shortage of power supply vis-a-vis demand both in urban and rural areas. The power demand in urban areas has increased manifold. With the result due to chronic power shortage there are frequent power cuts, low voltage, low frequency and high incidence of break down. Even in city like Delhi hundreds of dwelling units constructed in one of the largest residential townships / sub-city have remained unoccupied for want of power and water indicating that the city is in the grip of severe power shortage.

2.2 Social Infrastructure

Education and health are the major components of social infrastructure. The planning efforts aim at human settlement development for which development of human resources is the pre-requisite. Education and health are the catalytic factors for human resource development. As per 1991 census literacy rate accounts for 52 % and the broader goal is education for all by 2000 AD. Similarly, the national health policy reiterates to attain health for all. Primary health care has been accepted as the main instruments for achieving the goal. Accordingly, networks of institution at primary, secondary and tertiary level have been established. Community based health system is reflected in the planning of health infrastructure with about 30000 population as the basic unit for primary health care. However, in urban areas particularly in slum areas infrastructure for primary health care hardly exists. Disparity in actual provision and access to social infrastructure by LIG, EWS and urban poor sections is common problem in urban areas. At intra-city level geographical imbalances in provision of education and health facilities is another typical problem of inadequacy of social infrastructure. Certain socio-cultural facilities such as community hall, libraries, local community centers, recreation club and other socio-cultural centers are not well distributed particularly in large cities and metropolitan centers.

The situation in respect of other physical and social infrastructural services are far from satisfactory. For instance in 1991 housing stock in urban areas was 36.7 million with a backlog of 10.4 million. Fire safety measures for occupants of high rise buildings and other areas are also much below the satisfactory levels in urban areas. Deteriorating urban environment coupled with deprivation of basic services lead to social frustration and problem of urban security. There is, thus, a major shortfall in the provision of urban infrastructure services despite considerable efforts made so far.

3. EFFECT OF INADEQUACY OF INFRASTRUCTURE AND SERVICES

Inadequacy of infrastructure not only affect the quality of urban life and living environment but also create the problems of law and order and disfunctioning of urban system. Urban areas are confronted with myriad problems, which are directly or indirectly related with deficiency or inefficiency of urban infrastructural services. Air, water and noise pollution, increasing incidence

of fire, urban crime are some of the adverse impact of shortage and imbalances of basic urban services.

3.1 Air Pollution

Air pollution is usually associated with obnoxious industrial activities, transportation, congestion and insanitary conditions. Poor public transport system, rapid increase of personalised motor vehicles moving on inadequate carrying capacity of the roads are the major contributor to the air pollution in towns and cities. Vehicular pollution is assuming alarming proportions. Apart from increasing population of motor vehicles, increase in travel demand, constrained road space, type of engine used, overaged vehicles, quality of fuel, poor road conditions are some of the factors for increasing vehicular pollution in towns and cities. Problem of air pollution is very severe particularly in metropolitan cities where some of the areas have turned aesthetically very offensive with concomitant drop in property value and quality of urban life. Studies conducted by the National Environmental Engineering Research Institute confirms that the levels of sulphur dioxide and particulate matters in major cities exceed permissible limits set by WHO.

3.2 Water Pollution

The untreated waste water is discharged into sea, lakes, rivers, ponds or any other fresh water bodies which cause water pollution. In spite of general standards specified to maintain the quality of water very few industrial units have installed effluent treatment facilities. In a study of 212 cities conducted by CPCB it has been noted that the metropolitan cities generate major portion of the waste water generated in urban areas of the country. In 1996-97, in 23 metropolitan cities about 9275 mld waste water was generated out of which 2923 mld of waste water i.e. 31 % was collected and disposed off by the civic authorities and rest of the water was discharged into the rivers, lakes, sea and agricultural fields which caused water logging and contaminated rivers and lakes being the sources of fresh water. The main reason for outlet of waste water from the human settlement is improper drainage system. Only 63 % of the population in metropolitan cities is covered by well-planned sanitation and drainage system.

3.3 Noise Pollution

One of the most widespread annoyances in urban areas is the noise pollution, which is the cause of great concern to common man. Moving of heavy vehicular traffic on urban roads, air traffic near city, railways, increasing number of diesel generator sets due to shortage of power, playing of loud speakers in residential areas, bursting of crackers affect the life and well-being of the common man. Various noise pollution surveys conducted by the CPCB in the major Indian cities indicate that noise level in most of the metropolitan cities are higher than the prescribed level in the residential, commercial and silence zones. In the residential areas, noise level fluctuates between 49-67 dB(A) and the residential block located along the traffic inter-section experience a noise level up to 83 dB(A) which is much higher than the prescribed level of 55 dB(A) in the residential areas. Similarly, noise level in the commercial areas fluctuates between 59-79 dB(A) excluding the area near the traffic intersections. The striking example of high level of noise is found in the silence zones where the ambient noise levels are fixed at 50 dB(A) during daytime and 40 dB(A) during the night time. In some of the major hospitals of Delhi occurrence of noise is between 53-88 dB(A), which exceeds the ambient noise level by 38 dB(A) affecting the patients

in adverse ways. According to the findings of the Institute of Road Traffic Education, Delhi, the noisiest city in India with 83 decibels during the day and 77 decibels at night.

3.4 Urban Risks

Considerable proportion of urban population particularly in large and metropolitan cities live in marginal settlements, slums and squatter areas with limited infrastructure services. All such people are greatly exposed to grave risks in terms of diseases, loss of livelihood, shelter and even loss of life. Such areas are also affected by disasters and other natural calamities. The major risks involved in living in these areas are fury of floods, fire, epidemics, electric risks, traffic, incidence of violence and crime, building collapse, high wind velocities. Urban communities of these areas become increasingly vulnerable when high density areas with poorly maintained infrastructure are subject to natural hazards, environmental degradation, fires, flooding and earthquake, lack of infrastructure also cause urban security problems. Varying level of disparity including infrastructure services, is one of the contributory factors for increasing urban crime.

4. DELIVERY OF INFRASTRUCTURE SERVICES

The provision and delivery of infrastructure services in India is largely the responsibility of the local bodies, and where these have been assigned to state level agencies, the operation and maintenance is generally passed on to the local bodies. At present in most of the cities municipal authorities, State Government Departments at local level such as PWD, Public Health, Medical, Education, etc., and the parastatal agencies like Electricity Board, Housing Board; etc.; are providing infrastructural facilities and services. Urban local bodies generally take care of water supply, drainage and waste disposal. The State Electricity Boards provide bulk supply of power and the local authorities are expected to maintain supply. Local bodies are generally concerned with layout of streets and maintaining them in good order while major link roads are provided by State Public Works Department and Development Authorities. Postal, telegraph and telephone and other communication system are installed and managed by specialised agencies like Post and Telegraph Department, Tele-communication Department, etc. Education and health facilities are provided by both the state government and the local authority in big cities while they are provided by state government in small and medium towns. Private hospitals / nursing homes / clinics take care of health needs in big cities to a large extent. Banks and financial institutions, which are essential to maintain the economic base of an urban area as well as its hinterland, are established and run by the government as well as by the private sector. The housing activity is being looked after both by public and private sector. The contribution of private sector in building individual housing units is about 90 % while public sector plays a crucial role in developing land and provision of infrastructure facilities.

In addition, various central and state sector schemes are also contributing in augmentation of urban infrastructure. For instance the IDSMT scheme under operation since Sixth Five-Year Plan is applicable now to towns / cities with a population up to 5 lakh. Under the scheme the central and state assistance is provided for components like strengthening of roads, site and service schemes, development of bus / truck terminals, construction of storm water drains, development of market complexes, tourist centers, street lights, slaughter house, gardens, playgrounds, traffic improvement and management schemes, social amenities especially for the poor, etc.

By the end of March, 1998 a total number of 920 towns were covered under the scheme and a sum of Rs.309.95 crore was released as central assistance against which an expenditure of Rs. 465.72 crore was reported up to December, 1997. Besides, under Mega City Scheme, Hyderabad, Bangalore, Calcutta, Chennai, Mumbai are covered and expenditure amounting to Rs. 656.52 crore has been reported as on 31.3.1998. Remunerative, user charged based and basic service projects are taken in a ratio of 40:30:30 to maintain the overall-project basket commercially viable.

5. EMERGING DIMENSIONS

The trends and pattern of urbanisation in India indicate that spatial distribution of urban population as observed in the past is likely to continue. Conclusions of the National Seminar on 'Future Cities - Urban Vision 2021' organised by the Ministry of Urban Affairs and Employment in 1997 reveal that the projected urban population would be around 297 million by 2001 and about 550 million by 2021 as against 217 million in 1991. The number of metropolitan cities would go up from 23 in 1991 to 37 by 2001, 52 by 2011 and 75 by 2021. The size-class distribution of urban settlements will be further skewed and the number of Class-I towns would increase from 300 in 1991 to about 500 by 2011 accounting for almost 70 % of total urban population. The trends suggest that in the years to come the major policy imperatives should relate to the absorptive capacity of the urban centers and their ability to maintain the productivity level. Urban infrastructure and services which are abysmally low and its access particularly to the urban poor appalling need to be improved and strengthened to maintain the urban productivity level. Thus, urban infrastructure and poverty alleviation program, capacity improvement of urban local bodies to provide civic amenities and services to the residents in general and poor in particular should be the major areas of concern in the future strategy of urban development.

The growing level of urbanisation indicate that in next two decades the requirement of urban infrastructure services would be doubled and even trebled in some cases to support urban life and to sustain economic development. On the one hand the services are inadequate while on the other pressure is being mounted to improve the quality of infrastructural services. All this requires a level of investment, which is often beyond the reach of a developing economy. Urban authorities are therefore, looking more towards private sector as a source of investment and for improving the infrastructure services.

Liberalisation of macro economic policies and decentralisation process leading to delegation and devolution of authority at local level is considered to be in consonance with market friendly economies. All these policy measures would encourage greater participation of private sector in infrastructure development. At the same time the 74th Constitution Amendment Act empowers urban local bodies with greater functional responsibilities and fiscal powers would strengthen them as third tier of local government within a federal structure. In order to function as true local government the urban local bodies would have to cope with increasing demand for urban infrastructure services and to improve financial, technical and managerial capacities for carrying out the wider functions without any help from the higher levels of the government.

Most of the developed and developing countries in south-east Asia have long involved the private sector for the management, operation and maintenance of certain public services.

Various models of private sector involvement in urban infrastructure development are being practiced world over. The important modes are contracting out are Build-Operate-Transfer (BOT), Build-Own-Operate-Transfer (BOOT), with various sub-forms i.e. Build-Transfer-Operate (BTO), Build-Rent-Operate (BRO), Build-Own-Operate (BOO), Build-Own-Lease-Transfer (BOLT), Build-Own-Operate-Subsidised-Transfer (BOOST), Rehabilitate-Operate-Transfer (ROT), Lease-Develop-Transfer (LDT), Lease-Develop-Operate (LDO), etc. Another forms of privatisation options include management contract, franchise, concession, cooperatives and the vouchers system. Although there is no specific privatisation policy as far as municipal services are concerned, however, a greater change in public sector perception to operate as enabler rather than provider / builder is being witnessed. National Housing Policy (1992) also emphasised that Government should play a facilitator role with the involvement of private sector in the development of housing and servicing of land. Of late, quite a few cities in India have also involved private sector in provision and maintenance of urban services.

Scope of public-private partnership is increasing considerably in some of the infrastructure services like generation and distribution of electricity, transportation of solid waste from collection to disposal points, maintenance of community latrines, re-cycling of solid waste, slum improvement by relaxation in FSI / density, development of new townships, water supply through tankers, development and maintenance of commercial facilities, etc. Innovative development control norms and techniques like Transfer of Development Rights (TDR); Accommodation reservation (AR); development of amenity plot by individual, development franchise; commercialisation of air space are emerging concepts for development of urban infrastructure by involving private sector. Certain legal framework has also been provided which encourage involvement of private sector. One such example relates to the enactment of Haryana Development Model, and Regulation of Urban Areas Act 1975 which enables the colonisers / private developers involvement in land and housing activities.

6. OPTIONS AND ALTERNATIVES

Urban productivity is directly linked to the level and quality of urban infrastructure hence due attention needs to be given for provision, maintenance and upgradation of urban infrastructure. In recent years, a number of policy initiatives have been taken to ensure strengthening of urban infrastructure in the context of environmental improvement and macro-economic policies. Most of the programs taken up for infrastructure development have followed project-based approach without any proper coordination at town level / area levels under one umbrella. It may overlook or duplicate the efforts in meeting the actual needs in response to the demand for a particular infrastructure service. Change in focus from project based approach to a city or regional level needs would be necessary. For this purpose an integrated approach incorporating spatial, financial, environmental and institutional issues with a common basket of programs and multi-year investment planning would be essential.

Urban planning system comprising of long term Perspective Plan, mid-term Development Plan, Annual Plan followed by Projects and Schemes synchronising with economic planning system of Five Year Plans and Annual Plans need to be followed as suggested by Urban Development Plan Formulation and Implementation (UDPFI) Guidelines prepared by ITPI at the behest of Ministry of Urban Development. In this process, all the urban infrastructure projects and schemes for

various sectors would emanate from Development Plan and would also be properly linked with the overall development process and infrastructure requirements of the respective town / city.

In planning and development of physical and social infrastructure priority should be accorded to LIG, EWS, and urban poor dominated areas. An incremental approach for provision and upgradation of physical and social infrastructure would be desirable to improve the situation.

A uniform norms and standards particularly for social amenities may not be workable proposition. Norms and space standards for LIG and EWS areas should be different than those areas which are generally inhabited by HIG and affluent families. Similarly, differential standards may be followed for urban villages, old part of the town, pre-master plan / development plan areas resettlement colonies and for newly planned and developed areas. Space standards should be related to the density pattern at intra-city level to achieve functional viability of the built environment.

From infrastructural development and management point of view the metropolitan centers should be re-structured into manageable smaller city units of about 5 lakh population, so as to make them self contained viable city units with all city level social infrastructure. The concept of integrated school should replace the existing separate provision for nursery school, primary school and high school, so that schooling at the neighbourhood and community level could be managed more efficiently. Multiple use of facilities and amenities particularly educational, socio-cultural and institutional, need to be encouraged so that various functions of compatible nature could be performed in the precincts of similar nature of public facilities. For instance community hall could be used for adult education and other social welfare programs. Some of the facilities like schools could be located as far as possible near public parks, so that part of the park could be used as play field by the students. Various schools and other educational institutions could also be located around a common space so that same could be used as park and playground by various institutions. Cluster approach for provision of facilities could be another option for optimum use of scarce serviced land in urban areas. Informal sector needs to be considered as integral part of development process but norms and standards for such informal sector should be different.

Physical infrastructure particularly, power and water are the essential resources which have direct bearing on the size, scale, growth and sustenance of towns and cities. In view of the dwindling water resources both surface and underground to meet the demand of over increasing urban population apart from conservation of water, re-cycling and re-use of waste water, harvesting of rain water, supplying untreated water for gardening, cleaning washing, industrial and other non-domestic purposes would go a long way in improving the situation on water supply front. Similarly, non-conventional energy like solar energy, bio gas, energy and gas tapped from municipal solid waste having high level of organic contents could help to a great extent in augmenting the power supply in urban areas. Low cost, low water consumption, toilets by re-designing the cistern and flushing system need to be developed for wider application to save the consumption of water. For collection and disposal of sewage, micro-system at local level could be developed for on site disposal without polluting the water resources.

Infrastructure projects are generally capital intensive and have long gestation period. The financial structure should, therefore, provide a proper framework for resource mobilisation,

phasing of project expenditure in relation with resource raising ability, servicing and maintenance requirements, cash flow and the risk management. In this regard a commercialisation approach needs to be followed which should attract finance from non-traditional sources including debt / equity from multilateral funding agencies. A schedule for recovering of user charges is an important determinant for a feasible cash flow profile of the project and for making it a commercially viable project. Commercialisation of projects would necessarily require government support and it should be perceived as complementary and not supplementary to the development efforts by the private sector.

Large scale privatisation of municipal services in our socio-economic and political conditions would require to introduced appropriate concessions to make infrastructure investment attractive. This would also call for bringing about the required changes in the structure, functional domain and capabilities of the urban local bodies as envisaged in 74th Constitution Amendment Act. In fact, the parastatal agencies created by the state governments currently responsible for provision of core urban services should become technical and service agencies of the municipality. The municipal agency should be able to provide these services as economic goods rather than as welfare services for which urban local bodies need to modify the existing tax instruments and adopt innovative mechanism for taking up core urban services. Some of the important instruments to raise the finances include general taxes, user fee and charges, special assessment financing, exaction and development fee, pricing, betterment levies, land re-adjustment schemes, valorization charges, capacity allocations, excess appropriation linkages, etc.

Resource base for infrastructure development and funding should be strengthened by creating national and state level Urban Infrastructure Funds. Contribution from central / state governments bilateral and multi-lateral agencies and private sector should be made for urban infrastructure fund. As introduced by Ahmedabad Municipal Corporation, development of municipal bond is one of the long term option for financing of urban infrastructure. However, this would require enabling legislative and financial framework to make the municipal bonds effective. Land could be used as a major resource by the local bodies for urban infrastructure financing. In this context the measures like vacant land tax, development charges, conversion charges, purchasable development rights, additional charges for FSI, tradable development rights, misuse charges, parking, excess condemnation charges would help to a great extent in raising the finance for urban services.

7. CONCLUSIONS

The unbundling of services and technological innovations have opened the vistas for involvement of private sector to implement infrastructure projects in urban areas. Private sector could finance infrastructure projects and may also take risk, provided institutional environment meet certain standards and the project are properly structured. Keeping in view the efficiency and the level of services, availability of funds, institutional capacity and recovery of cost the possibilities for the involvement of public-private partnership would be higher in the areas like feasibility studies for various physical and social infrastructure studies, acquisition of land for specific service by negotiation or purchase, housing, treatment of bulk water supply, low cost sanitation, collection, transportation and disposal of solid waste, new roads, parking lots, inter-city transport, bus terminus, shopping complexes, etc.

Fiscal and monitoring incentives need to be considered for encouraging the private sector in taking up mega urban infrastructure projects like exemption of income tax / capital gain tax for certain period, tax holiday for certain services like solid waste management, sewerage and drainage facilities, income from property development to be exempted from income tax, coverage of infrastructure under priority sector, market borrowing by statutory bodies involved in infrastructure development, intervention of government for equity participation to create confidence in private sector for mobilising resources from financial institutions and public, etc.

The urban services should pay for itself. Municipality, community and other stake holders need to participate jointly in operation, maintenance and management of services. Pricing, user charges and tariff should take care of long term maintenance requirements of a particular facilities and services. The umbrella agency for overall coordination need to device a mechanism for inter-sectoral linkages and partnership between the public, private and community sectors for demand and delivery of services. In fact coordination should not be on paper only but on the ground, so as to avoid haphazard investment in creation of new assets or operation and maintenance of services. A regulatory framework-identifying role of public and private agency need to be evolved so that they do not work at cross purpose. For instance, a road in a neighbourhood is dug again and again for laying different services, sometime for the same service without any proper coordination which leads to infructuous expenditure and mismanagement of services'

REFERENCES

- Ministry of Urban Affairs and Employment, Department of Urban Development (1996) *Report of the Working Group on Urban Development including Urban Transport for the Ninth Five Year Plan*.
- Government of India, Ministry of Urban Affairs and Employment (1995) *Revised Guidelines in Integrated Development of Small and Medium Towns (IDSMT)*. .
- Expert Group on the Commercialisation of Infrastructure Projects (1996) *The India Infrastructure Report - Policy Imperatives for Growth and Welfare*.
- Government of India, Planning Commission (1992-97) *Eighth Five Year Plan 1992-97*.
- Housing and Urban Development Corporation Ltd. (1995) *Report of the Sub-Group on commercialisation of Urban Infrastructure Projects*.
- Shukla S. R., Rama Prasad V.B., Hotchandani N.N. CPHEEO (2021) *Urban Water Supply and Sanitation Scienario - Challenges and Remedial Measures - Paper Presented at the National Seminar on Future Cities - Urban Vision*.
- Town and Country Planning Organisation, Ministsry of Urban Affairs and Employment, Government of India *Background Material for Training Program on Public-Private Partnerships in the provision of Urban Infrastructure Services*.
- Bhushan B. (2021) *Financing of Urban Infrastructure in India - Paper Presented in National seminar on Future Cities - Urban Vision*.
- Human Settlement Management Institute *Seminar Papers on International IHSP seminar, Integrated Urban Infrastructure -Development*.
- Auluck Sunita. V. (1998) *Urban Environmental Pollution - Paper for the National Seminar on Safer Cities organised by Ministry of Urban Affairs & Employment*.

11 | URBAN DEVELOPMENT PLANNING: AGENDA FOR ACTION

Abstract

Growth of urban population is attributed mainly to natural increase, rural-urban migration, reclassification of towns including changes in their boundaries and addition of new towns. During the last decade 1981 - 91 natural increase accounted for 60 % of urban growth while rural-urban migration contribution was estimated at about 20 percent. Emerging trends, however, indicate that there may be some acceleration in rural-urban migration and much of the urban growth will be housed in an around the existing urban settlements. This scenario the urban settlement system shall be further skewed. Therefore, planning and development of urban areas should relate to the absorptive capacity of the urban centers and their ability to maintain the productivity level and accordingly policy options requires to be explored, and accordingly agenda for action needs to be charted out, the paper advocates.

1. INTRODUCTION

With launching of National Five-Year Plans in 1952, the economic and social development process in the country was set, on sound footings but in the absence of a clear cut urban development policy, planning for urban development moved in an ad-hoc and piecemeal manner. However, in the initial years the planning efforts were confined to crisis management planning by taking up reconstruction and rehabilitation programs on mass scale and building refugee townships. A momentum in town planning activities was generated in third Five Year Plan (1961-66) when urbanisation was recognised as an important aspect of the total process of development and the central government made a provision of 100 per cent financial assistance for preparation of Master Plans for almost all the major cities and their surrounding areas. In this phase, actions were also taken for enacting town planning legislation, setting up of Town Planning Departments in the states and union territories and augmentation of facilities in education and training in the field of town and country planning. The preparation of Master Plans was followed by creation of Urban Development Authorities and other specific agencies particularly in-metropolitan and large cities to facilitate the implementation of the plans. Development schemes as per Master Plan proposals along with central and state sector schemes such as Slum Improvement Programs, Integrated Urban Development Programs and other improvement schemes dominated the scene of planning and development during fourth and fifth Five Year Plans. From sixth Five-Year Plan onwards a number of centrally assisted schemes such as Integrated Development of Small and Medium Towns (IDSMT), Urban Poverty Alleviation Programs, Sanitation and Water Supply Schemes were taken up which further activated the urban planning and development process. The National Housing Policy, economic reforms and industrial location policies, 73rd and 74th Constitution Amendment Act are some of the recent developments of the liberalisation era having important bearing on urban planning and development.

All these policy shifts call for reorientation of urban planning and development mechanism to make it more efficient, effective, dynamic, participatory, and self-sustaining. The massive increase in the level of urbanisation, technological advancements, fast changing life styles and living patterns, increasing complexities of urban problems, deteriorating environmental conditions, unmanageable urban sprawl and growth would pose a greater challenge to the

efficient planning, development and management of towns and cities this calls for a change in urban development planning models which were hitherto mainly based on static conditions and regulatory control mechanism.

2. EXISTING SITUATION - AN OVER VIEW

Urban planning is a state subject and the central government / ministry of Urban Affairs and Employment lays down national policies and guidelines with regard to planning for urban development in the country. The projects, schemes and plans for urban planning and development are taken up either in the state sector or in the central sector but source of funding for each project and scheme depend on the counterpart funding and capacity of implementation of the concerned agencies of the state government. Currently urban planning administration is organised at three levels viz., federal, state and local. At the central level, Ministry of Urban Affairs and Employment and the Planning Commission are the two main organisations dealing with the subject of urban planning and development through TCPO, HUDCO, CPHEEO, Regional Centers for Urban and Environmental Studies, etc. Central government performs an advisory and coordinating role apart from providing technical assistance for promoting orderly urbanisation. Policy planning, allocation of funds for the centrally assisted scheme to the states; monitoring of central sectors schemes, providing incentives to national priority goals and objectives and inter-state coordination are some of the major areas of operation in urban planning and development at the national level. Besides, preparation of Inter-State Regional Plans, formulation and updating of model planning and development legislation, dissemination of new and innovative techniques for improving efficacy of urban planning approaches and methodologies are some other important functions at the central level.

At state level, urban planning is governed by respective State Town Planning Acts and other Development Acts. Functions and activities of State Town Planning Departments, Development Authorities and other parastatal agencies may vary from state to state but by and large it includes preparation of Master Plans / Development Plans, Regional Plans, Town Planning Schemes, Development Schemes, Urban Development Projects, Zonal Plans, Action Area Plans, implementation of central and state sector schemes, etc. State level policy and strategy planning are worked out to ensure formulation of statutory Development Plans at various levels and implementation of development schemes.

At local level, branch offices of State Town Planning Department, Planning and Development Authorities in large cities and metropolitan areas, municipalities, etc., are the important agencies engaged in preparation of Development Plans / Master Plans, Zonal Plans and Action Area level implementation Plans. They are also responsible for giving development permission and undertaking development or ensuring conservation in zones declared as development area.

An appraisal of planning practices reveal that the results achieved so far are not commensurate to the desired goals and objectives of planned urban development. Systematic data base both spatial and attribute particularly at town level and intra-city level, which is an essential support base for a meaningful plan, is woefully inadequate. Even after 50 years of independence there is no single agency responsible to produce large-scale base maps. Production of large scale base maps for urban planning and management gets low priority in the charter of duties of national

mapping agency. As on today, very few towns have large scale base maps. It is estimated that only one-fourth of total urban settlements which have some sort of Master Plan might be having large scale maps showing broad features. Topo maps available from Survey of India in the scale 1:250,000, 1:50,000 and 1:25,000 are mainly useful for regional planning. Survey of India also produce large-scale city guide maps but they are available only for a few tourist towns / historic cities. In this direction efforts have however, been made by some of the State Town Planning Departments like Andhra Pradesh, Tamil Nadu, Gujarat, Kerala, Punjab, Madhya Pradesh, Maharashtra, etc., to acquire aerial photography for preparing large scale base maps for few important towns in their respective states. TCPO has also taken up a pilot project of Urban Mapping Scheme in the central sector to get aerial photography and large scale base maps of 50 towns during Eighth and Ninth Five-Year Plans. State Remote Sensing Application Centers are also assisting the state government in productions of large-scale base maps for urban areas. Keeping in view large number of urban centers efforts in this area are required to be geared up.

As regards attribute data, the picture is also not that rosy. Apart from census data mainly on demographic aspects, intra-city information on urban economic aspects, land use, environmental parameters, urban geology, disaster risks is very scarce and not readily available and every time special surveys are required to be conducted. The system of periodic updating of data base both graphic and attribute required for urban planning and management is almost non-existence. However, the silver lining is that with the emerging technology of digital photogrammetry, availability of higher resolution remotely sensed data, sophisticated LIS / GIS computer packages, situation in generation as well as periodic revision of data base could be improved substantially.

In the post-independence era, as part of planning practice Development Plan approach has emerged as an important scheme of urban planning in the country. So far, about 900 Master Plans / Development Plans have been prepared under the State Town Planning Acts, Town Improvement Trust Acts, City Development Acts and other related acts / legislation. Plans for about 400 towns are in the process of preparation and in the draft stage. The concept of Master Plans has no doubt made a discernible impact in regulating and channelising the development and growth of towns and cities, infact without Master Plan the situation would have been worst in the urban areas. Implementation of the Master Plan is generally through city Development Authorities, urban local bodies / line departments at local level and other parastatal and specific purpose agencies. Central and state sectors schemes like IUDP, IDSMT, Mega city schemes, EiUS, UBSP, NRY, World Bank aided urban development projects, WHO assisted healthy city programs also help in implementation of city development plans. So far more than 150 Development Authorities have been established. Along with Master Plans, Zonal Plans, zoning regulation, building bye-laws, etc., are some of the instruments to control and promote urban planning and development activities. As the proposal at the Master Plan level are broad in nature it is followed by preparation of zonal development plan, development schemes, improvement schemes, town planning schemes, etc., which indicate detailed and specific location of various activities, facilities and services and help in smooth enforcement and implementation of Master Plan.

The experience of preparation and implementation of Master Plans has not been very encouraging mainly because of weak data base, financial constraints, ambitious plan proposals, lack of integration between spatial planning proposals of the Master Plans and Economic Plan proposals

at state and regional level, inadequate legislative support in certain areas, lack of flexibility in development approach, multiplicity of agencies with over lapping jurisdiction or undefined clear cut demarcation of responsibilities, etc. All these issues regarding efficacy of Master Plan have been discussed at length in the National Workshop on "Master Plan Approach : Its Efficacy and Alternatives" organised by the Ministry of Urban Affairs and Employment /TCPO which recommended that the Master Plan as a tool for urban development planning cannot be done away with, rather the need is to make it more dynamic, realistic and effective. The workshop recommended for greater involvement of the people, elected local bodies and other representatives of NGOs in every stage of planning process in conformity with the provision of the 74th Constitution Amendment Act, 1992. It also recommended that in order to develop realistic and effective urban development planning system, steps need to be taken to evolve resource mobilisation plan along with spatial Development Plans. Mechanism for public participation, NGOs, CBOs, weaker section of the society in the Development Plan process need to be improved. The planning exercise should aim at guiding the activities of both public as well as private sectors including the growing informal sector while keeping the larger interest of the society in view. Review and revision at regular interval should be an essential component of the planning process to impart flexibility to the development process. Urban development planning should aim at devising ways and means to increase the economic productivity of urban population and improve upon efficiency by eliminating bottlenecks and breakdowns in the delivery of urban services and generating more employment opportunities.

Suitable legal framework is also necessary for conducive planning and development of urban areas. Town planning legislation has been in existence since the beginning of the twentieth century in a variety of forms such as Municipal Acts, Improvement Trust Acts, Town Planning Acts, Periphery / Ribbon Development Control Acts, etc. Comprehensive Town and Country Planning legislation is, however; a post-independence development. A model Regional and Town Planning and Development Law which is in the nature of a guideline was formulated by (TCPO) Town and Country Planning Organizing in collaboration with Institute of Town Planners (ITPI) had been recommended to the states for adoption with such modification so as to suit the local conditions. It has been a useful guide to the efforts of the states in revising their planning laws and enacting new laws. A number of states and union territories such as Goa, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Tamil Nadu, West Bengal, Delhi, Daman and Diu, Pondicherry have already enacted comprehensive planning legislation in their states while others are in the process of enacting such legislation. Certain other supporting legislation for planned growth and development of cities and towns have also been added to the statute book as and when the need was felt. They are Development Authority Act, Slum Clearance and Improvement Act, Housing Board Act, Regulation of Building Operations Act, Water and Sewerage Board Act, Electricity Board Act Prevention of Water Pollution Act, Urban Land Ceiling and Regulation Act, Urban Art Commission Act, Punjab Scheduled Roads and Controlled Areas (Restriction of Unregulated Development) Act and laws concerning land Acquisition, Rental Housing, Transfer of Property, Fiscal Laws affecting Housing, etc.

An assessment of the existing provision of various important legislations concerning urban planning and development in the country suggest that many of them are inhibitive to the process of market oriented land and development activities and they also act as constraints to investment from

outside the government sector. Some of the legislative statutes have outlived their utility as they were framed in an environment distinctly different from the present situation particularly when the country is to face the complex urban problems in the 21st century. While reviewing these legislations, National Commission on Urbanisation (1988) also recommended for suitable amendments so that urban development planning becomes more wide ranging and effective. With the enactment of 74th Constitution Amendment Act, 1992, which is a first step in the devolution of powers to the people at the grass root level, the states are engaged in the task of amending their existing laws on municipalities and town planning to bring them in conformity with the Constitution Amendment and working out the modalities for setting up District Planning Committee and Metropolitan Committee. Guidelines for MPC / DPC have also been formulated through consultation process and are under the consideration of the Government of India.

With regard to development control measures a plethora of rules and regulations are applicable for regulating and channelising the planning and development activities. Overlapping nature of various legislations and Acts and ambiguity and complexity of development control norms cause operational difficulties particularly in a situation when municipalities are having defined jurisdiction and Development Authorities are having wider jurisdictions. There is a general lack of lucid development control norms. As a result it is estimated that more than 2/3rd space is illegally built particularly in metropolitan areas of which half is built by the urban poor who built spontaneously to survive and the rest by those who find the rules too cumbersome. A transparent system in the permissible use of space coupled with clear zoning and land mutation and sub-division code is long overdue which should be separate from building bye-laws which are local governmental functions in terms of health, fire protection and stability of building. The demand for built urban space has increased manifold with the massive scale of urbanisation. The procedures dealing with development control and violations being long drawn out, and with rising building cost, there is a progressive increase in violations of development control frame. Thus, there is a prime need to simplify ground rules and procedures so that they do not impede the efficacy of statutory development plans.

3. EMERGING PERSPECTIVE

Growth of urban population is attributed mainly to natural increase, rural-urban migration, reclassification of towns including changes in their boundaries and addition of new towns. During the last decade 1981 -91 natural increase accounted for 60 % of urban growth while rural-urban migration contribution was estimated at about 20 percent. Emerging trends, however, indicate that there may be some acceleration in rural-urban migration and much of the urban growth will be in an around the existing urban settlements. All these imply that urban settlement system shall be further skewed. Experiences of various developing countries show that economic reforms further accelerate the urbanisation level. It is estimated that by 2021 about 550 million people amounting to about 41 % of total population would be living in urban areas. In a span of 20-25 years almost second urban India would be added to the fold of urban population in the country. Estimates show that metropolitan cities which were 23 in 1991 may go up to 40 by 2001 and around 75 by the end of first quarter of the 21st century. Similarly, number of class-I towns numbering 300 in 1991 may also be doubled by 2021. About three-fourth of urban population is anticipated to be confined to Class-I and metropolitan cities. The trends projected suggest

that the major policy for planning and development should relate to the absorptive capacity of the urban centers and their ability to maintain the productivity level; urban infrastructure and services in cities are abysmally low and the access of the urban poor to these services is poor and appalling. Increasing pressure from rural areas to the urban centers would result in high growth of urban slums and urban poor especially in the fringe areas of cities. Economic, urban and industrial growth would create serious environmental problems and infrastructure deficiencies.

Urban areas are going to play a pivotal role in smooth implementation of various policies and programs enunciated through economic reforms and liberalisation. In order to achieve the desired level of 7-8 % growth of Indian economy in the next two decades adequate level of infrastructure and civic services need to be provided particularly in large urban centers. Most of the future investment is likely to be made in an around large urban centers which are to function as the nerve centers of the industry, trade and commerce, construction and service sectors. To make the small and medium towns to act as growth centers for regional development, it would require sizable investment in the infrastructure so as to develop proper rural-urban continuum. Planning for urban development would, therefore, assume a greater role for channelising the urbanisation process which would promote sustainable urban growth and regionally balanced settlement system in the country.

Agenda of the United Nations Conference on Human Settlements Habitat-II suggest for integrating urban planning and management in relation to housing, transport, employment opportunities, environmental conditions and community facilities for sustainable human settlements. To avoid unbalanced, unhealthy and unsustainable growth of human settlements, it is necessary to promote land use pattern that minimise transport demand and save green spaces. Appropriate urban density and mixed land use are of prime importance for urban development. To establish sustainable land use pattern proper framework needs to be developed for planning, development and implementation of plans at various levels. For this purpose efficient and accessible land market, fiscal incentives and land use control measures are required to be promoted. Strategies and policies to facilitate partnerships among the public, private and voluntary sector need to be formulated besides management practices to deal with competing urban land requirements. Integrated land information and mapping system would be essential to adopt environmentally sound land use strategies at local level.

Planning and development methodologies in the next century are likely to be affected by hi-tech information system, complex institutional network, high energy consuming urban living, material affluence and improvement in living standard. In this rapid urbanising society towns and cities are growing very fast and the hi-tech age of electronic, computer, communication system will drastically change the life style which in turn will affect the planning and design practices. In near future we will have more of tele-conferencing and tele-administration, more of faster communication than commutation. The rate of change in technology is faster than human ability to adjust to the new environment. All these will demand more efficient urban system thereby requiring newer models of urban planning and development. The ever increasing haphazard growth pose greater challenge to planners for evolving future concepts and techniques which could guide the future trends in urban planning and development in an harmonised manner. It calls for planning for a better environment within the available resources and also within the

environmental constraints. Over the years, although planning system in the country is well established, it needs to be strengthened in terms of implementation of plan so as to meet the dual challenges of environmental deterioration and resource constraints. The future planning has to take into consideration the morphology and structure of cities which in today's context are congested but not compact with low density on the periphery than the core. The need is to identify newer areas of development, newer resources and newer spatio-economic order leading to rational use of land and other resources to improve the standard of living of the people.

In the process of liberalisation of economy our cities are poised for a greater leap forward and the time is therefore, ripe to take stock of development process so as to provide proper direction for the future development. Cities being engines of progress would continue to function as centers of cultural, educational, intellectual and technological advances. The solution would, therefore, be in partnership approach to tackle the growing problems which are not only affecting the economic potentials of cities but also hamper the social cohesion and economic stability. Urban problems are not only growing but its magnitude and dimensions are also becoming extremely difficult to handle and deal with. The problems are required to be tackled at the legislative, social, economic and political level. In this technological age events move very fast at an intricate speed and the space loses its meaningful dimensions and as such preparedness is required to absorb the lively future shock. We have to change our planning and development approach to check the encroaching chaos of over urbanisation and wasteful use of resources. In order to meet the energy crises in human settlements more emphasis should be on use of solar energy, human energy and other form of pollution free non-conventional energies.

With enactment of Constitution (Seventy Fourth) Amendment Act, 1992 urban local bodies would be strengthened as democratic institutions of self government, it is a first major step in the process of democratic decentralisation in the country. Funds, functions and functionaries would be three essential ingredients of decentralisation which would generate a powerful urban voice. An important provision under the Act provides for the setting up of District Planning Committee (DPC) and Metropolitan Planning Committee (MPC) and entrusts the task of spatial as well as economic planning to such locally representative institutions. Therefore, the integration of the district and metropolitan plans with the annual plans of the state governments as well as the national plans become pertinent. Constitution of India for the first time recognises a framework of physical and economic development for urban areas so as to take care of their planning and development needs. It provides a three tier structure from local to state level:

- At local level - Plans to be prepared by *Panchayat* and Municipalities;
- At Regional level - District Development Plans to be prepared by DPCs and Metropolitan Development Plans by MPCs; and
- At state level - State Spatial Strategy should incorporate District and Metropolitan Plans.

The concept of integrated development planning therefore has firmly been embedded into the Constitution of India and the need is to identify the emerging perspective for integrated spatio-economic planning from national to local level. It is envisaged that an inter linked framework would comprise

- National level spatial strategies;
- Regional level strategy plans (state and district);
- Metropolitan plans; and
- City and ward level development and land use plans.

4. AGENDA FOR ACTION

4.1 Package of Plans Integrating Economic and Spatial Plans

In view of the emerging urbanisation, legal, administrative, economic and development management scenario, the urban planning system and development process while striving for sustainability of development should also have a flexibility and transparency in provision of physical and social infrastructure. Identifying the involvement of private initiative in urban development, the plan implementation mechanism should be linked with the budgetary process through five year plan and annual plan mechanism to make the entire urban development planning system more effective and rational. Hence, a package of inter-related plans is suggested to meet the emerging needs of urban development planning system. They are Perspective Plan, Development Plan, Annual Action Plans and Project and Schemes.

Perspective Plan: A perspective Plan as a long term plan (20-25 years) should be prepared for metropolitan and large cities including fast growing urban centers and potential growth centers. Such plans indicating goals, policies and strategies regarding spatio economic development should be prepared by MPC for the metropolitan areas and by the respective urban local bodies for other urban centers. The plan being the policy document should indicate main transport corridors, city level open spaces, utility corridors, cultural and heritage zones, activity nodes, direction of urban growth and speed. The plan should be approved by the state government in a decided time frame in view of the set urban development policies and should be fully synchronised with national / state Five Year Plans to facilitate integration of spatial and economic policy planning initiatives.

Development Plan: Within the approved framework of perspective plan a Development Plan of medium term (5 years) should be prepared by the Urban Local Bodies for the areas falling under their jurisdiction. The Development Plan comprising integrated infrastructure development programs and land and housing programs should provide comprehensive proposals for spatio-economic development of urban areas. Plan should indicate prospects and priorities of development containing employment generation programs, economic base, transportation and land use, housing and land development, environmental improvement and conservation programs. Plan should spell out implementation strategies both by government agencies like local bodies, NGOs, CBOs and private sectors for various schemes / programs. The plan should contain development promotion rules and resource mobilisation statement. For the metropolitan areas and large cities in view of the specific needs and priorities, subject plans for particular aspects like traffic and transportation, tourism development, environmental conservation, etc., should also be prepared along with Development Plan. Both the Plans whether Development Plan or Specific Subject Plan should be approved by MPC / Urban Local Body as the case may be in consultation with State Government.

Annual Action Plan: Within the framework of Development Plan, Annual Action Plan for the urban areas should be prepared by the urban local bodies specifying the projects and schemes with costing and cash flow for both on-going and new projects. Annual Plans should be taken up as implementation plans taking into account the performance of the preceding years and proposal for the next year as part of the approved Development Plan. In this Plan, various schemes of urban development already in operation such as Mega city, IDSMT, NRY, EIUS, UBSP, etc., and future schemes should be integrated spatially and from resource mobilisation point of view. In the Annual Action Plan source of funding from government both center and state, resource mobilisation by the local authority, grants, aids and initiatives by the private sector should also be clearly identified.

Projects and Schemes: As part of Development Plan and Annual Plan, projects and schemes could be taken up for any area / activity within the urban centers related to housing, commercial centers, industrial areas, social and cultural infrastructure, transport, environment, urban renewal, etc., by government / local agencies or private or corporate sectors. Such projects could be both long term or short term duration in conformity with development requirements of the respective town / city.

4.2 Planning Cells in DPC / MPC

As per the 74th Constitution Amendment Act, 1992, District Planning Committees and Metropolitan Planning Committees, which are mandatory requirements, have only been set up in a few states so far. DPCs and MPCs should be constituted by all the states immediately and action should be taken for making them operational. Both MPC and DPC should have Planning Cells. The existing Planning Cell at district level may be brought under DPC including unit of NIC. Similarly, the existing city development authority may function as planning department / cell of MPC. The Planning Cell should be sufficiently strengthened with spatial planners and other technical staff to help in the integration of the plans of the *Panchayats* and municipalities and to prepare Draft Development Plans. DPC and MPC may also have sub-Committees to deal with specific subjects like data base and information system, spatial planning, utilisation of resources, environment, infrastructure, poverty alleviation and employment, finance, coordination and monitoring etc.

4.3 Amendments of Town Planning Acts / Municipal Acts

Town Planning and Municipal Acts must be speedily amended to assign planning and development functions to municipalities and to include all the emerging needs of planning and development in the light of the 74th Constitution Amendment Act. Urban local bodies should be made responsible for preparation and implementation of plans.

4.4 Assistance for Plan Preparation

The center / state government should extend technical and financial support / assistance to enable local bodies to evolve and implement the suggested set of Inter related package of Plans. Updating of existing norms and space standards keeping in view the economy, security, social visibility and needs of emerging planning system should be taken up by TCPO in collaboration with other professional bodies.

4.5 Incentives for Private Sector Involvement

In order to make urban infrastructure project commercially viable the same should be formulated taking into consideration market framework. The central / state government should provide necessary incentives and tax concessions both in terms of financial sustainability and development feasibility. Efforts should be made to devise the ways and means to strengthen the project formulation capabilities of the agencies providing infrastructure facilities. Pooling and packaging of projects in coordinated manner should also be tried so that projects which are not viable on its own could be taken care of in such a system. Urban centers should actually fend for itself and also fund for itself. Hence as far as possible the infrastructure project should pay for itself by using the land as a resource. Involvement of private initiative should, therefore, be encouraged in land development programs particularly in project formulation, resource mobilisation, land assembly development and maintenance of selected infrastructure, housing construction by assigning them some projects on selective basis.

4.6 Amendment in Land Acquisition Act

The Land Acquisition Act 1894 must be comprehensively reviewed and revised to make acquisition procedures simple, expeditious and effective thereby enabling public / private authorities to acquire land easily at appropriate location within a short time at a reasonable price and in required extent. Lessons could be drawn from Singapore, Hong Kong and Sri Lanka which have reformed the law relating to eminent domain. In fact, keeping in view the dynamics of urban growth and specific urban problems a new land Acquisition Act specifically dealing with urban areas needs to be formulated on priority basis which will facilitate implementation of development plans / schemes in time.

4.7 Data Base and Information System

A computerised data base and information system including large scale base maps in LSU / GIS environment should be developed in urban local bodies, at least for all the Class-I towns in the first phase to provide essential support for planning, development, management and monitoring. Efforts already made by TCPO in this direction need to be augmented further so that it could provide necessary assistance and coordination for development of data base and Information system. At national level agencies like National Economic Surveys, Survey of Industries, surveys related to environmental and pollution conditions, population census, National Sample Surveys, etc., should be involved in a way that they help in providing economic and spatial planning data at local level.

4.8 Innovative Land Assembly and Development Techniques

Innovative land assembly, management, development and supply techniques such as concept of accommodation reservation, transfer of development rights, town planning schemes, joint sector approach, negotiated land purchase and development, etc., should be used as a resource for urban development by recovering charges in the form of development permission charges, external development charges, conversion charges, betterment levies and special cess, etc. Re-cycling of land for financing of shifting of industrial activities and other non-conforming uses from the core of the city should be used for mopping up profits for their location outside.

4.9 Simplified Building Bye-laws

The building bye-laws should be simplified and made transparent so that they are least discriminatory in the hands of implementing agencies. In land use zones maximum permissible floor area ratio on net plot, maximum permissible coverage per floor on net plot, maximum permissible height in each zone, minimum greenery at ground level on net plot,, minimum parking space on net plot, should be indicated as regulatory measures. Regulations for low income areas should be separate. Compatible mixed land use packages to be allowed in various zones should be clearly indicated in the Development Plan.

There could be many more areas which could be considered but the foregoing agenda items need to be given priority attention to improve the efficacy of planning system.

5. CONCLUSIONS

Growth of urban population is attributed mainly to natural increase, rural-urban migration, reclassification of towns including changes in their boundaries and addition of new towns. During the last decade 1981 - 91 natural increase accounted for 60 % of urban growth while rural-urban migration contribution was estimated at about 20 percent. Emerging trends, however, indicate that there may be some acceleration in rural-urban migration and much of the urban growth will be in an around the existing urban settlements. All these developments imply that urban settlement system shall be further skewed. Therefore, planning and development of urban areas should relate to the absorptive capacity of the urban centers and their ability to maintain the productivity level and accordingly policy options requires to be explored.

REFERENCES

- Government of India, Ministry of Urban Development (1992) *The Constitution Seventy-Fourth Amendment Act on Municipalities*.
- Ministry of Urban Affairs and Employment, Department of Urban Development (1996) *Report of the Working Group on Urban Development including Urban Transport for the Ninth Five Year Plan*.
- Government of India, Ministry of Urban Affairs and Employment (1996) *Report of the Sub Group on Urban Planning of the Working Group on Urban Development including Urban Transport for the Ninth Five Year Plan*.
- Government of India, Planning Commission (1996) *Report of te Technical Group on Urban Planning System*.
- Institute of Town Planners, India (1996) *Urban Development Plan Formulation and Implementation Guidelines*.
- United Nations (1996) *Conference on Human Settlements (Habitat-II). The Habitat Agenda, Goals and Principles, Commitments and Global Plan of Action, Iſtanbul*.
- Ministry of Urban Affairs and Employment (1997) *Technical Papers National Seminar on Future Cities-Urban Vision : 2021*.

12 | TOWN AND COUNTRY PLANNING LEGISLATION IN THE GOLDEN JUBILEE YEAR OF INDIA'S INDEPENDENCE

Abstract

At the threshold of the 21st Century, while the nation is celebrating its 50th year of Independence, the enactment of comprehensive town planning legislation in the states and union territories has assumed special significance and urgency in the context of programs of planning and development of urban areas. It is therefore, necessary that satisfactory legal tools are available at the state level for undertaking these urban development programs without being hampered by unauthorized development, lack of legal remedies, etc., and can be effectively implemented within the framework of a statutory plan. The 73rd and 74th Constitution Amendments have laid the basis, for the first time for the third tier of the government and is a milestone towards efficient governance based on the principles of democratic decentralization. It is high-time to respond to this challenging task in the quickest and most efficient manner to make this third tier of Local Government, a reality.

1. INTRODUCTION

At the threshold of the 21st Century, while the nation is celebrating its 50th year of Independence, the enactment of comprehensive town planning legislation in the states and union territories has assumed special significance and urgency in the context of programs of planning and development of urban areas which are to be taken up in the 9th Five Year Plan under the central and state sector programs of urban development. It is necessary that satisfactory legal tools are available at the state level for undertaking these urban development programs without being hampered by unauthorised development, lack of legal remedies, etc., and can be effectively Implemented within the framework of a statutory plan.

The rapid urbanisation and industrialisation has aroused growing recognition that urban development should not merely be construed as construction of houses or provision of water supply and other community facilities in an unrelated manner but should be seen as integrating development of different sectors in which each sector has a definite functional role to play. The need and urgency for providing effective legal tools at the state level to control and regulate the development of towns and cities on sound town planning principles within an overall comprehensive regional frame has been underscored time and again and the state governments are making efforts to meet this need in a number of ways. One such important legal tool is a town and country planning law.

Town and country planning, however, does not find specific mention in any of the three lists of the Seventh Schedule of the Constitution of India, which have enunciated distribution of legislative powers between the center and the states. It is only the states, which can enact laws relating to 'land' and 'local government' which appear as entries 5 and 18 in List - II (State List), of the Constitution. Further, entries 20 and 42 in the Concurrent List provide for 'economic and social planning' as well as 'acquisition and requisition of property'. In such circumstances, the doctrine of pith and substance' is applied to ascertain the true object of

the legislation as a whole. The power to legislate on a subject matter of an entry in the list also includes the power to legislate on an ancillary matter which can be said to be reasonably included in the power given. The question of competence of the state legislature to enact a law on town planning came up before the Supreme Court for the first time in 1967 in the famous case of *Maneklal Chhotalal V/s M.G. Makwana and others* (AIR 1967 S.C.1373). It was contended that the Bombay Town Planning Act, 1954, enacted by the State Legislature under which the Ahmedabad Municipal Corporation had declared its intention to prepare the Town Planning Scheme had adversely affected petitioner's rights over land covered by the scheme. The competence of State Legislature to enact Bombay Town Planning Act, 1954 was, in fact, challenged since the subject matter was not covered by any of the entries in the State List or the Concurrent List of the seventh schedule of the constitution. Examining the relationship of 'town Planning' with the subject of 'land' and 'economic and social Planning', the Hon'ble Supreme Court rejected the petition and held that the State Legislature was competent to enact the Bombay Town Planning Act, 1954.

As a corollary to this decision, it could be argued that the Parliament is also empowered to enact Town Planning legislation since 'economic and social Planning' is a concurrent subject (List - III). In practice, so far, the regulation of land use and its development have been confined to state legislation and the Parliament has not enacted any legislation on this subject.

2. TOWN AND COUNTRY PLANNING LEGISLATION

Town Planning law is not a new legal tool in India. Looking back, we find that, in the early part of the 20th Century, town planning was considered a part of the municipal administration and dealt with as such but as problems gradually assumed greater proportions both with regard to the scope and complexity, Improvement Trusts were set up [Bombay (1889), Mysore (1903), Calcutta (1911), Uttar Pradesh (1919), Punjab (1937), Nagpur (1937), Delhi (1937)] to formulate and implement town improvement schemes. In the meanwhile, town improvement schemes were also undertaken under the Town Planning Acts which were introduced in some of the states. The earliest town planning legislation in India was enacted by the Government of Bombay in the year 1915, followed by other provinces, i.e., Madras (1920), United Provinces (1919) and Punjab (1922). Town Planning and town improvement activities have been carried out within the framework of such legislation during the last five and a half decades. It would be seen that these Acts neither intended nor provided for comprehensive planning which has now come to be accepted as most necessary for directing and regulating urban and regional development. The earlier enactments only provided for undertaking town improvement schemes by the local bodies from the point of view of public health sanitation, etc.

Town planning, in its traditional sense, mainly embraced physical planning. It has now become comprehensive in nature dealing with physical, economic as well as social planning. Keeping in view diverse conditions with regard to physiography, pattern of urbanisation, traditional practices, socio-economic inequalities, etc., prevalent in different parts of the vast country, a single national Act on the subject has not been enacted. However, a Model Regional and Town Planning and Development Law, which is in the nature of a guidelines formulated by the Town and Country Planning Organisation, in consultation with Institute of Town Planners,

India had been recommended to the states for adoption with such modifications so as to suit local conditions. The Model is being revised in the light of the Urban Development Plans Formulation and Implementation (UDPFI) Guidelines which have also suggested certain changes in the legislature framework to make it more efficient and dynamic as also a time bound process.

3. 74TH CONSTITUTION AMENDMENT ACT AND TOWN PLANNING LEGISLATION

The role and function of the State Town Planning Departments have acquired a new dimension in view of the 74th Constitution Amendment. It would scrutinise the Development Plans prepared by the municipalities and the *panchayats* in the state and assist the government in following the due process of law before these are legally enforceable. The State Chief Town Planner would be made responsible in scrutinising these Plans in the light of the urban development strategy formulated by the state, physical planning and development programs undertaken by the state, policy guidance and sectoral planning. The district development plans of the various districts would need to be inter-linked with the overall planning and development in the state, because the State Town Planning Departments alone are in a better position to conceive the spatial dimensions of planning and development and the available resources in the state against the priorities assigned to works included in the plan and their phased program of development. The State Town Planning Department is also the agency to see as to what extent the regional dimensions of plans have been conceived and satisfied.

The urban and regional planning legislation encompasses comprehensive regional, local and metropolitan planning, their enforcement and implementation. The process of planning would include plan preparation, plan approval, plan enforcement, plan review and plan revision aspects. The plan enforcement and implementation would include promotion, control and development according to plan and preparation of detailed schemes of development and their execution. Land acquisition would be involved in the execution of development schemes. However, in the operation of planning and development functions, the former should not be too closely influenced by the latter to avoid undue compromises, that are made in the developmental work, adversely affecting the long term plan perspective. Ordinarily, planning and plan implementation should go together and should be undertaken by a single authority to optimise coordination between them. However, in the case of development tasks of a big magnitude like large scale housing, development of industrial areas and industrial estates, water supply, sewerage, drainage, etc., a single authority may not be adequately equipped to discharge both planning and development functions. In such situations separate Development Authorities, uni-functional or multi-functional, may be set up for execution of specific types of development. These authorities may operate in more than one planning area and also at district and state level. What is needed is not centralised development but coordinated development and the two functions should have close links and the planning authorities should be entrusted with over all supervisory powers through budgetary controls and technical guidance. This situation is largely brought out in the case of Delhi, where there are multiplicity of authorities with little or no coordination among them.

Most of the Development Plans prepared under the State Town Planning Acts vary in scope and content. However, majority of them have lacked in programming and budgeting. The

implementation of a phased program of development and priorities have not been linked with the available resources. The relationship with the hinterland, by and large, is not adequately emphasised.

Yet another important aspect in the implementation of action plans is the placement of town and country planning in the state administrative set up. In some cases, the town and country planning activity is with the development department while in many other cases, it has been put along with the local self government. Since town and country planning has wide scope of activities, it should best be located along with the development function which deals with the socio-economic planning, where a more rational and closer relationship can be visualised between spatial planning and socio-economic planning.

It has been experienced that there is often a lack of coordination in the implementation of policies and programs of urban development at the state level. The Regional Plan should include recommendations to the government regarding the directions to be issued to the concerned local authorities, planning and development authorities in the region and different departments of the government in respect of enforcement and implementation of the proposals contained in the Development Plan. It should also include a report, indicating the priorities assigned to works included in the Regional Plan and the phasing of the program of development. These provisions would enable the state government to issue such directions to all the development agencies, public and private sector, which would ensure coordinated development of the area. It would also enable the phasing of development over a period in accordance with the resources available. These can be translated into Annual Plans with budgetary controls and the priorities assigned to the projects at the state and at the national level.

With regard to planning and implementation of proposals for regions which cut across state boundaries, the participating states should agree, by passing necessary resolutions in their respective State Legislatures, authorising the Union Government to set up statutory coordinating boards for planning, monitoring and implementation of interstate regions. The implementation of the Plan proposals would be done by the participating states in their respective areas within the framework of the Plan. The NCR Planning Board is a case in point in which such a statutory authority has been set up under an Act of the Parliament.

In order to implement Action Plans at the national, state and local levels, the imperative need for effective legal tools needs hardly be emphasised to serve the long term interests of the community and the region as a whole within the broad framework of accepted national goals and objectives. The state governments should take immediate steps (applicable in the case of those states which do not have comprehensive legislation) to enact their existing town and country planning legislation so that comprehensive urban and regional planning legislation is brought on the statute book to guide, regulate and manage urban development programs in a phased manner. The spatial development plans would go a long way in promoting and sustaining rapid economic development process by identifying the growth centers taking into account the physical and socio-economic variables.

With the enactment of the 74th Constitution (Amendment) Act, 1992, which is a first step in the devolution of power to the people at the grass root level, the states are engaged in the task of

amending their existing laws on municipalities and town and country planning to bring them in conformity with the constitutional amendment and working out the modalities for setting up a District Planning Committee (DPC) and Metropolitan Planning Committee (MPC).

In view of the Constitution (74th) Amendment, some states have entrusted the municipal bodies with the task of preparing plans for economic development and social justice. The functional domain of these local bodies is, however, yet to be determined keeping in view the other existing institutional arrangements for many functions listed in the Twelfth Schedule by taking note of the existing arrangements, new compulsions and the organisational and financial capabilities of the municipalities. The existing municipal laws are totally inadequate to enable these local bodies to discharge their new constitutional responsibilities. The manpower available with the local bodies is grossly inadequate and ill equipped to take over planning, development and management, the challenging role because the responsibility for providing adequate civic services is an up-hill task, it may not be possible for local bodies to accept this challenge. If the urban local bodies have to serve as agencies for plan preparation, enforcement and implementation as envisaged in the Constitution (74th) Amendment, it is absolutely necessary that effective infrastructure is built into the local government system to give a fair trial to this new role.

Article 243-W of the Constitution (74th) Amendment has laid down that the State Legislatures are to bestow by law, such powers and authority to the local bodies as to enable them to function as institutions of self- government for the preparation of plans for economic development and social justice, performance of functions and implementation of schemes for various matters including those listed in the Twelfth Schedule, added to the Constitution by this Amendment. Important among them are urban planning including town planning, regulation of land uses and construction of buildings and Planning for economic and social development. A lot of preparatory work by the state governments is still required to formulate policies for the devolution of powers and responsibilities upon the municipalities to perform these functions.

At the district level, Article 243-ZD of the Constitution (74th) Amendment provides for the constitution of a Committee in every state to consolidate the plans prepared by the *panchayats* and municipalities in the district and to prepare a draft development plan for the district. Such District Planning Committee (DPC) shall take into account matters of common interest between the *panchayats* and the municipalities including spatial planning, sharing of water and other physical and natural resources, integrated development of infrastructure and environmental conservation and the available resources - financial or otherwise in preparation of the draft Development Plan. Similar provisions are contained for the preparation of Development Plans for every metropolitan area for which a Committee is required to be constituted under Article 243-ZE.

A close study of these provisions of the Constitution (74th) Amendment provides a reasonable inference that each municipality, by whatever name called, is expected to prepare a Plan for its area and undertake the task of urban planning including town planning, regulation of land uses and construction of buildings as given in the Twelfth Schedule. Article 243-Q lays down that three types of urban local bodies required to be constituted which are:

- A *Nagar Panchayat* for a transitional area, that is to say an area in transition from a rural area to an urban area;
- A municipal council for a smaller urban area; and
- A municipal corporation for a larger urban area.

The Amendment contains mandatory provisions as also discretionary provisions which are to be carried out by the state governments. Under Article 243-ZD, it is obligatory on the part of the state government to set up a District Planning Committee (DPC) for each district in the state. However, the composition of the DPC as also the manner in which the seats in such committee are to be filled up and chairperson of such committee have been left to the state government to decide. In doing so, 80 per cent of the total number of members of such committee are to be elected from amongst the elected members of the *panchayats* and the municipalities in the district in proportion to the ratio between the population of the rural areas and the urban, areas in the district.

This Amendment has, for the first time, envisaged an intermediate level for regional planning and there is a need to provide budgetary inputs for implementation of such plans and to convert them into Annual Action Plans and to integrate socio-economic planning with spatial planning and to evolve permanent administrative set up for periodic monitoring, review and implementation. Today, several cities and towns have Development Plans which have, in some cases, been updated too. However, these exercises are largely confined to land use aspects only, in most of these cases, the Plans have not been translated into socio-economic development plans and investment programs. Further, the physical planning was largely restricted to the limits of the cities and towns with little integration with peripheral areas. However, urban development planning integrated with regional, state and national strategies recognising spatial and functional linkages between administrative units is relatively a recent phenomenon. The Constitution (74th) Amendment, recognising the need for integrated urban development planning by the local authorities, has included urban planning including town planning and planning for economic and social development as the legitimate municipal functions which are consolidated at the district level. Therefore, the concept of integrated development planning is inbuilt into the planning process by the Constitution (74th) Amendment. These provisions would have far reaching implications for urban and regional planning for which effective legal support should be provided. So far, urban plan preparation under the Acts take unduly long time due to elaborate procedures and the Master Plans prepared under the Acts depending largely on collection of data and analysis which, more often than not, remain at the draft stage. As a result, the Plan proposals do not keep pace with the development and become, in many cases, outdated even before they are approved or implemented. It is a common knowledge that detailed development plans / zonal development plans are not drawn up for several decades as in the case of Delhi. The process of urbanisation continues unabated and does not wait for these plans to be implemented.

4. LAND ACQUISITION FOR URBAN DEVELOPMENT

With regard to land acquisition required for planned and orderly development of the towns, it is necessary that speculation in land values is kept at the minimum. The revised Model Law has linked up Section - 4 and Section - 6 notifications under the Land Acquisition Act, 1894 with the

publication of the Draft Development Plan and the Comprehensive Development Plan respectively, in order to minimise speculation and to determine the payment of compensation with reference to the date of publication of the draft Plan.

The need for a new Land Acquisition Act specifically dealing with urban areas is increasingly being felt in view of the difficulties and time consuming process involving unending litigation and high speculative prices to be paid for the acquired land under the existing Act. When this Act came into force in 1894, town planning and development activity was hardly a phenomenon and did not have the dimensions or the importance they have now. Today, it has become a force to be reckoned with. The administration of this Act was entrusted to the Ministry of Agriculture at the center and the Revenue Departments at the state level, which continues to be so till today. This Act has not been helpful either in making urban land available expeditiously for development by public agencies or by procuring land at reasonable prices.

For implementation of the plan proposals, compulsory acquisition of land was regarded as a pre-requisite for enforcing planned development. The exorbitant market rates of land to be paid for compensation, opposition to compulsory land acquisition by land owners, etc., have compelled the authorities to explore collaborative approaches within the existing legal framework. Although the scope and the modus operandi of such exercises may be different, essentially all these approaches are similar since they allow the land owners and builders to develop land and return the developed plots to the original allottees. The alternatives to compulsory land acquisition have to be conceived possibly in three types of planning situations, viz., acquisition of an individual plot reserved in the Development Plan, foster planned development of land in the future perspective in an area which is presently largely undeveloped and areas in need of comprehensive redevelopment on account of obsolete pattern of development structure.

5. INNOVATIVE APPROACHES FOR LAND ACQUISITION

The alternatives to compulsory land acquisition in the form of Transfer of Development Rights (TDR) and Accommodation Reservation have been tried in Maharashtra under the Development Control Rules of Greater Bombay. The land owner can transfer his development rights on the land reserved for roads to the remaining land if he agrees to hand-over the land to the Municipal Corporation of Greater Bombay free of cost and free of encumbrances.

The land owner is authorised to develop the facility for which the land is reserved, hand-over the land to the Bombay Municipal Corporation free of cost and utilise the development rights equivalent to the full permissible FSI for his own purpose. This measure is particularly relevant and is likely to succeed where land prices are prohibitive and higher than the construction cost. However, it is to be conceded that this alternative may not prove to be very successful where land prices are less than the construction cost. This form of alternative is recognised as Accommodation Reservation.

In the case of Transfer of Development Rights, the Development Control Regulations, 1991, permit the landowner to transfer his development rights elsewhere in cases where the land is required to be exclusively put to reserved use or where no building construction is possible,

provided the land in question is handed over to the Bombay Municipal Corporation free of cost and free of encumbrances as in the case of Accommodation Reservation.

In both cases, i.e., accommodation reservation and transfer of development rights, the Planning Authority reserves its right to compulsorily acquire the land if the land owner does not come forward to do so. This aspect would prompt the land owners to agree to transfer their development rights without any consideration for the price difference. It may be mentioned here that these innovative approaches have a greater chance of being - successful in the case of vacant land because where the buildings are occupied, the cost of rehabilitation of the existing occupants would be an additional burden on the land owner.

Since it has not been possible to get land expeditiously and at a reasonable price on account of the increasing cost of urban land acquisition, the Town Planning Scheme (TPS) approach as an alternative model for urban land development has been used as one of the tools for implementing the proposals contained in the Development Plan, although their contents, procedures and results vary. It is an Area Planning technique on the concept of land readjustment and is the alternative development vehicle which has been used most extensively in the states of Maharashtra and Gujarat. Maharashtra is in fact, a pioneer in the field of TPS and the Bombay Town Planning Act 1915 laid down the initial legal framework for the technique which was replaced by the Bombay Town planning Act, 1954. It has been subsequently superseded by the Maharashtra Regional and Town Planning Act, 1966. In order to make the TP Scheme as a self financing mechanism in the planning and servicing of urban areas, it is necessary that excessive delays encountered in processing and implementation and other administrative bottlenecks are minimised and the system of land titling and registration records are improved.

6. CONCLUSIONS

The 73rd and 74th Constitution Amendments have laid the basis, for the first time for the third tier of the government and is a milestone towards efficient governance based on the principles of democratic decentralisation. The widely varying sizes and financial base of the urban local bodies, inadequate sources of revenue of *Panchayats* coupled with the different level of services needed for different categories of local bodies, lack of trained manpower, etc., make the task of achieving coordination between the rural and urban systems difficult. It is high-time to respond to this challenging task in the quickest and most efficient manner to make this third tier of Local Government a reality.

REFERENCES

- Town and Country Planning Organization, Government of India, *Revised Model Regional and Town Planning and Development Law*
Government of India, Ministry of Law and Justice (1894), *Land Acquisition Act 1894 (I of 1894)*

13 | DEVELOPMENT MANAGEMENT OF CAPITAL CITIES

Abstract

Lack of social responsibility, unemployment / under employment, imposition of western concepts of design and planning in the indigenous setting of various regions are some of the challenges generally confronted by the capital cities, which needs to be reviewed in the right earnest so that capital cities could be managed in a rational and viable manner. However, this paper suggests that a common strategy of the development of all the state capitals, may not be feasible and practicable. Therefore, for development of capital cities regional approach by taking city-region into consideration needs to be adopted. In fact, for all the major metropolitan capital cities, the metropolitan-region has been delineated for the purpose of planning, which needs to be explored by other state capitals. The paper also suggests that it would be more advisable to shift some of the capital functions to other towns / new towns could be developed slowly to perform capital functions.

1. INTRODUCTION

Capital city is a pivot of the state where both the processes of convergence and divergence take place in terms of political, administrative, judicial, economic, social, cultural and intellectual functions and activities. Historically the location and planning of capital cities have been receiving the personal attention of the rulers, emperors and political leaders. Capital city mirrors the personality of a state and leave an imprint of the age to which it belong. The princely capital of Jaipur, the imperial capital of Lutyens Delhi, the post-independence modern capital of Chandigarh are some of the best examples of urban design and planning widely acclaimed world over. The capital cities because of their preferred locations attract large number of activities and people. The largest six cities in India are the capital cities and many of the state capitals have become the primate cities. The planning concepts and approaches followed in capital cities greatly influence the development pattern of other settlements in the respective regions or state and hence capital cities could provide widely replicable planning and development management models. An insight of the development pattern of state capitals being the symbol of vision would be of special relevance for the planning and development of human settlements.

2. CAPITAL CITIES IN RETROSPECT

Location and development of capitals by the chieftain or king or ruler have historically-served instruments of cultural change providing a theatre for the demonstration of architectural and planning concepts of the time. Mumbai, Calcutta and Chennai called the hybrid capital cities of European Era in India greatly influenced the urban design concepts in many Indian cities. Similarly, the beautiful capital city of Chandigarh designed and built in the post-independence era is popularly known as "Mecca" of modern town planning in India. The majestic capital complex of Lutyens Delhi stands out a unique example of urban design not only in India but in the entire world. The first Comprehensive Development Plan of National Capital of Delhi prepared by the Town and Country Planning Organisation in 1961 is known as Delhi Imperatives is widely followed as model and guide through out the country. Planning and development of cities in

general and capital cities in particular largely depend on the location and site characteristics. In fact, the site characteristics have been considered the most important factors for locating the ancient, pre-industrial as well as the modern capital cities. Having defensible position, available drinking water supplies and food producing areas nearby were influential in the viability of the capital cities. For instance in Madurai which was capital of Hindu Kingdom of Pandyas the site rises gradually from north - east towards south - west which allows air and sun light into inner apartments of the houses and temple. Historical records confirm that 18 different capital sites in Delhi area were chosen in the past 3000 years. Most of the historic sites were located between Delhi Ridge and River Yamuna. The ancient capital cities of Mahanjodaro, Harrapa and Patliputra are the living urban relics of the past and the existing capitals would be the epitome for future urban India.

A peep in the historic past reveals an interesting picture about the factors that were considered for location and development of capital. The selection of site and size of a capital largely determine the success or failure of the capital. The consequences of shifting the capital from Delhi to Daultabad by Mohammad Shah Tughlak in 1327 is well known and quoted as the bad examples of capital location. In pre-classic and classic period security from enemy, climatic protection, hill tops and upland areas were the major considerations for location of capital. In medieval and neo-classic period apart from security administrative convenience and strategic locations were given due considerations for capital cities. In the industrial age accessibility to transport routes and center of trade and commerce assumed significant importance apart from above stated factors for deciding the location of the capital. All these factors along with capitals to serve as center of gravity for administrative, political, social, economic, cultural functions continued to be the important criteria for sitting planning and development of state capitals in the modern age. Image of an individual city has some time moved the government to retain the city as its capital like Rome and Delhi. Similarly, convenience for importation of supplies, conduct of administration, maintenance of security caused shifting of capital from one place to another as Britishers shifted their capital from Calcutta to Delhi in the early part of twentieth century. Another similar example is shifting of capital from Rio-de-Jeneiro to Brazilia. Capitals have also been established due to their strategic locations such as Mumbai, Calcutta and Chennai. After the re-organisation of states and union territories under the State Reorganisation Act 1956 although many princely capitals were there in one state, choice was however, made for administrative convenience and suitable location. For instance in Rajasthan among Bikaner, Ajmer and Jaipur capital function was assigned to Jaipur. Similarly in Madhya Pradesh among the 4-princely capitals of Rewa, Bhopal, Gwalior, Indore, Bhopal was preferred as the state capital. In case of Gujarat in spite of princely capitals of Rajkot, Bhuj a new capital of Gandhinagar was built on virgin land.

Planning, design and development of capital cities have by and large been on an imposing scale reflecting thinking and ideals of the government and society of the age. For instance Calcutta, Mumbai and Chennai designed and built by Britishers were developed as colonial city on a grandeur scale. On the other hand Lutyens Delhi was built as an imperial city in a majestic style with an imposing President House on Raisina hills flanked by Secretariat, Parliament House and Ministerial buildings along a giant Vista. The Mughal Capital of Lucknow was built

in splendours with spacious courts, pleasure gardens, water fountains and rich decorations. In all such historic capitals the emphasis was, however, mainly on the royal palaces, courts and religious building. The capital of Jaipur is one of the excellent example of planned city built about three centuries ago. The capital is in an integrated and harmonious setting around a palace. The city has wide roads which intersect one another at right angles retaining the characteristics of the time in which it was built. In contrast to the grand historic capital cities the newly built capitals of Bhubaneswar, Chandigarh and Gandhinagar reflect continuity in the past and present. Chandigarh has been conceived in its entirety from the beginning. It provides an experiment in a new way of urban living and revolutionised the urban development particularly in the northern states of Punjab and Haryana. Chandigarh being symbol of past pride offers hope for a modern future. The form and structure of Bhubaneswar bears both the imprint of religion and also rational scientific knowledge of town planning. It is mainly an administrative city and called as Washington of Orissa while Cuttack always remained its New York.

3. EMERGING SCENARIO

Capital city Chandigarh being the joint capital of Punjab and Haryana as also the Union Territory, vary in size and functional characteristics. Primacy of capital cities is reflected in many states. There are 10 metropolitan cities which are functioning as the capital cities of the respective states and the capital cities of Srinagar and Thiruvananthapuram may also attain the status of metropolitan city by the end of this century. The preponderance of metropolitan cities as the state capitals may be attributed to the historic reasons and their location in a particular setting. The growth of population in some of the older metropolitan capitals such as Calcutta, Mumbai, Chennai is however lower than those metropolitan capital cities which were assigned the capital functions after the formation of the states, for example Bangalore, Lucknow, Jaipur, etc. Other metropolitan capital cities of Delhi, Hyderabad and Bhopal have also been experiencing a fairly higher growth. Patna is the exceptional metropolitan capital city which had only 19 percent growth during 1981-91 much lower than the urban growth rate of 36 percent at national level and 30 percent of the Bihar state during the same period. The growth of Thiruvananthapuram which is nearing metro has also been tremendous and so is the case with Srinagar. In the newly built capital cities of Chandigarh, Gandhinagar and Bhubaneswar the growth of population in the initial stages was very spectacular and fast. In the last decade although these cities recorded higher percentage of urban growth than the national average the pace of growth was less than the preceding decades, it clearly depicts that the new cities with a steep curve of growth in the initial years have reached at stabilizing level.

The growth pattern in other capital cities also reveal an interesting picture. The capital cities of smaller states and union territories like Shilong, Imphal, Agartala, Panaji, Kavarati and Daman are growing lower than the national and state average urban growth. Itanagar is the exception with an highest growth rate of 158 % followed by Aizawl with 108 %, while on the other hand Gangtok is the only capital which declined in size during 1981-91.

It may be inferred from the growth pattern of the capital cities that the large mega cities functioning as the capital cities have probably reached to the saturation level while in other

metropolitan capital cities more growth is taking place. In rest of the large capital cities with population of 5 lakh and above like Guwahati, Srinagar and Thiruvananthapuram growth curve may still rise upwards before stabilizing. In the smaller capital cities with few exceptions the prevailing trend of urban growth is likely to continue in the years to come providing a pointer to the emerging development pattern in the future.

Functional characteristics of the capital cities reveal another dimension of their growth pattern. Generally the capital cities are considered administrative and service towns. But experiences show that merely on the basis of service functions capital cities cannot sustain which have to have some potentials. Chandigarh is the glaring example which although initially was conceived primarily as the administrative capital has substantial extent of industrial and commercial functions. The functional classification of capital towns as per 1991 census indicate that slowly and steadily non-capital functions are making greater strides in the capital cities. Although the smaller capital towns in the eastern states are predominantly service towns nevertheless industrial and commercial activities are following very closely. The capitals of Lucknow, Patna along with all other newly built cities of Chandigarh, Gandhinagar and Bhubaneswar are categorised as the service towns but industrial activities in these capitals are also of paramount importance. The capital cities of Mumbai and Bangalore have been classified predominantly as the industrial cities where service functions are of lesser importance. Few capital cities are bi-functional towns performing service as well as another important economic functions. For instance Delhi, Bhopal, Guwahati and Pondicherry fall in the group of service-cum-industrial town while Hyderabad, Jaipur and Chennai are industrial-cum-service towns meaning thereby industrial functions are dominant functions followed by service functions. Thiruvananthapuram is an exceptional capital city with a multifunctional character. This is the only capital city in India where primary activities are still important employing more than 20 percent of working population. The trends of functional classification over the years reveal that larger capital cities no longer sustain mainly on the service and administrative functions and the basic economic functions in terms of industries, manufacturing, trade and commerce are essential for sustainability and economic viability of the capital cities.

Density of population in the capital cities is an indicator of overcrowding and congestion putting a severe pressure on the scarce urban infrastructure. Density of population is proportionately increasing with the size and growth of capital cities. Bangalore has the highest gross density of population of 14,943 persons per sq km followed by Calcutta bracketed with Lucknow and Mumbai with 12,282 and 10,697 persons per sq km respectively. Chennai, Delhi Patna and Shillong are the other capital cities which have fairly a higher density of population of more than 7,000 persons per sq km. In the newly built capital city of Chandigarh the density of population is as high as 7382 persons per sq km while in Gandhinagar and Bhubaneswar it is 2,174 and 3,299 persons per sq km respectively. In some of the smaller capital cities of Imphal, Agartala, Pondicherry, Port Blair and Daman the density of population is reasonably high depicting more than 4,000 persons per sq km. On the whole density of population in the capital cities is much more than the national and state average urban density pattern pointing to the fact that problems in the capital cities are far more severe and complex in nature than other urban centers.

All the capital cities being the preferred locations have well conceived Development Plans for channelising their growth and development pattern, in majority of the capital cities Development Authorities have also been established for the implementation of Development Plans and other improvement schemes. In addition, various other parastatal agencies looking after different development aspects in and around capital cities have also come up in many of the capital cities. Being the center of gravity the capital cities are also preferred in terms of resource allocation under various central and state sector schemes. Many of the state capitals have been covered under the scheme of Environmental Improvement of Urban Slums, Urban Basic Services and various housing and shelter improvement programs. As many as 13 capital cities are covered under centrally sponsored scheme of Integrated Development of Small and Medium towns. In the first phase of Mega City Scheme launched during Eighth Five Year Plan all the five mega cities covered under the scheme are the capital cities. Due to economy of scale and conglomeration of activities and services, the corporate sector, multinationals and the private sector also prefer capital cities from investment and business point of view. In nutshell the growth dynamics and perspective of capital cities display a bright picture particularly for the smaller and medium level capital cities and call for a cautious approach for the mega capital cities.

4. PROBLEMS AND IMPEDIMENTS OF CAPITAL CITIES

In spite of capitals being the pampered cities, they are facing numerous problems in terms of inadequacy of basic infrastructure and specialised services and facilities. It is a widely known fact that provision of infrastructure, both social and physical has not kept pace with the ever growing population of the capital cities. With excessive growth some of the capital cities have attained dubious distinctions reflecting the acuteness of the problems. For instance, Delhi is the most polluted city in India and fourth in the world while Bangalore, the garden city is growing very wild.

Calcutta's growth had choked its arteries, Bombay's expansion is sinking into the sea, planned city of Chandigarh is showing signs of disorder, Chennai on the sea coast facing acute shortage of potable water, Hyderabad losing its charm of historic grandeur, Shimla queen of hills and summer capital of British India is moving fastly towards downhill and so on and so forth.

The problem of capital cities vary from large mega capitals to small capitals. In most of the historic capital cities, the main capital functions have gone to the sideline as other activities are booming and zooming. The excessive congestion, the proliferation of slums and squatter areas, inadequacy of basic services like water, sanitation, health, social and cultural urban transport services are some of the critical problems and impediments in these large mega capital cities.

On the other hand, in the newly built capital cities, the spurt of activities has overtaken the pace of basic infrastructure, thereby creating a feeling of disorder and mismanagement. Originally, these capitals were developed as the executive cities but later on when the industrial and other functions were added, they lost the planned semblance and continuity in development thereby giving a feeling of lopsided development. In the smaller capital cities and towns where the

capital functions and its related infrastructure have yet to be established fully are facing peculiar problems of adopting equitable space standards as prevalent in other major state capitals.

The primacy in some of the state capitals have made them on the one hand as unmanageable cities and while on the other hand they also deprived backward regions of the state of their share of resources for development. Mass rapid transit system required for efficient mobility and functioning of the large capital cities is also falling short of requirements both in terms of resource and technology. The energy is another deterrent to keep these large mega capitals to moving smoothly on the right track. Combating with unabated pollution is one of the major serious problems affecting severely the health of the mega capital cities.

Lack of social responsibility, unemployment and under employment, imposition of western concepts of design and planning in the indigenous setting of various regions, are some of the common problems generally being faced by the capital cities. All such impediments need to be reviewed in the right earnest so that capital cities could be managed in a rational and viable manner.

5. DEVELOPMENT IMPERATIVES

A common strategy of the development of all the state capitals, may not be feasible and practicable. For the large mega capitals, it would be prudent to shift some of the capital functions to other cities or small new township could be developed slowly for the capital functions. Such trends are visible in many of the countries where either new townships have been developed adjacent to the historic cities or some of the state level functions like benches of High Court etc., have partially been shifted to other important towns. CIDCO township in Bombay, Salt Lake City in Calcutta, Noida near Delhi, Panchkula and Mohali along Chandigarh, Gandhinagar in close proximity to Ahmedabad are some of the examples which are sharing partially or fully the capital functions of the respective states. In some of the larger states like Maharashtra every year the Assembly Session is held at Nagpur and some of the Directorates are located at Pune. In Jammu and Kashmir state also Jammu acts as the winter capital. Even in state like Haryana some of the state level Directorate have been located outside the capital. Keeping in view all such trends it would be advisable to shift part of the capital functions at least from the Mega capital cities to other settlements so as to have balanced development in the region. Few more new towns particularly in the highly urbanised states could also be developed to absorb the migratory streams and some of the capital functions.

In an another approach, counter - magnets in the secondary cities need to be developed for certain state level capital functions. Such an approach would also be helpful in the balanced development of the respective region of state. Decentralization of capital function particularly of metropolitan capital cities would be in line with the provision of the 74th Constitution Amendment Act. A well articulated hierarchy of urban system need to be developed in each state so that functions at various levels could be assigned to each urban settlement instead of directing all the effort towards capital cities. As envisaged under 74th Constitution Amendment Act, decentralisation of planning function at local level could also enlist close involvement of people in planning and development of human settlements.

In the newly built capital cities, Chandigarh, Bhubaneswar and Gandhinagar, the priority should be to enhance their image and serenity as per the stipulation of the plan. The newly built capitals having spectacular growth need to be given special attention to check the fast impinging disorder. These capitals should be treated as models of urban planning in the respective region so as to draw the meaningful lessons. For instance Periphery Control Act applicable in Chandigarh is one of the unique example but its implementation /enforcement is not visible as per expectation thereby leading to an urban mass instead of well conceived and well controlled city of Chandigarh.

6. CONCLUSIONS

For development of capital cities regional approach by taking city-region into consideration need to be adopted. In fact In all the major metropolitan capital cities, the metropolitan-region has been delineated for the purpose of planning. Action for delineating the city region for all the state capitals except some of the smaller capitals should be initiated in right earnest. In case of metropolitan cities the Metropolitan Planning Committee (MPC) as envisaged under 74th Constitution Amendment Act need to be constituted for taking up planning and development of metropolitan capital region. For other cities the Planning Authority at local level should be entrusted with the job of planning and development of capital region.

For augmentation of infrastructure facilities, resources available under various central and state sector schemes need to be pooled so as to follow a coordinated approach in development. At present multiplicity of agencies generally overlapping in their operational jurisdictions are responsible for the provision and maintenance of various infrastructure facilities and services. The overall coordination of all these infrastructural agencies is generally missing both at vertical and horizontal level. MPC / Planning Authority need to be geared towards developing them as the coordinating agencies. The new techniques of land development such as TDR, Accommodation Reservation (AR) as practiced in Bombay could be followed in other capital cities. Giving of Development Rights to the private developer by providing extra FSI or bonus FSI could also be tried for the speedy development of housing and infrastructure facilities. Unbundling of development project particularly large urban infrastructure projects such as MRTS would be helpful for greater involvement of private sector in urban infrastructure. Incremental approach for development of facilities and services should be followed. The urban land need to be used as a resource and the time is ripe to make urban development particularly in capital cities a self sustaining exercise rather than depending more or budgetary resources.

14 | RURAL URBAN INTERFACE IN THE CONTEXT OF THE 73RD AND 74TH CONSTITUTION AMENDMENTS: AN OVERVIEW

Abstract

The 73rd and 74th Constitution Amendment Acts, 1992 are first serious attempts to ensure adequate constitutional obligation so that democracy in the rural and urban local government is stabilized. It is a pointer to the determination of the state to bestow power to the people to plan for themselves and participate in the decision making process of preparation of plans of economic development and social justice by nagar and gram Panchayats and Municipalities. These plans are required to be consolidated by the District and Metropolitan Planning Committees. If the provision of 73rd and 74th Constitution Amendment Acts are implemented in the spirit it has been conceived it will be instrumental in promoting rural-urban continuum.

1. INTRODUCTION

The 73rd and 74th Constitution Amendments have bestowed the planning function to the rural and urban local bodies at the grass root level providing for the preparation of plans by the *Panchayats* and the Municipalities. Following the Resolution passed by the Central Council of LSG meeting held on 7th May, 1994, many states have amended their Municipal / Town Planning Acts to provide for the constitution of District Planning Committee (DPC) and the Metropolitan Planning Committee (MPC) and entrusted the preparation of plans of economic development and social justice to the municipalities and the municipal corporations. It is timely to talk and discuss about the revival of grass root democratic institutions in the urban and rural areas. Even after giving constitutional status to *Panchayati raj* institutions and urban local bodies, one is sceptical about the revival of these institutions because there is a certain amount of disinclination to devolve functions upon the local bodies as envisaged in the Constitution Amendments. The work done so far to amend the State Acts is more or less a patch work than undertaking a new legislation. While most of the states have amended their laws with regard to constitution and composition of municipalities, ward committees, *panchayats*, reservation of seats, elections, finance commission, etc., the powers, authority and responsibility of municipalities and *panchayats* in terms of the Constitution Amendments are yet to be spelt out in detail. Some states have entrusted the municipal bodies and the *panchayats* the task of preparing plans for economic development and social justice, yet the functional domain of these local bodies is required to be determined keeping in view the other existing institutional arrangements for many functions listed in the Eleventh and Twelfth schedules. A lot of preparatory work by the state governments is still required to formulate policies for the devolution of powers and responsibilities upon municipalities and *panchayats* for the preparation of plans for economic development and social justice and the performance of the functions and the implementation of schemes including those in relation to the matters listed in the Eleventh and Twelfth Schedules by taking note of the existing arrangements, new compulsions and the organisational and financial capabilities of the local bodies.

It may be relevant to mention in this connection that the provisions of Articles 243G and 243W of the 73rd and 74th Constitution Amendments respectively are, in fact not mandatory and

are left of the state governments to decide at their discretion as to which functions are to be assigned to the municipalities and *panchayats*. There was no intention to encroach upon the autonomy of the states by making mandatory provisions in the Constitution Amendments to delegate powers, responsibilities to the rural and urban local bodies. Similarly, the Eleventh and the Twelfth Schedules to the Constitution Amendments are not mandatory. It is quite clear that the performance of the functions like rural housing, drinking water, technical training and vocational education of the Eleventh Schedule in the 73rd Constitution Amendment and planning for economic and social development, environmental protection, promotion of ecological aspects and poverty alleviation (common to both the Schedules) would need a much strong financial capability and more manpower personnel which the *panchayats* and municipal bodies are utterly lacking today. It is unfortunate that several states for one reason or another have been postponing elections to *panchayats* and urban local bodies which amounts to violation of the 73rd and 74th Constitution Amendments. These two Acts have been enforced since June, 1994 and it was expected that the states would complete their constitutional obligation under the two Acts within one year and the practical institutional difficulties in enforcing the Acts would be sorted out. In fact, there is no provision in these two Acts which prescribes a time limit for implementation which has further delayed the follow up action on the constitution amendments.

The existing municipal laws are totally inadequate to enable these local bodies to discharge their new constitutional responsibilities. The man-power available with the local bodies is grossly inadequate and ill equipped to take over the challenging role of planning, development and management. It is imperative that the existing municipal laws are amended comprehensively to define the role of various development departments including town and country planning department to bring them in line with the directions enshrined in the Constitution Amendment.

2. RURAL URBAN DIVIDE

It is now increasingly being realised that the local government, which have for the first time received constitutional guarantee under the 73rd and 74th Amendment Acts, should not only provide civic services for the welfare of the local people but also carry out the task of development and planning. But, unfortunately, these rural and urban local bodies are confronted with numerous problems of multi-dimensional nature on account of rapid urbanisation, population growth and industrialisation. The level of efficiency has been deplorably low. Even the responsibility for providing adequate civic amenities is an up-hill task. If the rural and urban local bodies have to serve as agencies for plan preparation, enforcement and implementation as envisaged in the Constitution Amendments, it is absolutely necessary that effective infrastructure is built into the local government system to give a fair trial to this new role.

There is a wide economic gap and dichotomy of rural and urban development. The major crisis of rural scene depicts the prevalence of large scale poverty, agricultural landless labourers, disguised unemployment and underemployment. The marginal productivity of labour in rural areas is very low and the village settlements are scattered and in certain cases are not economically viable, The village agricultural land is subdivided and fragmented. There is wide income differential between skilled and unskilled workers of rural and urban settlements. The rural artisans earn significantly less than their counterparts in industrial urban areas. The availability of medical and educational facilities in Indian villages is unsatisfactory and sanitation is inadequate. With the

result, the general environment of rural agglomerations is so unattractive and depressive that more than three fourths of the Indian population is constantly subjected to artificial attraction of urban glamour and better opportunities of life.

Due to rapid expansion of urbanisation, the village areas have been swallowed and the rural settlements are rapidly transforming themselves into urban agglomerations. The total rural population of the country as also the population per village has been declining. A noticeable preference for urban way of life is evident not only in India but throughout the world. Therefore, rural planning and development strategy must strive to preserve the villages as they are the vital source of agro-Industrial production, income and employment prospects.

3. RURAL PROGRAMS AN APPRAISAL

The various rural development programs commenced since the Five Year Plan period namely Community Development Program (1952), Intensive Agricultural Area Program IAAP, (1964) and High Yielding Varieties Program (HYVP 1966-67), aimed at boosting agricultural production and they did make some headway but unfortunately the small farmers did not receive much significant economic benefit. In the Fourth Plan, rural development programs namely Small Farmers Development Agency (SFDA), Program for Marginal Farmers and Agricultural Labourers (MFAL) and Drought-Prone Area Program (DPAP) were incorporated. One of the significant programs of the Fifth Five Year Plan (1974-79) was the Minimum Needs Program (MNP) which included development components like elementary education, adult education, rural health, rural water supply, rural roads, rural electrification, housing for landless labourers, environmental improvement of urban slums and nutrition. In the Sixth Plan, the Integrated Rural Development Program (IRDP) was launched which is still continuing in the Eighth Plan by Integrating it with the agricultural and other rural developmental programs. It is a scheme of Self Employment by financial assistance to acquire productive assets in employment ventures in primary, secondary and tertiary sectors, but since villagewise assessment for economic activities in respect of potentialities had not been ascertained, it did not yield the desired results. The other significant rural employment schemes were Wage Employment Programs, National Rural Employment Program and Rural Landless Employment Program. In the Seventh Plan, the different rural development programs were planned and implemented by a single agency at the district level under the banner of District Rural Development Agency, (DRDA). Besides, the scheme of Integrated Rural Energy Program (IREP) was taken up in the Seventh Plan. These programs of rural development suffered because they did not evoke people's participation to the required extent and also due to lack of administrative controls and self generating employment activities. In fact the The strategy of rural development should aim at:

- Land reforms through consolidation of scattered land holdings ;
- Transfer of technological know how from urban to rural areas;
- Effective rural transport network system in a regional perspective;
- Selecting growth centers by integrating scores of villages for boosting agro-industrial development and generating employment opportunities; and
- To Ensure rural-urban continuum through effective inter-flow of agro-industrial resources from rural to urban areas.

The Constitution (Seventy Third Amendment) Act, 1992 specifies the role of *panchayats* in the context of rural development. Article 243G, lays down that the Legislature of a state may endow the *Panchayats* with such powers and authority for the preparation of Plans for economic development and social justice and Article 243H may authorise them to:

- Levy, collect and appropriate such taxes, duties, tolls and fees in accordance with such procedure and subject to such limits;
- Assign such taxes, duties, tolls and fees levied and collected by the state government for such purposes and subject to such conditions and limits;
- Provide for making such grant in aid to the *Panchayats* from the Consolidated Fund of the State; and
- Provide for constitution of such funds for crediting all moneys received, respectively by or on behalf of the *Panchayats* and also for the withdrawal of such money there from, as may be specified in the law.

Following these provision, the state governments should devolve upon the *Panchayats* necessary financial powers to enable them to prepare economic Plans of rural development for generating adequate manpower opportunities.

The *Panchayats* under the provisions of Constitution (Seventy Third) Amendment Act have to extensively carry out comprehensive rural work programs as soon as adequate financial resources are available to them. Such programs should

- Adopt labour intensive techniques for utilizing the optimal local resource availability;
- Ensure road development and the inter-linkages with the urban areas and construct small scale industrial sheds,
- Provide power development through effective rural electrification program; and
- Promote marketing and agricultural development through cooperative institutions.

There is an urgent need to train people with capabilities in different trades and industries for future manpower development. Under the *Panchayat* administration, the social and economic development should be emphasised and specific importance has to be given to transport and electricity networks. Above all, the *Panchayats* have to provide a massive program of comprehensive rural works for improving the standard of living in the villages and conditions have to be created so that subsistence population of the rural areas is able to become successful producers of profitable goods and services. To do this, adequate rural Infrastructure, upgrading latest technological know how as also the skill of the producers through the provision of effective means of production, inputs and credit availability is needed. All the resources under the multitude of rural development programs should be pooled under a single accountable authority to implement integrated development strategies.

4. MODEL REGIONAL AND TOWN PLANNING LAW

The Model Regional and Town Planning and Development law has devoted a separate chapter, dealing with Regional Planning giving complete legislative backing by constituting the statutory

Regional Planning and Development Authority (RPDA) for preparation, processing, approval, enforcement, execution and implementation of development Plans. It is envisaged that after the declaration of the Regional Planning area by the government on the advice of the Board, Regional Planning and Development Authority may be constituted. This authority is entrusted with the work of carrying out a survey of the regional planning area, prepare an existing land use map and prepare a Regional Development Plan. It is also to coordinate the plans and programs of development agencies operating in the regional planning area. Looking into the functions of the Regional Planning and Development Authority in the context of 74th Constitution Amendment, it appears to be akin to the District Planning Committee. The distinguishing feature of the two sets is that while RPDA is to prepare the Regional Plan by carrying out the surveys and land use map, the DPC is to consolidate the plans prepared by the *panchayats* and the municipalities in the area and this committee is required to take an overall view of the whole area consisting of the rural areas as well as the urban areas in the district within the parameters stated in Article 243-ZE. The DPC has been made more responsive to the people by providing 80 % of the members to be elected from amongst the *panchayats* and the municipalities. The remaining 20 % have been left to the state government to decide. It is here that the experts in the field of town planning, urban administration, financial analysts, engineers and other district level / regional level officers of the state government, voluntary organisations, institutions, etc., need to be provided. The Model Law envisaged that RPDA shall have members drawn from the government at the level of Superintending Engineer, PWD, Collector of the district and three professional experts. The Regional Planner should be the Member Secretary and Chief Executive Officer of RPDA

5. DISTRICT PLANNING COMMITTEE

The Plans for the rural areas falling under the *panchayats* and the urban areas of the municipalities are to be prepared by the respective local bodies which would get consolidated at the district level by the DPC by taking into account the spatial dimensions of planning and development and the available resources. The DPC is to ensure that developments in the district conform to the plan prepared by it, which would be implemented by the *panchayats* and municipalities in their respective areas. In addition, a provision should also be made, in the Acts that the DPC while consolidating the plan of the district, shall include recommendations to the government regarding the directions issued to the concerned local authorities and other agencies in the district and the different departments of the government in respect of enforcement and implementation of the proposals included in the Plan of the district and the phasing of the program of development. This provision would enable the state government to issue such directions to all the development agencies - public and private which would ensure coordinated development of the district.

The DPC would provide inter-action with municipal bodies and *Panchayati Raj* institutions in relation to planning and conflicting resolutions. In this connection, certain important questions concerning the urban-rural interface may arise like - the fringe area of a town where urbanisation is taking place which may lie within the purview of *Panchayati Raj* institutions. Similarly, certain district roads maintained by *Zila Parishad* may be passing through the municipal areas. The source of drinking water for the town may, in fact, lie outside the limit of the town and the disposal of waste, as well. These are illustrative examples and many more such aspects would require an overall view of development of the district and allocation of investments between rural and urban institutions at the level of the district as a whole. The question of planning

controls for regulating buildings in the peripheral areas surrounding major municipalities may have special problems which may be vested with the rural institutions but having regard to the future development of the area and its possible incorporation into the main municipality at a later date, it may be necessary that the municipalities should also have a say in such building sanctions. The matters like extension of the municipal boundary necessitated by urban growth, the transition of a particular village *Panchayat* to the level of *Nagar Panchayat*, etc., are questions which are best addressed by the DPC. Today, we have some form of district planning bodies in most of the states but they are generally nominated and are not responsive to the people. The Chairperson of the DPC should be vested with the Divisional Commissioner who may have a broader perspective of overall planning or alternatively he could be elected by the elected members of the DPC. The Constitution amendment has left to the state governments to decide the chairperson. It would be difficult to prescribe a rigid composition since there is considerable variation in the urbanisation levels and so would be the nature, extent and scope of the problems of the city and its hinterland.

With regard to the functions relating to district planning which may be assigned to such committee, the constitution amendment has left it to the discretion of the state government, while it may not be appropriate to prescribe the planning functions too rigidly to make room for flexibility to suit individual situations, certain guidelines, however, could be considered. The DPC shall, keeping in view matters of common interest as laid down in sub-section 3 of Article 243-ZD, prepare the draft Development Plan of the district as a whole by consolidating the plans prepared by the *panchayats* and the municipalities in the district. In doing so, the following aspects / functions could be entrusted to it:

- Issues relating to peripheral areas and resolution of conflicts;
- Approval of guidelines for planning, building controls and aesthetics;
- Matters relating to sharing of minerals, water and other resources between different local bodies including *panchayats* within the district;
- Issues relating to sources of water supply, sites of disposal of sewage, solid waste, etc;
- Formulating plans for development of integrated infrastructure like water supply schemes which would serve peripheral village areas and the main city;
- Overlapping functions between *panchayats* and urban local bodies in the district and resolution of conflicts;
- Formulating operational guidelines for planning and location of agricultural markets and *mandies* in towns; and
- Scrutinizing of investment allocation on an annual basis for the local bodies in the district.

6. METROPOLITAN PLANNING COMMITTEE

Like the DPC, there is a provision for the constitution of a committee for metropolitan planning for every metropolitan area to prepare a draft Development Plan under Article 243-ZE. The composition as also the manner in which the seats of such committee are to be filled is left to the discretion of the State Government. Although it is specifically provided that 66 percent of the members of the committee are to be elected from an electoral college comprising of the elected members

of the municipalities and chairpersons of the *panchayats* in proportion to the ratio between the population of the municipalities and the *panchayats*. The representation in such committee of the concerned state government departments and the central government departments and the organisations and institutions is also to be provided by the state government through legislation.

With a view to imparting a more democratic character to such planning process, the constitution amendment has provided MPC for every metropolitan area which are multi-urban and multi-district. This committee shall prepare a draft Development Plan by taking into account the plans prepared by the municipalities and the *panchayats* in the metropolitan areas, matters of common interest, overall objectives and priorities, set by the central government and state government concerned and the nature and extent of investments which are to be made by the governments. The remaining one-third of the members could be drawn from the Central Government Departments and concerned State Government Departments; President of the Chamber of Commerce and industry, experts in the field of town planning, municipal administration, engineering and the concerned MLA representing the metropolitan area. The constitution amendment has left the choice of the Chairperson of this committee also to the discretion of the state government.

With regard to the functions of the MPC, it would scrutinise the Development Plans of the different urban local bodies and the *panchayats* in relation to the spatial and economic dimensions of the metropolitan areas as a whole and then recommend changes in their Development Plans. It would also go into the dynamics of urbanisation taking place in the metropolitan area, decide on the transition of village *panchayats* to urban local bodies i.e. *Nagar Panchayat* in a phased manner. The Investment Plan of these local bodies would require to be coordinated and the MPC would provide a forum for the resolution of conflicts between different local bodies. The major investment projects of the central government as also the state government in the area would also be coordinated by the MPC.

7. CONCLUSIONS

It is hoped that the Constitution (Seventy Third and Seventy Fourth) Amendment Acts would be able to organise physical planning in the context of village settlements. The effective process of planned development will boost production, income and employment prospects in the rural settlements. These Amendment Acts are first serious attempts to ensure adequate constitutional obligation so that democracy in the rural and urban local government is stabilised. It is a pointer to the determination of the state to bestow power to the people to plan for themselves and participate in the decision making process of preparation of plans of economic development and social justice by *Panchayats* and Municipalities as also by the District and Metropolitan Planning Committees. The Constitution (73rd and 74th) Amendment Acts should be instrumental in promoting integration of rural and urban continuum of spatio-economic planning in the rural and urban areas. The changed status has to enter the legal frame in its true spirit and is required to be tested on operational plane for sometime before a final verdict can be given. Until though it remains only a pious hope.

REFERENCES

- Town and Country Planning Organization, Government of India, *Revised Model Regional and Town Planning and Development Law*
- Government of India, Ministry of Urban Development (1992) *The Constitution Seventy-Fourth Amendment Act on Municipalities*

15 | RURAL DEVELOPMENT PLANNING IN RETROSPECT AND PROSPECT

Abstract

The 73rd and 74th Constitution Amendment Acts have added new dimensions in rural development planning by revitalizing the concept of district planning, however, in order to place rural development planning on a firm footing it would be essential to integrate the rural-urban development within a spatial development frame drawn at district level. In the emerging scenario the major thrust of rural development should continue to be on growth; employment; social justice; spatial coordination; and quality of life. The emphasis should be on optimum utilization of natural resources and increasing the productive efficiency to attain the desired growth; without jeopardizing the environmental concerns, which call for re-orienting our attitude and approach towards area planning / regional planning both technically and academically to do full justice in tackling the challenges of rural development planning, the paper argues.

1. INTRODUCTION

Since the beginning of the planning era rural development has been receiving the utmost attention in national and state plans however, the emphasis has been on development of agriculture and allied activities, rural infrastructure, target group and beneficiary oriented schemes which lately focused on welfare and employment generation programs. Alleviation of rural poverty has been one of the primary objectives of all these programs and schemes enunciated in various Five Year Plans. Rural development planning implies both the economic betterment and social transformation which calls for increased participation of people in the rural development process through decentralisation of planning process and better institutional mechanism. Recent 73rd and 74th Constitution Amendment Acts relating to *Panchayats* and Municipalities while providing constitutional support for revitalising the entire mechanism for rural and urban planning and development have also ushered into an era of inter-facing rural-urban development as part of the coordinated approach at local level. The liberalisation of economic development policies and stress on diversification of rural economy have added yet another important dimension to the changing rural structure in the country. However, to ensure the success of planning and development of rural areas in the desired manner within the broad objectives of planned development, the state governments not only need to amend the related laws and acts in conformity with the Constitution Amendment but are also required to create a suitable structure by strengthening planning capabilities, bringing about necessary technical and attitudinal changes and devolving in right earnest the responsibilities and resources to the *Panchayati Raj* institutions at various levels.

2. RURAL SCENARIO

Despite rapid process of urbanisation during the last few decades, India has been and continues to be predominantly rural. Nearly 623 million people constituting three-fourths of country's population as per 1991 census are living in about 5.65 lakh villages of varying sizes ranging from small hamlet to more than 10,000 population. The rural population is more pronounced in the hilly states of Himachal Pradesh, Sikkim, Assam, Arunachal Pradesh, Tripura, Nagaland, Meghalaya

and relatively less developed states of Bihar, Orissa and Uttar Pradesh. Although proportion of rural population to total population has declined marginally from 89 % in 1901 to 74 % in 1991, its size in absolute terms has almost trebled from 213 million to 623 million during the same period. The trends of growth of rural population are almost same in all the states and union territories i.e. proportion of rural population to total population is declining but size of rural population is increasing steadily including highly urbanised states of Maharashtra, Tamil Nadu and Gujarat. The rural settlement structure is predominated by small size of villages below 500 population. As per 1981 census about half of the total villages are in this category containing 12 % of total rural population whereas number of large size villages (above 1000) are just 26 % but contain as much as 68 % rural population. The remaining rural population comprising 6 % is living in about 24 % of medium sized villages (500-1000).

Characterised by low productivity; under utilisation of land and human resources; weak agrarian structure and faulty practices; poor living and working conditions; inadequate technical and institutional base; large population base; lack of social inputs in the development process; the rural areas are essentially dispersed settlements mainly dependent on agriculture and allied activities. The increasing size of rural population has put severe pressure on agriculture. About two-thirds of total working force is engaged in agriculture. Although proportion of agricultural workers to total workers has gone down slightly from 72 % in 1971 to 67 % in 1991, total number of agricultural workers has however, increased from 130 million to 191 million during the same period. This has serious implications on declining land-man ratio particularly availability of arable land per agricultural worker for gainful employment. The amount of per capita availability of arable land was about 0.3 hectare in 1981 which has further gone down to 0.22 hectare in 1991. Similarly, arable land per agricultural worker has also gone down from 1.2 hectares to 0.97 hectare during the same period indicating substantial increase in agricultural workers while arable land remain almost the same. A clear correlation obviously exists between the density of population and per capita availability of agricultural land. Areas with high density are marked by low per capita agricultural land and vice-versa. With the increase of population including rural population the existing land-man ratio would further decrease. Agriculture being the prime stay of rural economy cannot absorb the ever increasing rural work force gainfully and hence instances of unemployment or under employment are more in the rural areas resulting into rural poverty on large scale. Eighth Five Year Plan estimates indicate that about 30 % of rural population is below poverty line. Proportion of rural poor is significantly higher in most of the dense populated states like West Bengal, Kerala, Tamil Nadu, Bihar, etc., and in tribal concentration pockets of Madhya Pradesh, Orissa etc., in comparatively better developed states of Punjab and Haryana incidence of rural poverty is very less i.e. below 10 per cent. Development efforts made in rural areas since the beginning of planning era have no doubt, centered around eradication of rural poverty but still a lot more is required to be done to achieve the desired goals of Planned development of rural areas.

3. RURAL DEVELOPMENT EFFORTS IN RETROSPECT

Since long, planners and policy makers have been concentrating on agriculture and almost identifying agriculture development with rural development, it is undisputable that agriculture is of paramount importance in rural development but rural India is much more than agricultural India.

In fact, various sectors of development be it agriculture, power, transport, irrigation, industry, mining, forestry, animal husbandry, human settlement development, social infrastructure, etc., have direct bearing on rural development which is a multi-faceted phenomenon. Increase in agricultural production has been the prime objective to meet the increasing demand of population as well as to improve the income particularly of the rural poor to ensure that the process of development is sustainable. Most of the rural development programs and schemes have been in operation under agriculture sector. Over the last 40 years around Rs.45,000 crore have been directly invested by the public sector in various categories of irrigation schemes and water control works generating a potential for irrigation to the tune of 70 million hectares. Similarly, all other resource sectors and infrastructure development program have contributed substantially in rural development.

Until Sixth Five Year Plan, rural development has been taken as part of agriculture and allied activities sector and allocation for various programs was made accordingly. Since Seventh Five Year Plan onwards rural development and poverty alleviation has been treated as a separate sector in the plan document and specific allocations are made. With the twin objectives of alleviation of rural poverty and socio-economic transformation of rural society more than 30 rural development programs and schemes have been launched since the First Five Year Plan specifically for rural areas. Besides, several other programs have also been launched by the state governments through State Plans. An analysis of developmental efforts reveal that emphasis over the years has been mainly on the programs related to income generation, target group development, agricultural growth area development, education and training and welfare. Approach and strategy followed for rural development in various Five Year Plans at national level and the specific important programs taken up from time to time are given in Table 1.

Sl. No.	Five Year Plan	Approach & Strategy	Important Programs / Schemes
	1	2	3
1.	First Five Year Plan	All round balanced development	<ul style="list-style-type: none"> • Community Development Programs. • National Extension Service.
2.	Second Five Year Plan	Socialistic Pattern of Society	<ul style="list-style-type: none"> • Khadi and Village Industries. • Multipurpose Tribal Development Blocks. • Intensive Agricultural District Development Program.
3.	Third Five Year Plan	Increasing National Income and Condition of Rural Masses	<ul style="list-style-type: none"> • Applied Nutrition Program. • Intensive Agriculture Area Development Program. • Farmers Training Education. • Well construction program. • Rural work program. • Tribal Development Block. • Composite program for women and pre-school going children.
4.	Fourth Five Year Plan	Growth with stability	<ul style="list-style-type: none"> • Drought Prone Area Program. • Crash Scheme for Rural Employment for Small Farmers

Sl. No.	Five Year Plan	Approach & Strategy	Important Programs / Schemes
	1	2	3
			<ul style="list-style-type: none"> • Development Program. • Tribal Development Program. • Pilot Rural Employment Program. • Minimum Needs Program. • Command Area Development Program
5.	Fifth Five Year Plan	Removal of Rural Poverty	<ul style="list-style-type: none"> • Hill Area Development program • Food for work program • Desert Development Program.
			<ul style="list-style-type: none"> • Whole Village Development Program. • Training Rural Youth for Self Employment (TRYSEM). • Integrated Rural Development Program (IRDP).
6.	Sixth Five Year Plan	Rejuvenation of Efforts for Alleviation of Rural Poverty	<ul style="list-style-type: none"> • National Rural Employment Program (NREP). • Development of Women and Children in Rural Areas. • Rural Landless Employment Guarantee Program (RLEGP).
7.	Seventh Five Year Plan	Reduction in proportion of rural population below poverty line.	<ul style="list-style-type: none"> • Programs for Income Generation for the poor through assets endowments and wage employment. • Integrated Rural Energy Program (IREP). • IRDP, TRYSEM, RLEG. Program • Development of women and children in Rural Areas(DWCRA) • National Rural Employment Program. • Jawahar Rojgar Yojna.
8.	Eighth Five Year Plan	Elimination of Rural Poverty and Employment Oriented Growth Strategy.	<ul style="list-style-type: none"> • Building up of Rural Infra- Structure for a more sustained employment and development. • Jawahar Rojgar Yojna. • IRDP, DWCRA, IREP. • Integration of Rural Alleviation Program for Rural Development

With all these sustained efforts a great deal of development has been brought about in rural areas but still incidence of rural poverty persists largely among the rural masses. It clearly indicates that there has been some inherent weakness in our approach and strategy followed for rural development.

4. IMPEDIMENTS AND CONSTRAINTS IN RURAL DEVELOPMENT

The efforts made by central and state governments for development of rural areas can be grouped broadly under six categories namely:

- Community development program;

- Minimum needs program;
- Target group oriented program;
- Area development program;
- Spatial planning approach; and
- Integrated Rural Development Programs.

Most of these programs have been taken up in isolation and do not form part of a long term perspective policy for rural development planning at state / regional level. It appears that programs have preceded the Plans and in some cases required plans are not even drawn. As such, instead of bringing about consistency and uniformity in various development program in the successive Five Year Plans some of the program had to be abruptly changed or dropped in favour of new programs. For instance Community Development Program launched in the First Five Year Plan concentrating on all aspects of rural development was considered later on too defused to give concrete results. Similarly, Intensive Agriculture District Program advocating a selective area approach to agriculture development could not help all the farmers equitably as envisaged. In fact, initially emphasis was on community development programs which later on shifted towards family welfare schemes in the subsequent plans.

Rural development programs as a whole have neither been integrated at village level nor with the urban development programs in the larger context, thereby failed to establishing required rural-urban linkages essential for integrated development. The proportion of rural population below poverty line has not declined as envisaged in spite of massive increase in agricultural production also substantiate the fact that rural development has not been integrated well between various income groups and areal units. Similarly, missing linkages are also visible between production and employment as is evident from massive figures of estimated number of rural unemployment and under-employed in spite of increased production and productivity, non - integration of rural development is also evident in terms of quality of village life, as still about 1.5 lakh villages lack in potable drinking water facilities which is the basic minimum need. In real sense, there has been no integration in development program in urban or rural areas separately or jointly and the development programs remained unconnected organically or spatially.

Area development programs and approaches comprising Drought Prone Area Program, Tribal Development Plan, Command Area Development Program, Hill Area Development Program made concerted efforts in the specific areas, which are basically under developed regions. Effect of all such schemes have not been encouraging as proportionately large amount of resources required for the benefit of a small group covered under these programs could not be made available on sustainable basis. Besides complex nature of problems transacting inter - state boundaries required exceptional coordination among various agencies but the same lack in true spirit. Similarly, spatial planning approach through the concept of multi-level planning could not be followed at district and lower level in right perspective owing to number of factors; affecting plan formulation and implementation exercise. Generally, the attempts in this direction ended up in splitting of state plan allocations district wise and department wise tacking synchronisation of all the programs at spatial level.

Integrated Rural Development Program encompassing all facets of rural society such as social economic, institutional, administrative, etc., also lacked clear understanding of integration. It mainly targeted at individual family level for increasing their income and not for comprehensive area development plans. The approach is mainly concerned with agricultural development and focus on individual cultivators. Various development programs are concerned with the rural poor but implementation failed to eradicate poverty and in certain cases identification of rural poor itself is a great problem. Besides each department at local level viewed sectoral responsibility as their main concern contrary to the fact that no sectors in rural development should be viewed as independent. The desired level of people's participation has not been forthcoming in most of the rural development programs, apart from resources from center and state governments through various schemes there has not been any significant mobilisation of local resources.

As compared to the progress made in agricultural sector, attempts at rural industrialisation has not been adequate, mainly because of failure of transmitting to rural areas industrial knowledge, skill and discipline by industrial extension service which affected adversely diversification of rural economy. There is virtual absence of secondary and tertiary occupations. In planning for rural development generally village have been taken as unit of self-sufficiency rather it should be linked with market hinterland which have a bearing on their development. For instance more emphasis has been given on rural roads connecting villages with towns rather than with one another. Viability of rural settlement in terms of its size has generally not been given any precedence for any program or plan for rural development.

5. EMERGING DIMENSIONS OF RURAL DEVELOPMENT

Thrust of development policies being pursued would have far reaching repercussions on rural development planning in the years to come. Strategy for agriculture development in the Eighth Plan aims at sustaining the improvements in productivity and production to meet the increasing demand of the growing population. Accelerated growth is to be brought about in areas which have relatively lower growth. Labour absorption capacity of agriculture is relatively low. About 2.5 per cent growth of agricultural production absorbs about 1 per cent of additional work force. Hence special efforts would required to be made to direct the surplus labour in agro-industries, agro-processing and other activities in the secondary and tertiary sector. Efforts would have to be mounted to give a fillip to the production of fruits, vegetables, milk and meat for being processed in units established including those in rural areas. All these will lead to a greater change in rural structure.

The liberalisation of economic policies and recent changes in industrial policy with deregulation and lesser control have thrown open opportunities for a rapid phase of expansion of the agro-based industries particularly the processing units. Proper post-harvest technology in the sphere of preservation, storage, transport, processing and export would enhance the scope for employment in not only the primary sector but also in the secondary and tertiary sector and would bring about a significant change in rural economy. Eighth Plan laid down special thrust on building up of rural infrastructure essential for a more sustained employment and development such as all weather roads, minor irrigation works and water harvesting structures; soil conservation and social forestry schemes; basic health and education facilities, etc.

Planning and implementation of the rural development programs are required to enable greater self-help by the people and their participation in programs through *Panchayati Raj* institutions. A high degree of convergence could be attempted in a district by integration of the poverty alleviation programs, the area development programs and sectoral schemes. Eighth Plan emphasised that by taking district as a unit of planning, a District Plan would need to be prepared considering the physical and human endowments of that area and the felt needs of the people in consonance with availability of funds. Projects and schemes would be selected for implementation based on these Plans.

Utilisation, of electricity for productive purposes will be another major thrust for the rural electrification program in the Eighth Plan. Rural electrification would be closely coordinated with the rural industries program including agro-based industries program. Electrification of small, village and cottage industry units in selected growth centers is to be taken up in each state. The traditional forms of transport in rural areas would continue to be on the scene for the foreseeable future. The intermediate mode of transport with innovative forms would need to be encouraged to improve mobility and transport efficiency in the rural areas. The postal system would be transformed into a modern one with necessary technological inputs. Emphasis will also be laid on upgrading estate management and expansion of postal network to rural areas not yet having postal facilities. Accessibility to telephones would be ensured by providing a telephone in all the *gram panchayats*. By the turn of the century about two-thirds of total villages would be covered by telephone facility. Primary school or alternatives to primary schools like non-form centers, etc., would be provided to every child within a walking distance of one kilometer with suitable adjustments for special cases. Basic infrastructure facilities would be expanded in rural and urban areas in order to improve overall environment of habitat and enable appropriate conditions for the majority of the household to have access to housing.

In the 73rd and 74th Constitution Amendment Acts, District Planning has been placed on sound and scientific footing. The article 243-B of 73rd Constitution Amendment Act suggests that it shall be mandatory for all the States (except a few areas in North East) to constitute *Panchayats* at the village, intermediate and district levels in accordance with the provision of the Act. The important features of the Act is that the *Panchayat* may be endowed with such powers and authority to function as institution of self government and may have powers with respect to (i) preparation of Plans for economic development and social justice, and ii) the implementation of schemes for economic development and social justice as may be entrusted to them including those listed in Eleventh schedule. In all, 29 items have been listed in Eleventh Schedule which are directly related to rural development. They include agriculture extension program land improvement and soil conservation, minor irrigation and watershed management, animal husbandry and fisheries, social and farm forestry, cottage and small scale industry, rural housing and drinking water, fuel and fodder minor roads and other means of communication, rural electrification and non-conventional energy sources, poverty alleviation programs, primary and secondary, vocational and non-formal education, libraries, and cultural activities, markets and fairs, health, sanitation, and family welfare, social welfare of weaker sections, and public distribution system.

Although the schemes enumerated above form part of the major sectors of development normally included in the State Plans, the pertinent question is of deciding the components of the sector which the state government should deal with and those that are to be handled by the local level by the *Panchayats*. Obviously lower level functions would be performed by the *Panchayats* whereas higher level functions shall be the responsibility of the state government. The State Finance Commission constituted under the provision of the Act are reviewing the financial position and may suggest the principles for financial allocation between the State and the *Panchayats* which will go a long way in implementing the schemes identified for *Panchayats*.

All such schemes cannot be conceived in isolation rather it should form part of the spatio economic Development Plan at the district level in order to achieve better results. The 74th Constitution Amendment Act relating to municipalities provides for Constitution of District Planning Committee which will consolidate the plans prepared by the *Panchayats* and the municipalities in the district and prepare a draft Development Plan for the district as a whole. The draft Plan shall have regard to:

- Matters of common interest between the *Panchayats* and municipalities including spatial Planning, sharing of water and other physical and natural resources, the integrated development of infrastructure and environment conservation;
- The extent and type of available resources whether financial or otherwise; and
- Consult such institutions and organizations as the Governor may specify.

Thus, the 73rd and 74th Constitution Amendment Acts have added new dimensions in rural development planning by revitalising the concept of district planning and rural urban continuum.

6. ISSUES AND IMPERATIVES

In order to place rural development planning on a firm footing it would be essential to integrate the rural-urban development within a spatial development frame drawn at district level. In the emerging scenario the major thrust of rural development should continue to be on (i) growth, (ii) employment, (iii) social justice, iv) spatial coordination, and (v) quality of life. The emphasis should be on optimum utilisation of natural resources and increasing the productive efficiency to attain the desired growth. Generation of additional employment in rural areas should be effected more through diversification of rural occupations. The objective of social justice is of critical, importance in rural areas and it calls for minimisation of levels of inequality between various social classes, rural and urban areas, backward and developed regions by bringing up population above the poverty line. Under the spatial objective rural-urban continuum is required to be established by considering forward and backward linkages between various size of settlements. The quality of life is related to the availability of minimum basic facilities and extension of social and welfare services. It is thus imperative that rural development should take into account all the above parameters and the approach followed for the purpose and should attempt at integration and coordination of various objectives through the plans, programs and policies that are formulated and implemented for the promotion of rural, development.

The report of the Rural-Urban Relationship Committee (1966) deliberated on rural-urban relations and the dichotomy that has developed between these two sectors. The committee suggested that rural and urban should be treated as an integral part of one organism requiring equal attention rather than two distinct entities. It is necessary to develop a sound course of action which will progressively eliminate the existing differences in approach and treatment. Model for development of rural habitat should be the combination of rural and urban and organic one so that elements of development like technology, infrastructure, social service, management work in unison. The studies reveal that comparatively larger size of villages with a population of 5000 and above which are more than 8000 in number, have a larger number of urban occupations than the smaller villages. On the other hand urban centers of 5000 and below population have dominance of rural pattern than the larger towns and cities. Such situation indicates a larger possibility of rural-urban continuum and larger villages attaining the status of towns in near future.

The successive Five Year Plans have highlighted the need for improving the living conditions in rural areas to prevent accelerated exodus from the rural areas to the towns. Special attention in this regard should be given to the target group comprising rural artisans, agricultural workers, marginal farmers, landless labourers, etc., who have greater tendency to migrate to the cities and adding to the pool of urban poor. For this purpose integrated development plans for the entire village need to be formulated for harnessing the growth potentials of the village. Under integrate development, diverse aspects of development should mutually be integrated in terms of forward and backward linkages, temporal and spatial priorities with a view to achieving the total results. It should be a type of interactive planning to understand clearly the effect of each development aspect on the other with a scope for successive modifications if necessary. The effect of non - rural development on rural development should also be taken into account while formulating such plans for rural development. Viability of unit for such plan is very essential for success of planning for integrated rural development. To implement various target oriented schemes identification of various vulnerable groups on the basis of income, land holdings, occupation and class should also be attempted so that fruits of various programs and schemes could reach to the appropriate group.

Establishment of basic institutional mechanism of *Panchayati Raj* would be necessary to mobilise the local people for their participation in the development process and utilising various schemes and programs for enhancing the productivity and elimination of rural poverty. Voluntary and non-governmental organisations should be encouraged to take up the schemes for rural upliftment by associating themselves with the rural life and rural society. Plan for diversification of economic activity by reducing the dominance of agriculture should be drawn by these agencies in close collaboration with local people.

Infrastructural facilities are to be provided in terms of transport and communication, energy and fuel, soil conservation, afforestation and minor irrigation, water supply and drainage, school health and community buildings markets places and storage and training in developmental skills covering both agriculture and non-agricultural activities. Priority in provision of infrastructure

should be given to central and service villages and for this purpose local resources both physical and human should be utilised to the fullest possible extent.

It would be imperative to prepare model Plans for sustainable rural habitat which could be replicated in various geographical and agro-climatic settings. Obviously, such Plans should be within the broader frame of District Plans but the concept of rural habitat planning so far missing in rural development programs and need to be taken up seriously. The requirements of rural habitat planning would differ from urban habitat planning but both need to be embedded in such a measure that continuity in system is ensured. Norms and planning standards for rural habitat planning are required to be worked out on priority so as to utilise the resources both physical and financial optimally and judiciously.

Variety of data on physical resources, human and economic aspects are the pre-requisites for preparing Integrated Rural Development Plans at various levels. Thus, there is a need to strengthen the data base not only at district level but in disaggregated form at lower level also for detailed analysis at intra-district level. Besides conventional methods data base could be greatly strengthened with the help of emerging techniques of aerial photography and remote sensing. A scheme for preparation of resource maps for the districts on the line of urban mapping scheme need to be initiated.

7. CONCLUSIONS

In the entire process of rural development planning, physical planner would have to play an immense role in formulation of District Plans, working out of development programs, rural habitat plans and establishing linkages between the planning and implementing agencies. He will also have a greater role in coordination, monitoring, and evaluation of the programs of development as part of District Plan. All this will require to reorient our attitude and approach towards area planning / regional planning both technically and academically to do full justice in tackling the gigantic problem of rural development planning.

REFERENCES

- Government of India, Ministry of Urban Development (1992) *The Constitution Seventy-Fourth Amendment Act*
Government of India, Ministry of Urban Development (1992) *The Constitution Seventy-Third Amendment Act*
Planning Commission, Eighth Five Year Plan - 1992-97.
Singh Hoshiar (1985) *Rural Development in India-Evaluative Studies on Policies and Programs*, Printwell Publishers, Jaipur.
Rao V.K. RV (1992) *Indian Economy : Emerging Challenge Vol.-II* Printwell, Jaipur.

16 | RURAL PLANNING AND DEVELOPMENT: ISSUES AND STRATEGIES

Abstract

Agricultural development in many cases, offer a good starting point not only because agriculture can sustain this basic function, but because it often produces raw materials which can become a basis for industrial activities and development of services within a rural area. Rural development thus, requires comprehensive and integrated planning. In fact Regional Planning, which is both integrative and comprehensive, would be more appropriate in tackling the complex rural problems, because the territory of India is strongly differentiated with respect to the spatial exploitation of natural resources, to human potential with its social and cultural characteristics, level of income, urban development and economic activity, particularly simultaneous existence of some modern and very backward sectors which display a different spatial pattern. The regional approach to not only rural areas but also to urban areas makes it possible to deal with the differentiated regions and their problems individually without losing the national perspective, and consequently, further development of each of them.

1. INTRODUCTION

Notwithstanding the fast pace of urbanization in the last few decades, India remains predominantly rural. Nearly, three-fourth of its population lives in rural areas. At the beginning of the century, there was about 212 million rural population and the total population was 89 percent. In 1991, this figure reached 629 million, the level, however, came down to 74 percent. The rates of rural population growth of 21.9 per cent during 1961-71; 19.3 per cent during 1971-81; and 20.1 per cent during 1981-91 have been lower than the total population growth rates of 24.8 per cent, 24.7 per cent, and 23.9 per cent for these decades; and much lower than the urban population growth rates of 38.2 per cent, 46.1 percent and 36.5 percent respectively. The rural population base is so large that even one per cent annual growth rate mean an annual addition of more than 12.5 million to the rural population of the country.

Since the urban population draws heavily on the rural resources for its food and raw material needs, the differential between rural and urban population growth becomes less meaningful in estimating the pressure on the rural resources. It is the total population which provides the real picture of increasing demands on the rural resources for food, fuel, fiber and other necessities of life.

2. RURAL POPULATION

Rural population is growing at different rates in the different states of the country. Two demographically distinct groups of states exist in the country (Table 1). The first group includes states where the population growth rate is slow (less than 2 %) and where living conditions are improving. The second group comprises of those states where the population growth rate is rapid (2 to more that 5 %) and living conditions are deteriorating or in imminent danger of becoming so.

Table 1: Rural Population Growth and Living Conditions by Group of States, 1991

Population Growth Rate	Group of States	Living Condition
With Slow Growth (less than 2 %)	Goa, Kerala, Tamil Nadu, Gujrat, Karnataka, Punjab, Orissa, Andhra Pradesh, Maharastra, Himachal Pradesh, Mizoram.	Improving
With Rapid Growth (2 to 5 %)	Nagaland, Sikkim, Meghalaya, Arunachal Pradesh, Tripura, Manipur, Rajasthan, Jammu & Kashmir, West Bengal, Haryana, Assam, Bihar, Uttar Pradesh, Madhya Pradesh.	Deteriorating

The aggregate rural population of states in the slow growth rate group was 261 million in 1991, recording an annual average growth of only 1.58 per cent; in absolute terms, an annual increase of about 3.56 million persons.

The rapid growth group contains 366 million people, accommodating more than 50 per cent of the rural population in the country. It is growing at 2.24 per cent per year. This means an annual population increase of 6.70 million, almost twice in the slow growth group.

The rural population of 628 million is distributed in 5.80 lakh rural settlements (1991) of different sizes. The states which have a very high percentage of rural population are Himachal Pradesh (91 %), Sikkim (91 %), Assam (89 %), Arunachal Pradesh (87 %), Bihar (87 %), Orissa (87 %), Tripura (85 %), Nagaland (83 %), Meghalaya (81 %), and Uttar Pradesh (80 %). Rural population growth has a bearing on land man ratio of the country.

3. RURAL LAND

Fast growing rural population with little or no increase or even decline in arable land has been exerting continuous pressure on land. Man-land ratio is continuously declining. Average availability of land for rural population declined from 0.49 hectare in 1951 to 0.36 hectare in 1971 and to 0.26 hectare per capita in 1991. This was mainly because total arable land increased slowly relative to a rapid rural population increase in the country. The trend during the period 1951-91 may be seen from (Table 2).

Table 2: Trends of Arable Land Increase and Rural Population (1951 - 1991)

Year	Rural Population (in million)	Percentage growth in rural population.	Arable land (million hectares)	Percentage growth in arable land	Average availability of land for rural population, (hectare per capita)
1951	298.6	-	146.87		0.49
1961	360.3	20.16	156.02	6.23	0.43
1971	439.0	21.84	160.15	2.65	0.36
1981	523.9	19.32	164.75	2.87	0.31
1991	628.7	20.00	165.64	0.54	0.26

Source: 1. Census of India.

2. Agricultural statistics - At a Glance, Directorate of Economic and statistics, Department of Agriculture and cooperation, Ministry of Agriculture, Government of India, 1995.

This implies that there is a secular trend of an ever-increasing number of persons earning their livelihood from the same land base, often leading to improper husbandry practices to increase productivity, such as using inputs in improper doses, mono-cropping (resulting in soil exhaustion) and loss of crop biodiversity.

Against this national trend in land-man ratio, the states of the country may be divided in three groups (Table 3).

Table 3: Arable Land Versus Rural Population, 1971 -1991

Group		States
1.	States with high increase in arable land (16 % to 120 %) along with increase in rural population - (26 % to 115 %).	Mizoram, Nagaland, and Meghalaya.
2.	States with marginal increase in arable land (0.78 % to 14.39 %) but with large increase in rural population - (17.92 % to 94.27 %).	Assam, Goa, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, and Uttar Pradesh.
3.	States with negative growth in arable land - 40.58 % to - 1.16 % along with increase in rural population (19.78 % to 67.46 %).	Andhra Pradesh, Arunachal Pradesh, Bihar, Gujarat, Kerala, Orissa, and West Bengal.

In the first group of States are Mizoram, Nagaland and Meghalaya in the North-Eastern Region where agricultural land increased between 16.20 per cent to 120 per cent during the 1971-91 period. However, rapid growth of rural population in these states prevented significant gains in per capita availability of land. In the second group, there are many states where the small increases in arable land (from 0.78 per cent to 14.39 per cent) have been negated by the much larger increase in rural population. In the third group of states, comprises Andhra Pradesh, Arunachal Pradesh, Bihar, Gujarat, Kerala, Orissa and West Bengal, where arable land decrease was aggravated by increase in rural population, in case of Manipur, there was neither increase nor decrease in arable land during the last 20 years period but the increase in population (43 %) has resulted in reduction of arable land from 0.15 hectare to 0.11 hectare.

4. GROWING RURAL LANDLESSNESS

Fast growing population with small or no increase or even decline in agricultural land per head have also resulted in growing rural landlessness, either through loss of ownership or through loss of tenancy. India has 74.6 million landless rural population in 1991. This was larger than the total population of France. Landlessness in India will continue to increase even at much faster rate.

The distribution of operational holdings and area operated by categories of holdings for all social groups in 1990-91 is given in Table 4. The operated area in 1990-91 was 165.6 million hectares which increased marginally from 164.6 million hectares in 1985-86. The marginal holdings (below 1 ha), which accounted for about 59 per cent of the total number of holdings in the country had share of only a little over 14.9 per cent in total area operated in 1990-91. The small holdings (1 to 2 ha), which accounted for 19 per cent of the total number of holdings, had

Table 4: Distribution of Operational Holdings and Area Operated 1990-91

Category of holdings.	No. of Operational holdings (million).	Percentage in relation to total holdings.	Area Operated (million ha)	Percentage in relation to total operational area.	Average size of holdings category wise (in hectares)
Marginal (Below 1 ha)	62.11	59.0	24.62	14.9	0.40
Small (1 to 2 ha)	19.96	19.0	28.70	17.3	1.44
Semi-medium (2 to 4 ha)	13.91	13.2	38.35	23.2	2.76
Medium (4 to 10 ha)	7.63	7.2	45.05	27.2	5.90
Large (10 ha and above)	1.67	1.66	28.90	17.4	17.33
Total	105.28	100.00	165.62	100.00	1.57

Source: Based on Information given in Agricultural Census 1990-91, Ministry of Agriculture, Government of India.

a share of only 17.3 per cent of the total area operated. Thus, the total number of marginal and small holdings, which accounted for 78 per cent of the total holdings in the country in 1990-91, had a share of 32.2 per cent in the total area operated. On the contrary, the large holdings, which accounted for only 1.6 per cent of the total number has a share of little over 17.4 per cent in the total area operated.

The average size of holdings in the marginal group of farmers, as per 1990-91 agricultural census, is 0.40 which is not enough to support a family even when intensively farmed while in the small farmers group, the average size of holdings is around 1.40 hectares, which is not usually enough to provide an adequate standard of living.

In such situation, where already divided holdings can not be subdivided further, population growth translates into the landlessness that feeds unemployment and worsens income distribution.

An additional cause of increasing landlessness is increasing concentration of land ownership. This has occurred partly as a result of the relatively wealthy being able to practice high input, intensive agriculture. Their productivity, competitiveness and wealth are thereby increased, enabling further land acquisition. The rural poor consequently become landless and move into urban areas or into marginal rural land. An important consequence of increasing landlessness is the growth in the number of the rural poor.

5. RURAL POVERTY

Rural India is largely poor. Despite a decline in the percentage of the rural population, the number of the rural poor increased, chiefly because efforts to reduce the rate of growth

of population and the programs aiming at mitigating rural poverty have been only partially successful. Planning Commission's estimate of the rural poor is about 200 million which is 30 % of the rural population below the poverty line (Eighth Plan).

The incidence of poverty in the rural areas is not uniform. Certain areas and pockets have a larger concentration requiring supplemental efforts even with the limited resources. As per the 25th and 38th Round of the National Sample Survey (1988), Bihar (61.5 %), West Bengal (57.6 %), Kerala (49.2 %), Madhya Pradesh (48.4 %), Tamil Nadu (46.6 %), Orissa (46.0 %), had a very high percentage of rural poor, whereas the states which had lower incidence of rural poor, were Punjab (3.7 %), Haryana (8.4 %), Himachal Pradesh (14.2 %) and Rajasthan (25.6 %).

The poverty of the rural population has far-reaching influences on farming systems, on the ability of small agricultural producers to modernize their production techniques and to raise their productivity significantly. Poverty dictates farmers' behavior both directly and indirectly. Directly it indicates that the harvest, i.e. the marketable surplus and often more than that, must be sold immediately when prices are low. Cash needs and often debts have no other choice. Moreover, farm-storage facilities are usually inadequate. A lion's share of total income is spent on immediate consumption needs, and lack of cash often induces the necessity for loans, both for productive and consumption purposes. This easily leads to a spiral of debts from which there is no escape, and share cropping or even total landlessness is the inevitable outcome. Insufficient agricultural income forces many peasants to look for additional sources of income, which then constitutes an essential part of total household earnings. At the same time they hamper farm modernization because of their limiting effect on labour supply and farm management. Most peasants simply have no cash to pay for modern inputs, while credits are normally, perhaps rightly, considered to be too great a risk for commercial banks and other credit institutions. Government organized credit schemes often suffer from default in repayment of loans.

The indirect consequences of poverty are no less severe. The low technical level in peasant farming determines peasant's capabilities to exert influence on his production environment. Usually, therefore, the peasant adapts to the physical environment rather than controlling it. As a consequence, he must devote a great deal of his time and land to subsistence production which restricts possibilities for commercial production. In this situation, population growth and attendant excessive fragmentations easily lead to a progressive worsening of economic conditions.

Rural society is essentially characterized by the dominance of land, land use and land relations, the low level of productivity, the large extent of underemployment and unemployment, and generally the absence of that measure of natural and human resource development as will make it responsive to the development stimulus. Of special relevance to rural tertiary occupations, a pronounced unevenness in the distribution of productive assets and a tendency for the perpetuation of inequality because of the division of rural society into noncompeting economic and social groups.

6. RURAL DEVELOPMENT EFFORTS

Rural development did not occupy a high priority in the colonial administration. The recommendations of the Famine Commissions of 1880, 1898 and 1901 formed the corner stones for rural development policy of British India. The Commission of 1880 observed that

“it is the improvement of the internal communications and the removal of all obstructions to the free course of trade, accompanied by extension of irrigation in suitable locations and on improved agriculture that we must look for obtaining security in future against disastrous failures in food supply”. Thus, rural development was linked with agriculture and allied sectors, and infrastructure development. The Commission of 1901 emphasized the role of agriculture department for the improvement of agriculture, and establishment of cooperative credit societies as agencies of welfare. The British Government presumed that no improvement in the economic condition of the rural poor, particularly the farmers, was possible without a drastic change in their outlook for which the initiative should be taken by themselves and not by the government. As a result, improved agronomic practices remained confined to research and demonstration centers and few selected areas in the country and there was no transfer of technology to the rural areas.

However, during the first two decades of the present century, several attempts were made to improve the rural sector. Cooperative societies and agriculture department were established, laws were enacted to improve agriculture, and the Royal Commission on Agriculture was appointed. In the 1930s, Departments of Rural Development were established at various provinces / states like Bombay, Bengal, Baroda and Mysore. These department were keen on improving agricultural techniques, and providing better sanitation, education and medical facilities. Later, several programs such as the Tagore’s Sriniketan¹, Spencer Hatch’s Martandam Project², Baroda Program³, Gurgaon Project, initiated by F.L. Brayne⁴, the Firke Program⁵, and Gandhiji’s Sevagram⁶ were launched in various parts of the country. However, the success of these programs remained confined to the project areas, and no spread effect was observed in other parts of the country.

With the advent of independence in 1947, the Government of India evinced keen interest in rural development programs. Since then a large number of attempts have been made to improve the prevailing conditions of the rural population by developing necessary infrastructures as well as implementing specific rural development programs.

1 In 1920 Rabindranath Tagore laid the foundation of the Sriniketan Institute for Rural Reconstruction and formulated a program for the all-round improvement in the villages of his zamindari with the objective of studying rural problems and of helping the villagers to develop agriculture, improving the livesotck, formulation of cooperative and improving village sanitation, etc.

2 In 1921 Dr. Spencer Hatch of the Y.M.C.A. set up a project at Martandam, 40 km south of Trivandrum, with the objective that the organization of the Y.M.C.A. should work in the village to eliminate poverty.

3 A comprehensive program of rural reconstruction, covering the various aspects of rural life to self-help and self-reliance, was prepared and implemented in the Baroda State in 1932.

4 Dr. M.L. Brayne, the Collector of Gurgaon District, conceived the rural development scheme in 1927. The contents of this program were as comprehensive as those of the Integrated Rural Development Program.

5 The Firka Development of Madras, launched in 1946 in 34 Firkas and later extended to fifty Firkas in 1950, was a government scheme. The short-term objectives of the scheme were to develop basic amenities and institutional framework for carrying out communication, water supply, sanitation projects and formation of panchayats and cooperatives. The long-term objectives were to attain self-sufficiency in food, clothing, shelter, development of agriculture, animal husbandry, khadi and cottage industries.

6 Gandhiji started his rural reconstruction activities in Sevagram near Wardha to implement his ideas of constructive programs which included items such as the use of khadi, promotion of village industries, basic backward classes, the welfare of women, etc.

7. DEVELOPMENT OF INFRASTRUCTURE

For the development of both agriculture and the rural economy, the necessary infrastructure like expansion of irrigation, supply of electricity to rural areas, creation of appropriate institutions to provide rural credit, development of regulated markets, development of transport, and communication needs to be given a top priority. Accordingly, efforts were made to create and expand these facilities after independence.

7.1 Irrigation

To increase irrigation facilities, the national Five Year Plans have made substantial investment in major, medium and minor irrigation projects all over the country. With this sustained and systematic development, irrigation potential has increased from 22.6 million hectares during the pre-plan period to about 81.2 million hectares at the end of 1991-92. Against this, the irrigation potential utilization at the end of 1991-92 was 73.1 million hectares. Net sown area increased from 1187.5 lakh hectares in 1951-52 to 1396.2 lakh hectares in 1989-90. All these efforts have no doubt yielded fruits by increasing the net area under irrigation which was hardly about 17.6 per cent of the net area sown in 1950-51 to about 28 per cent in 1985-86. At the national level the percentage of irrigated areas looks impressive, but statewide distribution of the irrigated area differ considerably from state to state, partly because of inter-state disparity in the distribution of water resources, particularly perennial rivers. India has not yet fully exploited its entire irrigation potential which is estimated to be around 128 million hectares.

7.2 Electricity

Next to irrigation, the focus was on the supply of electricity to rural areas, particularly for agricultural operations. It was thought that the supply of electricity to rural areas would not only provide energy for irrigation purpose but also would usher in an era of modernization. This was considered as an important step towards the introduction of technology into the tradition-bound rural economy. In 1950-51, power consumption in KWs per 1000 hectares of gross cropped area was only 1.5 which increased to almost 80 in 1984-85. About 4.88 lakh villages have been electrified and about 96 lakh pump sets energized, representing 84 per cent of the total villages (1990-91). This is a remarkable achievement considering the vastness of the country and the high capital-output ratio involved in the generation and distribution of electricity. Here again, the inter-state disparity in power consumption varies substantially, the highest being in Andhra Pradesh and Tamil Nadu, the lowest in Bihar, Orissa and Rajasthan. In view of this, the Integrated Rural Energy Program (IREP) was developed as a plan scheme in the Seventh Plan on the basis of an experience of a pilot rural energy planning exercise taken up in the Sixth Plan. During the Eighth Plan, the IREP has focused on (i) the provision of energy for meeting the basic needs of working, heating and lighting, especially, for the weaker section, by utilizing locally available energy resources to the extent possible, and (ii) development of energy for sustainable agricultural production as well as promoting sustainable rural development activities.

7.3 Rural Credit

In order to alleviate the exploitation of rural farmers by the rural money lenders, the Reserve Bank of India (RBI) was asked to intervene in the rural credit scene and develop appropriate institutions to provide rural credit. The Reserve Bank of India established three agricultural re-

finance funds, namely, Long-term Operations, Stabilization and Relief, and Guarantee Funds in order to re-finance the cooperative banks and land mortgage banks at the state levels. Commercial banks were made to advance a minimum proportion of their credit to agriculture as priority sector lending. During the Sixth Plan period the National Bank for Agriculture and Rural Development (NABARD), was created by transferring the re-financing funds from RBI to provide re-financing facilities to the state level cooperative institutions. As a result of all these efforts, the dependence of the rural economy on the rural money-lenders has come down by almost 50 percent. Today, the country has what is known as a multi-agency approach to providing rural credit. This includes cooperative credit institutions, commercial banks, regional rural banks, and other credit institutions. All the nationalized commercial banks have been asked to identify districts in the form of lead bank districts and adopt those for financing agriculture.

The development of regulated markets is another important infrastructural facility which has helped in elimination of exploitation of the poor farmers by middlemen, particularly the trader-cum-money lender. Several state governments in India have established regulated markets by enacting legislation. These markets provide protection to the farmers from some of the malpractices though they have not been totally eliminated.

7.4 Agricultural Research

Extensive agricultural research encouraged by the Government of India, in the field of agricultural and rural industries has contributed substantially in bringing about an increase in productivity by embracing modern practices of agriculture such as the use of modern equipments.

7.5 Transport and Communication

Today rural areas of the country are opened up by the network of railways and roadways. This transport development has helped in the movement of goods and passengers. Rural roads have been widely developed, but, considering the vastness of the country, the quality of the roads still remains much to be desired. The priority for rural road development in the Eighth Plan is (i) linking of all villages which a population of 1,000 and above on the basis 1981 census, and (ii) special efforts to accelerate village connectivity in respect of backward regions and tribal areas.

8. PROGRAMS OF RURAL DEVELOPMENT

With the twin objectives of the development of the rural economy and improvement of living conditions of the people in the rural areas, a number of projects have been implemented during the last 43 years. The first in the series, was the Community Development Program (CDP) launched by the Government of India in 1952. As a part of the First Five Year Plan, it aimed at transforming the traditional way of living of the rural communities and assisting people to improve their way of life.

Subsequently, another program, called National Extension Service (NES), was launched in 1953. CDP was taken up in all fields of rural development, whereas NES was designed to provide basic and essential staff with limited funds. The NES blocks were subsequently converted to CDP blocks. However, CDP was expanded phenomenally and now covers all the rural areas (5,774 blocks) in the country and includes agricultural activities, rural communication, education, health, training, social welfare, a supplementary employment program and housing. The CDP

included virtually everything that one can think of for developing rural areas, it was soon realized that this program did not have much impact on the development of rural areas mainly because it became, by and large, a government initiative, although it was supposed to be implemented with the participation of the rural community. Once the government controlled the CDP by appointing field level staff, it became a part of the revenue department. Besides, the CDP program could not muster enough resources; and the limited resources which were available were spread too thinly all over the country resulting in inadequate thrust and sometimes wastage. Though the CDP was conceived as a pilot project, it became a national program, thereby defeating the original purpose of experimenting with it in a very limited area.

Important changes were introduced in the Community Development Program after 1960. The first major shift was aimed at increasing agricultural production. This led to the Intensive Agricultural District Program (IADP, 1960); Intensive Agricultural Areas Program (IAAP, 1964), and High Yielding Varieties Program (HYVP, 1966-67). These Programs were conceived mainly as crash programs for increasing food grains output. For this purpose high production potential districts, encompassing all the infrastructural facilities, including irrigation, were selected. Thus, the areas which had better endowments in term of land and water received more attention; farmers who possessed large holdings and financial resources, benefited from these programs. This process of development, however, left the areas with poor resource endowment and other essential infrastructural facilities lagging far behind. Small and marginal farmers did not benefit much on account of inadequate resources.

The IADP however, achieved considerable success within its narrow objectives which is evident from the rapid increase in the production of food grains. It is this program which ultimately paved the way for the green revolution which turned the historically food grains deficit country till the 1970 into a surplus and a marginally exporting country in the 1980s.

The IADP in its approach was very different from the CDP. It employed the concentration principle in deploying resources as opposed to the equity criterion used in CDP, where the limited resources were spread over the country

It was widely thought that program of development (CDP, IADP, IAAP, HYAP) would raise the living conditions of the poor through the trickle down process, that agricultural growth without major institutional reform, will alleviate poverty. But soon it was realized that the failure of the 'trickle down' process, coupled with unhampered growth of population increased the number of poor and unemployed in the rural areas. Over and above, this, the regional disparities continued to widen, creating the problem of political protests from the backward regions, poor people and the unemployed called for immediate solution and, therefore, in the Fourth Five Year Plan (1969-74), a new strategy of poverty eradication - known as direct attack on poverty - was adopted. Under this strategy, specific poverty eradication programs for target groups and specific areas were started. Since 1970s, these schemes have passed through a number of phases and ultimately settled down to two broad types, namely, self-employment programs (SFDA, MFAL, DPAP-TRYSEM, DNCRA) and wage-employment (NREP, RELGP).

The Fourth Plan showed greater awareness of the need to alleviate poverty by direct means. It identified that the poor comprised the landless agricultural labourers, small and marginal farmers

and village artisans. It was also noted that scheduled castes and scheduled tribes constitute the principal segment of the poor. The Plan also noted that there were backward areas located mainly forest areas, etc. Keeping this in mind, specific poverty eradication programs for target groups and specific areas were started. Important programs were Small Farmers Development Agency (SFDA), program for Marginal Farmers and Agricultural Labourers (MFAL), and Drought-prone Area Program (DPAP). These beneficiaries-oriented programs, launched between 1969-70 to 1971-71, were conceived to help the small farmers (farmers with holdings between 1 to 1 hectare), marginal farmers (land below 1 hectare) and agricultural labourers, farmers in tribal areas, dry areas and drought-prone areas in raising their income level. This was to be achieved by helping them to adopt improved agricultural technology; to acquire means of increasing agricultural production like minor irrigation sources; and to diversify their farm economy through subsidiary activities like animal husbandry, dairying, horticulture, etc.

The two schemes, SFDA and MFAL, were merged into a single program during the Fifth Plan period as recommended by the National Commission on Agriculture in 1973. The basic approach of the merged program was to implement intensive agriculture, multiple cropping, application of the HYV seeds, fertilizers, minor irrigation, etc., for the identified beneficiaries with special emphasis on dry farming practices and better management techniques.

DPAP - an Integrated Area Development program with the objective of developing the land, water, livestock and human resources of the areas -in fact, an enlarged and redesignated version of the earlier Rural Works Program (RWP), started in 1970-71 in areas chronically affected by drought. The scope of RWP was enlarged because it was thought that a more rural works program will not go a long way to solve the problems for these areas and to mitigate drought conditions. The objective was to promote more productive dry land agriculture by better soil and moisture conservation, more scientific use of water resources, afforestation, and livestock development through development of fodder and pasture resource and in the long run to restore the ecological balance. DPAP cover 615 blocks of 91 districts in 13 States.

These initiatives taken during the Fourth Five Year Plan, have been continued since, by adding, reformulating and re-organizing their implementation processes. Today, there are about twenty such special programs intended to alleviate rural poverty and to promote the development of backward areas. In all these schemes, the main aim is to provide employment opportunities through projects and housing. The most important program of the Fifth Five Year Plan (1974-79) was the Minimum Needs Program (MNP). It has two distinct sets of activities. One set comprises human resource development activities covering elementary and adult education, health, drinking water supply, nutrition and rural housing. Another set of activities relates to area development like rural roads and village electrification. Various components of MNP seek to enhance the impact of both beneficiary-oriented and area development programs of rural development. While MNP increases the productive capacity of the community as a whole by indirect impact, the rural development programs improve the economic conditions of the individuals with a direct and personalized approach. All the programs, except the Environmental Improvement of Urban Slums, are designed to cater only to rural needs.

Adult education was added during the Sixth Plan (1980-85). The list was further expanded in the Seventh Plan with three more components, namely, rural domestic energy, rural sanitation and public distribution system.

Training of Rural Youth for Self-Employment (TRYSEM) was introduced in 1979 to provide technical skills to rural youth belonging to families below the poverty line. Its aim was to enable the rural youth to take up self-employment ventures in different spheres across sectors by giving them assistance under IRDP. Later in 1987, the scope of the program was enlarged to improve wage employment also for the trained beneficiaries.

Development of Women and Children in Rural Areas (DWCRA) - an exclusive scheme for women - was launched in 1982-83, as a pilot project in 50 districts. Under DWCRA, a group of women were granted assistance to take up viable economic activities with Rs. 15,000 as a one-time grant to be used as a revolving fund. In the Seventh Plan, it was extended to more districts such that, at the end of the Plan period, it was in operation in 161 districts.

Among the wage-employment programs, the National Rural Employment Programs (NREP), and Rural Landless Guarantee Employment Program (RLGEP), are important ones. The NREP aims at:

- Generating employment opportunities in the rural areas;
- Creating durable community assets in the process of strengthening rural infrastructure, and
- Improving the nutritional status and living standards of the rural poor.

The basic objective of RLGEP are (a) to improve and expand employment opportunities for the rural landless with a view to providing guarantee of employment to at the least one member of every landless labour family up to 100 days in a year, and (b) creation of durable assets for strengthening rural infrastructure leading to rapid growth of rural economy.

In 1980, the NREP and the RLGEP were merged into a single rural wage employment program called the Jawahar Rozgar Yojana (JRY). The primary objective of the program is generation of additional employment on productive works which would either be sustained benefit to the poor or contribute to the creation of rural infrastructure. Under this program, Center's contribution is 80 per cent and 20 per cent is the state's share. JRY is being implemented in all villages in the country.

Of the total allocations at the state level, six per cent of the total resources are earmarked for housing under the Indira Awas Yojana (IAY) which are allotted to the scheduled castes and scheduled tribes and forced bonded labour. In addition, 20 per cent are earmarked for million wells free of cost to poor SC / STs farmers. Twenty per cent of the remaining funds are retained at the district level and 80 per cent are allotted to village *panchayats*. The responsibility of implementing the Jawahar Rozgar Yojana in respect of district share of funds is that of DRDA/*Zila Parishad*, but at the village level it is that of the *Gram Panchayat*.

During 1989-90 and 1990-91, road construction was the primary activity, while minor irrigation, housing, construction of schools and community buildings, wells and social forestry were the other sectors where Jawahar Rozgar Yojana funds flowed.

Some state governments too are running their own special employment generation schemes. In this context, the Employment Guarantee Scheme (EGS) in Maharashtra under operation since 1972, and a special Employment Program in Gujarat need to be mentioned. The scheme in Maharashtra is intended to provide employment on productive work to the workers who are

willing to render unskilled manual works. In this way, it helps in reducing the incidence of unemployment, under-employment and poverty in rural areas. The scheme in Gujarat was introduced in 1990-91 under which two districts, Dang and Gandhinagar, were selected for achieving zero unemployment and in the remaining districts additional employment opportunities will be created in the rural areas.

During the Seventh Plan, the various rural development programs were planned and implemented by a single agency at the district level called the District Rural Development Agency (DRDA). The Committee, set up (1985) to review the existing administrative arrangements, reemphasized the need for decentralized planning at the district level and below. It opined that where *Zila Parishads* were in existence, rural development programs should be transferred to them. This would ensure participation of local representatives in planning and they in turn would reflect the needs and aspirations of the local people. Of course, that would also be accountable to the people they represent. In states, where *Zila Parishads* are not in existence the setting up of Districts Development Councils with government officer as a chief executive was suggested. In either case, it was envisaged that planning and implementation of sectoral activities would be decentralized and integrated into a unified activity, with horizontal coordination at the district level. Similarly, at the block level too, an Integrated Area Plan was imperative, based on availability of local skills and resources. However, no uniform pattern was adopted across the states. In 1989-90, the introduction of Jawahar Rozgar Yojana, wherein it was stipulated that the funds would be placed at the disposal of the village *panchayats*, marked a shift towards democratic decentralization with certain funds and powers vested in the Gram *Panchayats* for development.

The Integrated Rural Development Program (IRDP) is the central pillar of poverty eradication scheme since the Sixth Plan. It is the single largest poverty alleviation program. It covers all the community development blocks today. Though it was launched in 1978-79 in only 2,300 selected blocks in the country, it was extended to all the blocks from October 2, 1980. It aims at providing income generating assets for self-employment to the rural poor to eventually enable them to improve their income and rise above poverty line. It's targeted beneficiary groups are small and marginal farmers, agricultural and non-agricultural weaker sections like scheduled castes and scheduled tribes, who are below the poverty line. The IRDP employs the cluster approach for selecting villages for implementing various components of the program.

The Antayodya approach (village assembly of Gram Sabha) is used for selecting beneficiaries within the selected villages and a package approach is used for implementing the programs. The cluster approach ensures that the supporting infrastructure facilities are either readily available or can be made available at a relatively low cost. The Antayodya approach makes sure that the poorest of the poor are selected first and the package approach facilitates realization of the full benefits by the beneficiaries.

In this respect IRDP strategy represents a synthesis of various approaches which were tested and found effective in earlier rural development programs, especially IADP, SFDA and DPAP.

Table 5: Plan wise Outlays on Rural Development

Plan	Rupees (in crore)	Percentage to total Plan outlay (Public Sector)
Fifth Plan*	1, 193.00	3 04
Sixth Plan*	2, 800.00	4 04
Seventh Plan**	9, 074.22	5 04
Eighth Plan**	34, 425.36	7 93

Source: * *Draft Five year Plan, 1978-83, Government of India, Planning-Commission.*

** *Seventh and Eighth Five Year Plans, Government of India, Planning Commission.*

8.1 Plan Outlays on Rural Development

Plan wise outlays on rural development from Fifth Five Year Plan onward are given in Table 5. In the Eighth Plan, a substantial step-up has been made in the outlay on rural development from Rs. 9,074.22 crore in the Seventh Plan to Rs. 34,425.36 crore in the Eighth Plan.

9. AN OVERVIEW OF THE PAST RURAL DEVELOPMENT EFFORTS

Despite the high priority given in the successive plan to the development of the rural areas, the quality of life continues to be much below the desired levels, with continuing sharp disparities between rural and urban living conditions. Special employment programs like IRDP and JRY have succeeded in providing a certain quantum of employment to people and have led to the creation of some durable assets in the village. There is a perception that the achievements have not been commensurate with the resources spent on them.

As reported in the Eighth Five Year Plan (1992-97) document of the Planning Commission, about half the number of beneficiaries under the IRDP have over dues which raises doubts about their ability to come out of the debt syndrome. It is argued, is due to a low level of assistance which does not generate enough income to repay the loan and for subsistence. Banks are reluctant to raise the credit limit because of skepticism regarding the repayment capacity of the target groups. It is estimated that about one-third of them do not even have the original assets that was given to them. Even those beneficiaries who have generated sufficient additional income to cross the poverty line may relapse into the category of poor with additions to the family, loss of assets and non-viability of the activity chosen by them.

Similarly, under the JRY, as reported in the document, some employment is provided in the lean season and the supplementary income thus generated are critical for the survival of many poor families. But the wages earned under JRY are a very small proportion of the amount required to help them to cross the poverty line.

Under DWRCA, the results have not been satisfactory mainly because of lack of adequate investment and selection of unviable activities.

10. RURAL DEVELOPMENT CONCEPT

Rural development does not mean agricultural development alone. It also does not mean pumping money into the rural area to provide for basic human needs as a social welfare measure. It encompasses a spectrum of activities and human mobilization to make people stand on their own feet and break away from all the structural disabilities which chain them to the condition in which they live. Rural development involves not only a concept of the village, but also a view of rural society and its relationship at every point with the national economy as a whole,

ensuring, in the process, equality of social status, economic opportunity and participation of all sections and individuals in rural areas and achieving a level of development which would lift the rural community out of its present state of poverty and backwardness.

10.1 Objectives of Rural Development

As the World Bank stated, “rural development is a strategy designed to improve the economic and social life of . . . the rural poor . . . Since rural development is intended to reduce poverty, it must be clearly designed to increase production and raise productivity. It is concerned with the modernization and monetization of rural society, and with its transition from traditional isolation to integration with the national economy. The objectives of rural development, therefore, extend beyond any particular sector. They encompass improved productivity, increased employment as well as minimum acceptable levels of food, shelter, education and health”.

Agriculture will remain a principal economic activity in rural areas. In order to tap the agricultural potentials fully and to increase agricultural productivity, a coordinated approach at all levels is required. Irrigation facilities should be used judiciously and efficiently. An efficient marketing system is essential to accelerate the development of agriculture. The development of livestock on scientific lines will augment the production of livestock and its products. A good network of veterinary services is necessary to provide health care to animals. Transport facilities at village level should be strengthened for procurement of milk and other livestock products. For profitable development of fishery resources, important steps required are systematic survey of the resources, extension and expansion of marine fishing grounds, speeding up of the process of mechanization of fishing crafts, increase in fish seed production by expansion of the existing fish farms and construction of new fish farms, improvement in marketing of fish by provision of fish markets, adequate cold storages and ice plants, processing centers with modern facilities, well knit transport system linking producing centers with centers of consumption and improvement in the socio-economic condition of fishermen.

A carefully formulated and dispersed industrialization program, operating through a graduated hierarchy of centers would help to moderate and eventually perhaps check the endless drift to large cities. The fostering of industrial development in intermediate cities and towns and linking such a program to the surrounding rural area by promoting trade, etc., is the best way to bring benefits of modern industrialization to village and ensure a functional spatial organization. The broad objectives of industrial development in the rural areas may be to create non-agricultural employment for under and unemployed rural population in the area itself, to process local raw materials, to make full use of existing skills in the area, to provide essential inputs and consumer goods to farmers and other local people, and to help curb the flow of migrants to urban centers.

As a pre-condition to development, rural areas must acquire a certain level of infrastructures in the form of road and railways, storage and distribution facilities, electric power supply lines, communication and market networks, water supply facilities, etc. Admittedly, transport is necessary for overall economic development, but it is merely one means whereby the opportunity is created for economic development. In cases where the other means - technology, finance, human skills - are not available transport may have a negative effect or, at best, no effect at all. If progress is to be realized, the planning of transport must be accompanied by a whole range of complimentary activities. They are planned and selected with reference to well-defined

social, economic and political criteria and with some commitment to the implementation of complimentary activities. They are planned and selected with reference to well-defined social, economic and political criteria and with some commitment to the implementation of complimentary activities. Thus, the provision of extension services, health centers, schools, public transport and other facilities must be considered simultaneously, since together they will lead to the development of a given area or region. Further, the location of these facilities must, therefore, be properly determined at a very early stage of development. This can only be done within the framework of a comprehensive development scheme, where all the projects are evaluated in relation to other areas of the development process.

The poor quality of rural centers is a major bottleneck in rural development. The far from efficient provision of economic and social services hinders the progress of the rural masses. Sound planning of rural center can help to reduce the present income gap between urban and rural areas, thus contributing towards a better balance in urban-rural relationship.

11. APPROACH TO RURAL DEVELOPMENT

Rural development problem is of a complex nature. A piecemeal planning or project-by-project planning is not sufficient to tackle the problems of rural poverty. The landless and near landless, for instance, are more likely to become victims rather than recipients of increased agricultural productivity. The resulting rural exodus merely aggravates problems elsewhere and contributes to uncontrolled growth of the major urban centers. Moreover, and perhaps this is more pertinent observation that rural development should make a positive contribution towards national development.

Agricultural development in many cases, offer a good starting point. It is not only because agriculture can have a basic function, but also because it often produces raw materials which can become a basis for industrial activities and development of services within a rural area. Rural development thus requires comprehensive and integrative rural planning.

11.1 Regional Approach

Regional Planning, which is both integrative and comprehensive, would be more appropriate in tackling the complex rural problems. There are several reasons why the regional approach to rural development is crucial for a large country like India. The territory of the country is strongly differentiated with respect to the spatial exploitation of known natural resources, to human potential with its social and cultural characteristics, level of income, urban development and economic activity, particularly simultaneous existence of some modern and very backward sectors which display a different spatial pattern. The regional approach to development makes it possible to deal with the differentiated regions and their problems individually without losing the national perspective, and consequently, to apply the most effective measures for further development to each of them. Through the development of its individual regions, the entire national economy can be strengthened and better integrated into one viable entity. Regional Planning as spatial development planning, utilizes the natural and human resources, to the fullest extent for the enrichment of the quality of life of its population and distributes the gains of development among the regions and groups within the regions, thereby minimizes socio-economic imbalances and improves living conditions of the masses. Again, the elimination

of rural poverty connected with heavy unemployment and under-employment can be tackled at regional level owing to the limited mobility of population factors. It is within the regional labour markets that the characteristics of supply and a balance between them achieved.

Rural areas suffer a heavy migration of population to the major urban areas. But the urban areas cannot properly accommodate the influx of newcomers, leaving them in a state of misery in the sprawling towns. It cannot be overcome by each city separately but must be handled on a wider spatial basis which would include the surrounding agricultural areas where the migrants usually come from. The interrelation of urban and rural development is a crucial issue and any separation of these two aspects is artificial. This again stresses the importance of regional development as a basis for rationalizing and controlling the process of rapid urban sprawl.

The integration of rural areas into the national economy can only be achieved through key urban-rural linkages. These are the connections which provide the network needed to facilitate important flows, such as the movement of agricultural products into agro-processing centers, the distribution of agricultural inputs or the spread of innovations and new ideas from centers to their hinterlands. Several types of linkages exist, such as economic, physical, administrative and social.

A regional economy is organized around a system of human settlements which primarily serve as the organizational framework for providing economic and social service for the people at different levels. Economic services such as markets, financial institutions, professional services, etc., provided by settlement are part of the required infrastructure for the various economic activities to be developed in an area. Social services needed by the people may vary from community to community according to the level of social development, existing institutional structure and the occupational pattern. In, all cases, however, certain basic amenities and services are essentially needed for human living such as safe water supply, sanitation, housing, health, educational facilities, etc.

One of the important objectives of a regional plan is to evolve an improved pattern of urban and rural settlements in the region with a view to providing the basic economic services and community facilities required for the development of the region. The identification of nodal points, both existing and proposed, and assessment of the level of services and infrastructure available and needed in each of the settlements helps to determine the scope for economic activities at each of these centers. Thus, the benefits of planned development can be transmitted down to the lower hierarchy of settlement through spatial and locational interactions and inter-linkages among the higher and lower settlement; for example, service villages will take care of the most primary needs of population such as primary school, cooperative store, health clinic, etc., service towns should be within a distance of 15 km of any habitation, market towns located to provide the marketing facility within a radius of 25 km. Industrial growth points would have a minimum employment of 5,000 persons in manufacturing, industrial growth center would be essentially an agglomerate of a number of growth centers and growth point located close to each other. In evolving the system, maximum functional synchronization has to be achieved. Thus, a market town may also be an industrial growth point or growth center. An industrial growth point may also serve as a service town. Administrative functions of the appropriate level could be located in any of these towns. Thus, it will give an inter-dependent, well-knit and complimentary settlement pattern which will provide adequate economic services and community facilities at all levels.

13. CONCLUSIONS

Rural development, like national or regional development, is brought about by structural changes in many fields - in rural economy, in social and cultural attitudes of its inhabitants, in land use patterns, in the settlements system, institutional set-up and administrative capacities. All these changes require extensive period of time to be accomplished. Like regional development, rural development is also a long process, extending over periods from ten to fifteen and more years. This process can be broken down to shorter intervals which can be considered as consecutive stages of the long-term venture. Rural development, again, like regional development, cuts across all sectors of development and demands a coordinated approach to planning by way of which all interdependent aspects of development are simultaneously taken care of. Regional development planning, being an important instrument of this approach, will help to provide coordinated plans, programs and projects for rural development. The rural development plan, besides the spatial dimension, will also gain a longer time perspective, as regional planning usually stretches over a long term period (usually ten or twenty years). Being more social-oriented by virtue of its comprehensive character, regional approach to rural development will help in bringing the local development needs and possibilities to the attention of national authorities in consistent way and through regional planning the impact of the national development on the local economics can be rightly evaluated and the most appropriate action envisaged.

REFERENCES

- India, Planning Commission, Five Year Plans (First to Eighth).
- Town and Country Planning Organization (1982) *Regional Planning Efforts in India*. Self.
- United Nations (1972) *The United Nations Programs for Regional Development : An Introduction to Sub-National Planning*, published by the United Nations Institute for Training and Research, New York.
- United Nations (1979) *Economic and Social Commission for Asia and the Pacific, Guidelines for Rural Center Planning*, New York.
- United Nations (1990) *Economic and Social Commission for Asia and the Pacific, State of the Environment in Asia and the Pacific*, Bangkok, Thailand.
- Sharma, D.P. and Desai, V.V (1980) *Rural Economy of India*, New Delhi Vikas Publishing Housing.
- Singh Radha Raman (1982) *Studies in Regional Planning and Rural Development* Patna Associated Book Agency, .
- Gupta, M.M. (1982) *Regional Demographic Situation in India*. Regional Dimensions of India's Economic Development, Proceedings of Seminar held at Nainital.
- Misra, R.P. and Bhoosan, B.S. Rural (1981) *Development, National Policies and Experiences*. Vol. 4 UNCRD, *Regional Development Series*, Nagoya, Maruzen Asia.
- Edmonds, G.A. (1982) *Towards More Rational Rural Road Transport Planning*', International Labour Review. Vol. 121, No. 1, January-February.
- Qaiyum, A. Rural (1982) *Development Efforts in India*, *Institute of Town Planner*, India Journal, New Delhi, June, 1993, Vol. II No. (154).
- Sharma, Aruna and Rajgopal (1995) *Planning for Rural Development Administration*, Rawat Publications, Jaipur and New Delhi.
- Singh, Hoshiar (1995) *Administration of Rural Development in India*, Sterling Publishers, Private Limited, New Delhi.
- Jha, Ugra Mohan (1995) *Rural Development in India, Problems and Prospects (Edited)* Anmol Publications, Private Ltd., New Delhi.

17 | INTERFACE BETWEEN PLANNING EDUCATION AND INDUSTRY

Abstract

The economic progress of the country is deeply linked with the quality of manpower, accordingly in order to improve the capacity of the rural and urban local bodies, so as to prepare the plan for themselves, human resource development through town and country planning education is one of the most effective vehicle of transformation and change and is an essential element to improve the state of human settlements. However, with the increasing sphere of planning activities especially with the renewed emphasis in general on decentralized planning in the context of the Constitution (73rd and 74th) Amendment Acts and in the context of Twelfth Schedule appended to the Constitution in particular is a major step for refurbishing the functional domain of the urban local bodies. Accordingly, the functional domain of urban and rural local bodies need to be incorporated suitably in the course curriculum by the Planning Schools and other training institutions at central and state levels so as to achieve an interface between planning education and industry and also to build up the management capabilities of planning and development agencies / organizations at various levels.

1. INTRODUCTION

Industrial growth coupled with rapid urbanisation resulted in increasing realisation of the need for viewing urban development not merely as construction of houses or provision of water supply and other community facilities in an unrelated manner but to be seen in comprehensive and integrated manner in which each sector has a definite functional role to play. The Constitution (73rd and 74th) Amendment Acts, 1992 have further given a new dimension to rural and urban planning, which in fact is a pioneering step in the process of devolution of power to the people at the grass root level enabling the people to plan for themselves and participate in the decision making and planning process. It has laid down important provisions introducing spatial and environmental planning in the planning system at various levels, right from *Nagar Panchayats* to metropolitan regions and integrating the municipal and village plans with district plan and through them to the state and national plans. To meet this challenging task it is necessary to re-orient planning education to meet the emerging role of the town and country planners. The traditional top down approach to development planning is in the process of being substituted by bottom up planning to enable active participation of the local community.

The current economic policies of the government including liberalisation and structural adjustment has led to a major shift in the role of government from a provider to a facilitator. The economic progress of the country is deeply linked with the quality of manpower. To improve the capacity of the rural and urban local bodies, in order to prepare the plan for themselves, human resource development through town and country planning education is one of the most effective vehicle of transformation and change and is an essential element to improve the state of human settlements.

With the increasing sphere of planning activities specially with the renewed emphasis in general on decentralised planning in the context of the Constitution (73rd and 74th) Amendment Acts and in particular in the context of Twelfth Schedule (Article 243-W) of 74th Amendment which lays specific emphasis on: (a) urban planning including town planning; (b) regulation of land-use and

construction of buildings; (c) planning for economic and social development; (d) water supply for domestic, industrial and commercial purposes; (e) public health, sanitation, conservancy and solid waste management; (f) urban forestry, protection of the environment and promotion of ecological aspects; (g) slum improvement and upgradation; (h) urban poverty alleviation; and (i) provision of amenities and facilities such as parks, gardens, playgrounds; all this calls for technological advancement besides manifold increase in the training requirements in the coming years. The development of skill and manpower for better performance of new functions assigned to municipal councils and urban local bodies therefore, should be seen in proper perspective and has to be in tune with the need of urban and regional planning at various levels and accordingly town and country planning education is required to be re-oriented.

2. CHANGING DIMENSIONS OF PLANNING

In the late nineteenth and early, twentieth centuries, the scope of town planning was largely confined to the improvement of health and sanitary conditions as part of municipal functions. Later Improvement Trusts were set-up which dealt with town improvement schemes like housing, water supply, drainage, amenities and services, etc., in certain pockets of the towns in an unrelated manner. During this period, town planning activities were mainly taken up both under Improvement Trusts and also the Town Planning Acts as remedial measures in the form of remunerative and beautification schemes. Municipal engineers played the key role in such activities. In fact, 'Partition' is the dividing line which distinctly marked change in perspective and dimension of town planning. Immediately after 'Partition' when townships for rehabilitation of refugees were developed and general reconstruction and housing programs were taken up, town planning activities increased manifold and it was realised that the problems of town and country planning needed to be tackled in a comprehensive and coordinated manner. This clearly established the need for qualified professional planners having knowledge of comprehensive town planning equipped with latest planning technologies and techniques. Accordingly, action was taken to train more and more qualified town planners by imparting town and country planning education either locally or from abroad to meet the challenge.

The momentum in town planning activities was generated after the Third Five Year Plan when urbanisation was recognised as an important aspect in the process of economic and social development and the central government made provision of 100 per cent financial assistance for preparation of Master Plans for almost all the major cities and their surrounding areas. During this period, the Planning Commission also sponsored preparation of Regional Development Plans for rapidly developing resource and city regions. This provided the necessary impetus for enhancing the sphere of town planning in the country. Action was taken for enacting town planning legislation, setting up of Town Planning Departments in the states and union territories and augmentation of facilities in education and training in the field of town and country planning. In this way, the beginning of multi-disciplinary approach in various urban and regional planning exercises was made. Engineers, architects and social scientists also assisted town and country planning in a big way.

In the succeeding Five Year Plans emphasis has been mainly on balanced spatial distribution of economic activities, regional approach to the pattern of urban development, integrated urban development, improvement of infrastructure services (both economic and social) first in larger urban centers during the Fifth Plan and subsequently in the small and medium towns.

Physical planning activities would increase further with the growing population of the country, liberalisation of economy and devolution of planning functions to rural and urban local bodies. It is estimated that by 2001, the total population of India would be of the order of 100 crore and it may have the dubious distinction of being the most populous country in the world. It is likely that urban population of India in 2001 will be in the range of 34-35 crore having 40 cities with a million plus population with a large number of people living in slums, squatter and critically unserved areas. There will be over 3000 municipal bodies of various sizes. This clearly indicates that the task of urban and regional planning would be daunting in the foreseeable future and efforts will have to be made to find out solutions. Over the years, the emphasis in physical planning has been on improvement schemes, development plans and now on development planning and project planning. In Regional Plans also, emphasis has shifted from policy plans to action area plans and functional plans. From the Article 243-W of constitution Amendment Act, it is quite clear that it has provided for a much larger concept for planning than what is covered under the town planning acts. It has changed the planning concept from mere land use planning to development planning. Therefore, it is essential to equip the urban local bodies to handle such elaborate functions, in order to give a fair trial to this new role assigned to LBS by the Constitution Amendment Act, because today ULBs are mostly involved in day to day maintenance functions only.

3. EMERGING PRIORITIES

Urban and regional planning has come a long way and today it's importance is being felt at various levels. The need is to have implementable plans properly structured into projects and programs with physical and financial implications. In other words, stress needs to be given on developmental planning rather than development plans.

The planning and development efforts, besides helping in improving the physical infrastructure and socio-economic status of the towns and cities should also channelise urban growth in the country in a desired manner. This calls for taking comprehensive measures in the form of physical / spatial policies taking in to consideration urbanisation for development of sustainable human settlement system at national, sub-national, regional and sub-regional levels.

A number of rural development programs such as IRDP, NREP, MNP, JRY, etc., and urban development programs like IDSMT, UBS, EIUS, NRY Mega City, etc., are in operation, which are implemented in an adhoc and piecemeal manner and do not form part of the total development of the town / district. Recognising the fact that socio-economic programs undertaken for rural and urban development have an impact on the physical development of the area, it is necessary that district planning should be taken up more vigorously through integration of various programs in the background of potentialities and resources of the district in both rural and urban areas as emphasised in the Eighth Five Year Plan.

In conformity with the provisions of the Constitution (74th) Amendment Act, the District Planning Committees (DPCs) are to consolidate the plans prepared by the *gram panchayats*, *nagar panchayats* and the municipalities in the district and to prepare a draft Development Plan for the district as a whole. Besides, Metropolitan Planning Committees (MPCs) are also required to

prepare plan for the metropolitan areas falling under the jurisdiction of MPCs. In addition, the 12th Schedule appended to the Constitution is a major step for refurbishing the functional domain of the urban local bodies. Most of the functions which were hitherto withdrawn from the municipal bodies have now been restored to the local bodies by the 12th Schedule. It envisages to devolve functions relating to preparation of plans for economic development and social justice as well as for implementation of various development schemes. Similarly, the Constitution (73rd) Amendment Act, 1992 provides for creation of *panchayats* at village, intermediate and district levels for preparation of plans for economic development and social justice and other aspects included in the 11th Schedule which will have far reaching repercussions on rural and urban planning.

The preparation of plans have now been bestowed to the *Panchayats* and the municipalities, therefore, the manpower requirements and their training for the preparation of Plans would be enormous for which planning education needs to be reoriented to match the new task which needs to be performed by the town and country planners. Until now, experience has demonstrated that the local authorities did not take any initiatives, may be on account of organisational inadequacies and lack of financial support in undertaking this task. Article 243-ZB of the Constitution (74th) Amendment envisages setting up of DPCs and gives a reasonable inference that each local body, be it rural or urban by whatever name called, is expected to prepare a Plan for its area and draw up a phased program for economic and social development. This is a mandatory provision of the Constitution Amendment and would facilitate inter-action with municipal bodies and *Panchayati Raj* institutions, on important issues concerning rural urban interface like the fringe area of a town where urbanisation is taking place which may lie within the purview of *Panchayati Raj* institutions. Likewise, certain district roads maintained by *Zilla Parishad* may be passing through the municipal area. Similarly, the source of drinking water for the town may, in fact, lie outside the limit of the town and the disposal of waste as well. These are illustrative examples and many more such aspects would require an overall view of development of the district and allocation of investment between rural and urban institutions at the level of district as a whole.

The question of planning controls for regulating buildings in the peripheral areas surrounding major municipal areas may have special problems which may be vested with the rural institutions but having regard to future development of the area and its possible incorporation into main municipality at a later date, it may be necessary that the municipalities should also have a say in such building sanctions. Matters like extension of the municipal boundary necessitated by urban growth, the transition of a particular village *Panchayat* to the level of a *Nagar Panchayat*, etc., are questions which are best addressed by the DPC. Today, we have some form of district planning bodies in most of the states, but they are generally nominated and are not responsive to the people.

To keep pace with the advancement in technology, the emerging techniques of remote sensing, computer, informatics, GIS, etc., will be more in use in the coming decades as tools of planning. For applying these new techniques in planning practice, the skill of personnel working in the State Town Planning Departments is required to be upgraded. Besides, there is a need to re-orient the planning education to give adequate training of emerging innovative techniques, to the personal deployed in local bodies and town planning developments.

Planning and development of towns and cities was largely influenced by local considerations, while social and economic development was promoted on the basis of national goals and objectives.

This divergent approach continues even today in a large way. Contemporary, town and country planning in western countries not merely takes in to consideration physical development planning but also focus on the translation of economic and social development goals and objectives on land which is the principal platform for all human activities.

This clearly indicates that the task of physical planning would be enormous and complex in the years to come which calls for advance action in manpower training to tackle the increasing problems of rural and urban areas. Thus, a comprehensive approach in management of manpower training in consonance with growth perspective of towns and cities taking into account socio-economic well-being and rational utilisation of available resources is called for.

The existing models of planning education generally followed in various Planning Schools in the country is confined more or less, less in fact to theory subjects, projects and assignments and thesis. The theory subjects relate mainly to urban, regional and rural planning theories and processes; quantitative methods and analytical tools; components of settlements such as housing and transportation system, conservation of heritage, environmental and ecological aspects; planning legislation and information system and some problem areas. However, during a review of the various schools by ITPI it was noticed that the students have never been exposed to the problems of the town. They have never been taken to the Town and Country Planning Departments, Housing Boards, Development Authorities and other planning agencies. They are not even familiar with the working of these departments and once this product comes out, they are not found suitable for the industry / users where they are going to be employed. Students need to be exposed to these areas so as to appreciate and understand the problems by taking them to slums, shopping centers, residential areas, industrial areas, etc., these being laboratories of the planning.

Lately, emphasis is also being given on project formulation and evaluation techniques. It has however, been recognised that existing models of planning education are oriented more towards physical aspects of planning while in western countries the system has moved into a multi-disciplinary mould. This leads to isolation of physical planners from the main stream of planning and development process. Thus, it would be necessary that planning education is reoriented so as to form part of the mainstream of planning organisations and institutions engaged in formulation and implementation of development plans, policies, programs and projects.

The re-orientation of training of planners should enable them to handle the job in a more effective and positive manner. The training should enable the planner to be an integral part of the decision making process so that the planner could play a significant role in the planning and development mechanism at various levels and be more responsive to the people.

4. THRUST AREAS FOR RE-ORIENTATION OF PLANNING EDUCATION

In view of the emerging priority areas and changing socio-economic needs, the basic premise for man power training in town and country planning should revolve around the needs of the industry i.e. user agencies and the government priorities. There should not be wide gap between the requirements of the planning organisations / departments and the training imparted by the training institutes / schools.

The senior and middle level officials need to be given adequate re-orientation of latest and emerging technologies and planning practices to update their knowledge. On a similar pattern,

the training of trainers imparting training / education in the Planning Schools also needs to be taken seriously. Trends in planning education at international level should also be considered for incorporation in manpower training so that graduates trained by these institutions could also be suitable for working at international level. Thus, the training strategy for urban development and urban management has to focus on a large scale training program having decentralised orientation covering all areas of urban management such as spatial planning, infrastructure development, environmental improvement, municipal finance and local administration in order to enable rural and urban local bodies to perform their new tasks of governance.

Planning education has to match the requirements of the changing role of town and country planners in the country in the light of the fast changing technologies and the changing functions of the user agencies. The various innovative approaches to urban development necessitated by resistance of the land owners to compulsory expropriation of land by the state and exorbitant compensation to be paid for compulsory acquisition, in the form of Transfer of development Rights (TOR) and Accommodation Reservation and Town Planning Schemes (TPS) should form part of the planning education to expose the student to these techniques. These are working well in Maharashtra and deserves to be tried in other parts of the country to give a fair trial to these emerging concepts.

In the present system of town planning education, the students are exposed to generalities / subjects irrespective of whether he / she has to work at national level, state level, local level (Housing boards, Development Authorities, Municipal Bodies, etc.) or to enter in private practice. Perhaps the requirements of training would differ according to different levels. It is also not necessary that all the Schools / Institutions should be specialised in all the disciplines, it is possible and advisable to select the specialisations at regional levels as to which industry the product intends to go. Yet another glaring example of the present system of education is that the students are not even aware of the important central sector and state sector schemes like Integrated Development of Small and Medium Towns (IDSMT), Environmental Improvement of Urban Slums (EIUS), Mega-City Project, etc., due to which the students, as soon as they come out of the schools find it difficult to absorb themselves in monitoring, implementation and formulation of projects, etc., under these schemes. It should not be forgotten that it is through these schemes, national and state level urban strategies and policies are implemented. Thus, the training / education needs to be demand oriented.

Accordingly, the key characteristics necessary for effective training strategy should relate to:

- Demand oriented training programs which are responsive to the requirements of urban local bodies and State Town and Country Planning Departments, Housing boards, Development Authorities and other agencies dealing with urban planning and development and urban management;
- Focus on indigenous planning practices and local issues;
- Training of senior and middle level officials and also suitable courses for training of trainers.
- Support of decentralisation and regionalization of training efforts;
- Linkages (vertical and horizontal) to all relevant agencies which can contribute at central as well as state level towards strengthening the training / education process, training management, development of training materials; facilitating training and research, etc., and

- Sustainability of training mechanism: Regional and state level training institutions as well as universities and other institutions should be enabled to manage finance and execute their own state wide training programs.

In view of the functional domain emanating from the 12th Schedule of the Constitution and considering the emerging priorities and thrust areas in planning, strengthening of management capabilities through imparting of requisite knowledge, development of new skills and technologies and perceptive change in attitudes of those who are involved in manning these services at different levels would specifically be required to be trained in the following broad functional areas:

- Plan implementation and evaluation;
- Infrastructure facilities development;
- Urban land management;
- Urban environment particularly in studying the carrying capacity and environmental impact assessment of development project;
- Energy conscious city planning and development.
- Urban economy;
- Planning legislation, municipal legislation and Bye-laws;
- Urban informal sector and poverty alleviation programs;
- Micro enterprises and improvement of urban productivity;
- Urban transport;
- Metropolitan planning and management;
- Integration of spatial and economic planning and district planning;
- Municipal finance and services;
- Investment planning;
- Communication skills;
- Innovative techniques for urban development like TDR, Land Pooling, Accommodation Reservation, TPS etc.;
- Public-private partnership and alternative approaches to cost effective delivery of services;
- Project formulation and monitoring;
- Information system, computer and remote sensing applications and urban mapping, GIS, etc.,
- Rural development and village planning; and
- Exposure to various central and state sector schemes which are in operation like, IDMST, UBS, EIUS, NRY, Mega-City, etc., under urban sector and IRDP, JRY, Rural Housing, etc., under rural sector.

5. CONCLUSIONS

These functional areas would need to be incorporated suitably in the course curriculum by the Planning Schools and other training institutions at central and state levels so as to achieve an interface between planning education and industry and also to build up the management capabilities of planning and development organisations at various levels.

18 | CONSERVATION OF MANMADE HERITAGE: SOME LEGAL ASPECTS

Abstract

It is important to note that the Central Act - 'The Ancient Monuments and Archaeological Sites and Remains Act, 1958' envisages protection and preservation of natural setting and environment of archaeological monuments and historical places but the Archaeological Survey of India has no control over these areas beyond protected limits, therefore the areas around the monuments requires to be declared as a development area under the State Acts and restrictions can be imposed for controlling and regulating haphazard developments in and around these monuments. However, there is an imperative need to identify the monuments and the extent of periphery depending on each monument and then notify the area as a development area to protect the heritage, in the process there might arise some inadequacies either legislative or organizational or both which can be made up, once the areas are notified, the paper propagates.

1. INTRODUCTION

The Constitution of India under the Directive Principles of State Policy has laid down in Article - 49 that it shall be the obligation of the State to protect every monument or place or object of artistic and historic interest declared by or under law made by Parliament to be of national importance, from spoliation, disfigurement, destruction, removal, disposal or export, as case the may be. The historical monuments are the treasures of architectural heritage of past generations and efforts need to be made to protect them through appropriate laws. As the buildings / monuments have their own life cycle and grow old with the aging of its component materials, therefore, through proper legislation, systematic efforts need to be made to ensure the continuous and careful maintenance of the monuments without disturbing / changing their original character otherwise there is very likelihood of their damage which warrants adequate regulations and administrative controls.

The need for protection and preservation of natural setting and environment of archaeological monuments and historical places has been accepted at all levels. To ensure this, it is necessary that there should be adequate legislative provisions in the state acts to control and regulate developments taking place in the periphery of these monuments.

2. PROVISION OF CENTRAL AND STATE GOVERNMENT ACTS

It would be interesting to note that the Central Act, i.e. 'the Ancient Monuments and Archaeological Sites and Remains Act, 1958' envisages protection and preservation of such sites but the Archaeological Survey of India has no control over the areas beyond protected limits. A perusal of the provisions contained in the State Town Planning Acts has revealed that there are already adequate provisions in the state laws and if some of the states (which do not yet have comprehensive Town Planning Legislation on their statute book) do not have such provisions, these can be incorporated for controlling haphazard development in and around these monuments and it seems that it may not be necessary to enact a separate law for this purpose. It would be useful to refer to some of the Town Planning Acts.

2.1 Maharashtra Regional and Town Planning Act, 1966

The Maharashtra Regional and Town Planning Act, 1966 stipulates under Section - 14 that the Regional Plan prepared under the Act may provide for:

- Preservation, conservation and development of areas of natural scenery, forest, wild life, natural resources and landscaping. It further envisages that the Regional Plan may provide for;
- Preservation of objects, features, structures or places of historical, architectural or scientific interest and educational value; and
- Prevention of erosion, provision for afforestation or reforestation, improvement and redevelopment of water front areas, rivers and lakes.

The Development Plans prepared under this Act further envisage under Section - 22 that the Development Plans may contain:

- Proposals for designation of areas for open spaces, playgrounds,stadia, zoological gardens, green belts, natural reserves, sanctuaries and dairies;
- Preservation, conservation and development of natural sceneries and landscape;
- Preservation of features, structures or places of historical, natural, architectural and scientific interest and educational value; and
- Proposals for flood control and prevention of river pollution.

The Act further provides that the Town Planning Schemes (TPS) prepared under Section - 59 of this Act may also provide for the aforesaid matters.

2.2 Mysore Regional and Town Planning Act, 1961

The Mysore Town and Country Planning Act, 1961 provides that the Town Planning Schemes prepared under Section - 26 of the Act may provide among other aspects, for the "preservation of objects of historical or national interest or natural beauty of buildings actually used for religious purpose".

2.3 Tamil Nadu Regional and Town Planning Act, 1970

The Tamil Nadu Town and Country Planning Act, 1970 also provides that the Regional Plan prepared under Section - 15 of the Act may provide for the following matters.

- Preservation, conservation and development of areas of natural scenic beauty, forest,wild life, natural resources and landscaping;
- Preservation of objects and buildings of archaeological or historical interest or of natural beauty or actually used for religious purposes or regarded by the public with special religious veneration; and
- Prevention of erosion, provision for afforestation, or reforestation, improvement and redevelopment of water front areas, rivers and lakes;

Similarly, the comprehensive Development Plan prepared under Section - 20 of the Act may also provide for the preservation of places or objects and buildings of archaeological or historical interest or natural scenic beauty or actually used for religious purposes or regarded by the public with special religious veneration or the protection of canal, tank or river sides, coastal areas and other places of natural or landscape beauty.

2.4 Madhya Pradesh Nagar Tatha Gram Vivesh Adhyadesh, 1972

The Madhya Pradesh Nagar Tatha Gram Vivesh Adhyadesh 1972 which had subsequently been replaced by an Act also stipulates that the Regional Plan prepared under Section - 7 shall contain proposals for conservation and development of natural resources and in particular for the following:

- Reservation of open spaces for recreational purposes, gardens, tree belts, and animal sanctuaries ;
- Landscaping and the preservation of areas in their natural state; and
- Measures relating to the prevention of erosion, including rejuvenation of forest areas.

The Development Plans prepared under the Act shall also make proposals for general landscaping and preservation of natural areas.

2.5 Orissa Town Planning and Improvement Trust Act, 1956

The Orissa Town Planning and Improvement Trust Act, 1956 also contains provisions to the effect that the Master Plans prepared under Section - 30 of this Act shall keep in view the preservation of historical monuments.

2.6 Andhra Pradesh Urban Areas (Development) Act, 1975

In Andhra Pradesh, the Andhra Pradesh Urban Areas (Development) Act, 1975 provides for the constitution of a Arts Commission which is entrusted with the work of 'the preservation and conservation of archaeological and historical sites and sites of high scenic beauty'.

2.7 Acts of other States

Similarly the states of Haryana Pradesh, West Bengal, Gujarat, Punjab, Bihar, Nagaland, Goa and Union Territory of Daman and Diu have comprehensive Town Planning Acts which contain provisions for the declaration of Development Area / Planning Area and the Master / Regional Plan or the scheme prepared under the respective Act envisages preservation, conservation and development of areas of natural scenery and landscaping, preservation of features and objects, structures or places of historical, natural, architectural or scientific interest and educational value.

In Manipur Tripura and Rajasthan the Planning Areas / Development Areas can be declared under the respective Acts and Plans prepared and enforced through the local bodies.

2.8 Basis of Conservation of Historic Buildings

It may also be mentioned that the basis of conservation of historic buildings is established by legislation through the appropriate listing and scheduling of buildings and ruins through regular inspection and documentation and through town planning and conservation action. The broad based concept of a heritage / conservation area is defined as an area of special architectural, historical and cultural interest, the character and appearance of which is desirable to be preserved and enhanced. Such areas can be large or small, whole towns, squares, group of buildings or streets, open spaces, beaches, forests, natural water springs, etc. The broad definition thus includes the environment of the monuments and sites as a whole. The conservation of the heritage areas have to ascertain the various human needs with reference to familiar surroundings and affordability of local people while permitting the inevitable changes for the enhancement and improvement of traditionally oriented values and amenities. The legislative provision for the old areas has to be considered and enacted in a manner that it eventually does not necessitate a major change in the social composition / environment of the residents.

The Working Group on Urban Development laid great stress on urban conservation and aesthetic enhancement in and around the Immovable urban assets comprising primarily of:

- Monuments or group of monuments of 100 years of age or more, whether under the control of the Archaeological Survey of India or State Archaeological Departments;
- Other buildings or groups of buildings of architectural or historical value not yet covered or qualified under archaeological or protection acts; and
- Areas of scenic or environmental value worthy of conservation.

3. EXPERIENCE OF DELHI AND OTHER STATES IN HERITAGE CONSERVATION

In the urban areas the beautiful old historical monuments and tombs have been encroached by restaurants, shopping centers and unplanned housing colonies. There are innumerable small, attractive and unprotected monuments in the National Capital-Delhi which have been plastered and painted without caring for aesthetics of the monuments which are not in harmony with existing monuments and surrounding structures. Similarly Uggar Sain's Bauli on Hailey Road is being gradually inundated by tall new buildings all round it. Skyscrapers like that of the State Bank of India, Connaught Place in the background has eventually destroyed the beauty of the skyline and functioning of the observatory on Jantar Mantar Road. The conservation of manmade heritage of monuments necessitates provision of amenities within the precincts of the monuments. The slum and squatter settlements, *jhuggi jhopri* clusters and any other public nuisance around the vicinity of the monuments needs to be removed. Similarly the sky scrappers and unplanned and unregulated physical developments in and around the monuments in our cities should be restricted and must conform to the landscape and environmental considerations and should be in harmony with the surroundings.

The First Master Plan of Delhi had highlighted the sensitive integration of the monuments and tombs with the future developments. However, due to lack of adequate legal protections, the residential colonies are instrumental in disturbing the layout / design / aesthetics of the monuments. Regulations and restrictions, through legislative action must ensure conservation of historical monuments. Historical importance apart the existence of these monuments are in danger, to a large extent due to haphazard developments in metropolitan and large cities as they are decaying and are crumbling down. In the Master Plan, special provisions are required to be made to ensure repairs and maintenance of the historical monuments, beautiful old ruins, grandeur of centuries old buildings, the old walls and tombs which need to be periodically checked together with scrutiny of regulations and restrictions.

It is observed that in many States, the scheduled monuments are preserved but other buildings / movements with which they are associated in the past have been removed and replaced by contemporary structures, with the result, the monument stands bereft of its association with a consequent loss of its own scale and importance. The administrative and legal powers are required to be provided to the State Town Planning Departments and Urban Development Authorities for the conservation of monuments.

Keeping the legal perspective, the UNESCO document had rightly pointed out that the preservation of monuments should be an absolute requirement of any well designed Plan for urban development especially in historic cities or districts. The similar regulations should cover the areas surrounding a scheduled monument or site and its setting to preserve its association and character. Due allowance should be made for the modification of ordinary regulations applicable to new construction, they should be placed in abeyance when new structures are introduced into a historical zones.

Once Heritage Conservation Areas are declared, following safeguards need to be taken:

- In the declared area no building should be demolished without the approval of the appropriate authority;

- Any land use change or FSI / FAR should be permitted with the approval of the concerned authority . If a particular historic building is to be given a new lease of life, relaxed control over land use and FSI should be considered;
- Specific control for the display of advertisements should be exercised so that they do not detract from appearance of architectural and historical interest;
- New development should conform to the special architectural and visual qualities with regard to height, skyline, external painting, colour, building materials, vertical or horizontal emphasis and design, wall / window relationship, volume and dimensions, harmony and rhythm, etc., and
- Keeping in view the natural environment and common flora with provision for preservation and plantation of trees, the landscaping of the open areas should be done.

The planning authority / state government should declare certain- areas as heritage / conservation areas for which a broad architectural, social and economic survey of the area should be undertaken. In fact the declaration of such areas is only a first step to preserve or enhance its character and appearance. The plan frame for such areas should include proposals for development and other uses of land and effective measures for the improvement of the physical environment and management of traffic should form part of the plan. These proposals must be related with Development Plan and other uses of land in the adjoining areas.

4. NATIONAL COMMISSION ON URBANIZATION

It is interesting to note that the National Commission on Urbanisation (Volume 1, August 1988) also highlighted the need for conservation. It recommended that

- Conservation should go beyond preservation of monuments and encompass the whole built heritage;
- Rules and regulations should be amended to encourage conservation of the living environment,
- City planning must encourage conservation of old city areas and not just development of new areas, and
- Direct fiscal, and other incentives should be offered as an encouragement to individuals to conserve places and sites.

The notification of manmade heritage areas, constitution of authorities and preparation of Master Plans for those areas should start in the right earnest and its contents should necessarily provide for the conservation of heritage in a meaningful manner both in spatial and social perspective.

5. CASE LAWS

It is encouraging to note that the Supreme Court of India had acted as a saviour for the Taj Mahal and other historical monuments in the city of Agra. In a writ petition filed by M.C. Mehta, a notice was issued by the Court in 1984 for the protection of the Taj Mahal. However, on January 8, 1993, the Bench, after hearing the matter had directed the Uttar Pradesh Pollution Control Board for undertaking a survey of the area to identify the actual industries and foundries operating in the region and further directed that " the Board after completing the survey, should issue notices to all the foundries and industries in that region to ensure that the necessary anti-pollution measures were undertaken by the said industries and foundries" The Pollution Board after completing this exercise was ordered to submit a report on or before May 5, 1 993. When the matter came up for

further hearing, the Uttar Pradesh Pollution Control Board filed its affidavit stating that according to the Court's order, notices were issued to 511 industries in the Agra region. Subsequently, the court directed the U.P. Pollution Control Board to issue a public notice calling upon all the 511 industries to install anti-pollution mechanisms if they had not already done so. On August 27, 1993 the U.P. Pollution Control Board filed an affidavit stating that 212 industries did not even care to reply to the Board whether they had anti-pollution devices. Subsequently, the Court had closed down these 212 units. However, the other units which filed replies were given time to set air pollution control devices. Surprisingly, none of the 511 factories surveyed by the Board had any pollution control devices. It is quite evident that no action had been taken in the past against these industries and they were allowed to pollute an ecologically fragile area in a ruthless manner. The Supreme Court had directed the Ministry of Environment and Forests, Government of India on April 11, 1994 to set up a special cell to develop a green belt around the Taj Mahal Complex. Further, the court directed that the planting should commence within two weeks of the receipt of the order and that the Secretary, Department of Environment and Forests, should file an affidavit in the Court within four weeks indicating the steps taken by the Ministry for implementation of the Court's order. The Court had emphatically pointed out that we are of the view that the shifting of industries from the Taj Mahal Trapezium has to be made in the phased manner. The NEERI'S report indicates that the maximum pollution to the ambient air around Taj Mahal is caused by the industries located in Agra. The Supreme Court directed the Ministry of Environment and Forests, Government of India, on April 29, 1994, to have another investigation report from a reputed technical / engineering authority.

It is thus, evident that for years no adequate measures were taken for the safety of the world renowned historic monument. If the Supreme Court of India had not taken timely action against the polluting industries, questioning the authorities for dereliction of duty to protect not just the historical monument but the people and the flora and fauna within the Taj Trapezium, there was every likelihood that the entire region would have been adversely affected which would ultimately resulted in crumbling of the Taj . (M.C. Mehta Taj Trapezium, A Wonder Under Smog, The Hindu, Survey of the Environment, 1994)

Similarly, the discussion on a Heritage Act for Tamil Nadu had arisen in the context of the proposed demolition of the 155 years old Director General of Police Headquarter's building on the renowned Marina Beach, Madras, opposite Debi Prasad Roy Chowdhury's famous sculpture of Gandhi's Dandi March. The Marina Beach and the sea are accepted as common property traditionally and thus needs to be preserved.

5. CONCLUSIONS

The areas around the monuments can be declared as a development area under the State Acts and restrictions can be imposed for controlling and regulating haphazard developments in and around these monuments. There is an imperative need to identify the monuments and the extent of periphery depending on each monument and then notifying the area as a development area to protect the heritage. There may be some inadequacies either legislative or organisational or both which could be made up once the areas are notified.

REFERENCES

- Government of India (1958) *The Ancient Monuments and Archaeological Sites and Remains Act, 1958*
Government of Maharashtra (1966) *The Maharashtra Regional and Town Planning Act, 1966*

19 | EMERGING PARADIGM OF DISTRICT PLANNING IN THE CONTEXT OF 74TH CONSTITUTION AMENDMENT ACT

Abstract

District planning concept has been revived recently through 73rd and 74th Constitution Amendment Acts relating to Panchayats and Municipalities with some vigor by providing it a constitutional validity. However, to ensure the success of district planning approach in the country, the state governments / union territories not only need to amend their related laws and acts in conformity with the Constitutional Amendments but they are also required to create a suitable structure for which the physical planner with their background supported by sound professional experience are better placed to lead the Planning Team for preparation of District Plans. The paper further strengthens this point by clarifying that as most of the development programs will emanate from the Development Plan at the district level, the Physical Planner would be able to establish a linkage between the planning and implementing agencies.

1. INTRODUCTION

The concept of grass root planning encompassing district or block level planning is being followed since the First Five Year Plan and remained in focus in all the subsequent plans. Even though the approach of district planning has been in existence for last four decades it has not been very effective in achieving the desired objectives of decentralised planning mainly due to inadequate devolution of powers, responsibilities and resources for planning and development at local level, lack of public participation at all stages of planning, lack of commitment for district planning and absence of spatial approach, etc. Nevertheless the concept of decentralised district planning needs to be continued within the broad framework of national and state plans for transforming the, objectives of these Plans. District Planning concept has been revived recently with some vigour by providing it a constitutional validity. The 73rd and 74th Constitution Amendment Acts relating to *Panchayats* and *Municipalities* in India while providing constitutional support have again brought to fore the importance of district planning. However, to ensure the success of district planning approach in the country, the state governments / union territories not only need to amend their related laws and acts in conformity with the Constitutional Amendments but they are also required to create a suitable structure like:

- Develop planning capabilities at district level;
- Affect the necessary technical and attitudinal changes; and
- Devolve in right earnest the responsibilities and resources to the *Panchayat Raj* Institutions, urban local bodies and other institutions at the district level.

Before addressing, all such issues in the light of emerging dimensions of the district planning it would be advisable to have an insight in the evolutionary process of district planning by learning from the past experiences.

2. DISTRICT PLANNING IN RETROSPECT

The genesis of the concept of District Planning goes back to early fifties when in the First Five Year Plan (1951-56) the concept of grass, root level planning or planning from below was introduced. Since then in all the subsequent Plans emphasis on district or block level planning at the grass root level has been continued as stated earlier. However, during last four decades; certain important events have had a greater impact on decentralised district level planning. The recommendations of Balwant Ray Mehta Committee Report (1957) initiated the process of decentralised district planning on the basis of which the *Panchayati Raj* system was established in many states of India in the late fifties and early sixties. The report of the Committee highlighted that development cannot progress without responsibility and suggested the establishment of statutory elected local bodies and devolution of necessary resources, power and authority to them. This was termed as democratic decentralisation in operational terms. Starting with community development projects in late fifties and early sixties a thrust on district planning was placed in 1969 when detailed guidelines for district planning were issued by the Planning Commission. Major thrust to decentralised district planning was provided with the introduction of block level planning during seventies which was conceived to complement rural development. Government of India issued guidelines for block level planning during Fifth Five Year Plan and as a result of which 300 Block Level Plans were prepared during the plan period. The report of the Working Group headed by Shri M.L. Dantawala (1977) which inter-alia drawn up guidelines for Block Level Planning and another report of the Committee on *Panchayati Raj* headed by Shri Ashok Mehta (1977) were submitted in 1978. Both the reports set the tone for operationalizing the decentralised district Planning process. In 1983 the Economic Advisory Council to the Prime Minister presented a report on decentralisation of development planning and implementation in the states. A detailed and elaborated study of district plan process was made by the Working Group on district planning constituted by the Planning Commission, which submitted its report in 1984. In fact the Report of the Working Group formed the basis for the Seventh Plan proposals on decentralised planning. It may be mentioned that the district planning practice in India as followed by many states is widely based on the guidelines for district planning issued by the Planning Commission in 1969 and the recommendations of the Working Group Report (1984).

The Eighth Five Year Plan stressed the need for district planning to integrate the poverty alleviation programs, development programs in rural areas and sectoral schemes. It further suggested that District Plan would need to be prepared taking into account the physical and human endowments of the area, the felt needs of the people and the funds available and accordingly schemes would be identified for implementation in conformity with these Plans. Using scientific methods and latest technology now available, the geographical area of the district would have to be mapped from photogrammetry and satellite data. These maps would have to be disaggregated at lower level to identify various programs of development within the broad frame of District Plan. A Committee setup to review the existing administrative arrangements for rural development also emphasised in its report (1985) the need for decentralised planning at the district level and below. Accordingly, the Eighth Plan envisaged that planning and implementation of sectoral activities would be decentralised and integrated into a unified activity, with the horizontal coordination at the district level.

Presently the development programs executed by the concerned agencies in the district generally lack inter-departmental coordination as well as spatial integration and do not form part of the Integrated District Development Plan. The conference of the Chief Secretaries on *Panchayati Raj*

and District Planning held in July, 1988 also felt that at present there was no district planning in true sense and what existed was merely a district budgeting. It was merely national plans split into state plans which in turn was split into district wise allocation of funds. With a view to strengthen the *Panchayati Raj* institutions and Urban Local Bodies and to make them a vibrant instruments of local government the central government enacted 73rd and 74th Constitution Amendment Acts relating to *Panchayats* and Municipalities in 1992. These enactments, would hopefully resolve various planning, administrative, technical, financial and coordination problems coming in the way of effectualization of district planning approach.

3. EMERGING CONCEPT OF DISTRICT AND METROPOLITAN PLANNING

3.1 73rd Constitution Amendment Act, 1992

The idea of decentralised planning at district level has been revived recently with some vigour. The emerging scenario in the light of recently revised decentralised planning at district level call for desired synthesis between democratic decentralisation of authority and decentralised planning. District planning then would become an integral part of the management system of the district duly represented by the elected people. With the 73rd and 74th Constitution Amendment Acts, district planning has been placed on sound and scientific footing. To make *panchayats* function as an unit of self government, the central government enacted 73rd Constitution Amendment Act, 19 92. The article 243-B of the Act suggests that it shall be mandatory for all the states (except a few areas in North-East) to constitute *Panchayats* at the village, intermediate and district levels in accordance with the provision of the Act. However, for the states having a population of less than 20 lakh it would not be necessary to establish *panchayats* at intermediate level. State governments are empowered to decide the composition of the *panchayats*. The ratio between the population of the territorial area of *panchayat* at any level and number of elected members in such *panchayats* shall, so far as practicable, be the same throughout the state. All the seats in a *panchayat* shall be filled by direct election. The state government may provide for the representation of the chairperson of *panchayat* and member ol the House of the People and the Member of the Legislative Assembly of the State representing respective *panchayats* at various levels except village *panchayat*. The elected body of the *panchayats* shall have due representation of members from the scheduled castes and scheduled tribes in proportion to the population in the respective *panchayat* area. Nearly one-third of the total seats shall be reserved for women in every *panchayat* and be allotted by rotation to its different constituencies. Its duration shall be for five years unless it is dissolved before the expiry of the period.

The important feature of the Act, is that the *panchayats* may be endowed with such powers and authority, to function as institutions of self government and it may also contain provision for powers and responsibilities with respect to:

- The preparation of Plans for economic development and social justice; and
- The implementation of schemes for economic development and social justice as may be entrusted to them including those in relation to the matters listed in the Eleventh Schedule.

The schemes required to be implemented by the *panchayats* are indicated in the Eleventh Schedule of 73rd Amendment Act. In all 29 schemes have been listed, in the Eleventh Schedule which include agriculture extension programs, land improvement and soil conservation, minor irrigation and watershed management, animal husbandry and fisheries, social and farm forestry,

cottage and small scale industry rural housing and drinking water, fuel and fodder, minor roads and other means of communication, rural electrification and non-conventional energy sources, poverty alleviation programs primary and secondary, vocational and non-formal education, libraries and cultural activities, markets and fairs, health, sanitation and family welfare, social welfare, of weaker sections and public distribution system.

Although the schemes enumerated above form part of the major sectors of development, normally included in State Plans, the pertinent question is of deciding the components of a sector which the state government should deal with and those that are to be handled at the district level by the *panchayats*. The list of schemes mentioned above clearly reveal that they shall perform lower order functions within the respective sectors of development whereas higher, level functions shall be the responsibility of the state government. The article 243-1 also provide for constitution of Finance Commission to review the financial position of the State and may recommend the principles for financial allocation between the state and the *panchayats* which will go a long way in implementing the schemes identified for *panchayats*. It is obvious that all such schemes cannot be conceived in isolation rather it should form part of the spatio-economic development plan at the district level in order to achieve better results.

3.2 74th Constitution Amendment ACT, 1992

74th Constitution Amendment Act, 1992 relating to municipalities has also made clear cut provision for preparation of district development plan. The 74th Amendment has provided for the uniform constitution of the municipalities by classifying them as:

- *Nagar Panchayat*;
- Municipal Council for smaller urban areas; and
- Municipal Corporation for larger urban areas.

Like *panchayats*, municipalities are also endowed with more representative character and are bestowed with sufficient powers, authority and responsibility. Under Article - 243-W the state government may endow the municipalities with such powers and authorities, with respect to (i) the preparation of plans for economic development and social justice, and (ii) the performance of functions and the implementation of the schemes as may be entrusted to them including those in relation to the matter listed in the Twelfth Schedule. The schemes / functions, listed in the Twelfth Schedule are of varied nature and comprise urban planning including town planning, regulation of land use, planning for economic and social development, public utilities, services and amenities, slum improvement and urban poverty alleviation programs, promotion of cultural, educational and aesthetic aspects, etc. The special feature of the 74th Amendment is the constitution of Committee for District Planning under Article 243-ZD. It is mandatory for all the States to constitute at the district level a District Planning Committee (DPC) which will consolidate the plans prepared by the *panchayats* and the municipalities in the district and prepare a draft Development Plan for the district as a whole. Although the composition of the District Planning Committee is at the discretion of the state government it is however, obligatory that not less than four-fifth of the total number of members of such committee shall be elected by and from amongst the elected members of the *panchayat* and municipalities in the district in proportion to the ratio between the population of the rural areas and of the urban areas in the district. Specifying the broad content and coverage of the district development sub-section

(3) of Article - 243 ZD, provides that, draft Development Plan prepared by District Planning Committee shall have regard to:

- Matters of common interest between the *panchayats* and the municipalities including spatial planning, sharing of water and other physical and natural resources, the integrated development of infrastructure and environmental conservation;
- The extent and type of available resources whether financial or otherwise; and
- Consult such institutions and organizations as the governor may specify.

The chairperson of every District Planning Committee shall forward the Development Plan, as recommended by such committee to the state government.

Thus, the 73rd and 74th Constitution Amendment Acts have added new dimensions to the concept and practice of district planning in vogue. Spatial planning as an integral part of district development plan has been given constitutional recognition for the first time in the history of district planning process which call for resolving all the related issues in an integrated and coordinated manner so as to prepare and implement the District Plans in the true spirit of 74th Constitution Amendment Act.

4. ISSUES AND IMPERATIVES

In order to place district planning on a scientific and sound footing the Working Group on District Planning had identified certain essential pre requisites which if coupled with the provisions of 74th Constitution Amendment would be helpful in operationalizing the emerging concept of district planning. The essential ingredients suggested by the Working Group include:

- Existence of political will;
- Setting up of District Planning Board;
- Setting up of suitable mechanism for planning in each district;
- Disaggregation of plan funds and devolution of financial resources;
- Delegation of administrative powers;
- Evolution of new pattern of political and administrative behaviour;
- Essential public participation in all stages in the planning process; and
- Training and re-training of personnel.

Analysing these requirements critically it is inferred that most of the pre-requisite identified by the Working Group for the success of district planning process would be met with the detailed provisions made in 73rd and 74th Constitution Amendment Acts relating to *panchayats* and municipalities. The pertinent point is to amend the related laws and Acts by the state governments in conformity with the provisions of Constitution Amendment. It is delighting to note that, most of the State Legislatures have, passed the amending legislation to ensure that the provision of the existing municipal laws are not repugnant to the new Constitutional provision. It is, however, noted that Constitutional provisions of mandatory nature are being incorporated in the related laws and acts while process for incorporation of the provision, left at the discretion of the State, has not picked up. It would be necessary that all the related provisions need to be incorporated in letter and spirit of the constitution amendments and this opportunity of district planning should be utilised to cover a large canvas than what is required by the mandatory

provision of Constitution Amendment Act. In fact 73rd and 74th Constitution Amendments need to be considered together, then only the envisaged integration of the planning process at the district level could be achieved. The immediate priority is to start the implementation process for strengthening *Panchayati Raj* and municipal system as envisaged under the Amendments so that, required functions could be assigned to the concerned institutions. The issue of amending the necessary State legislation having relevance to the 74th Constitution Amendment Act has already been discussed in the 25th Meeting of the Central Council of Local Government and Urban Development held on 7th May, 1994 at New Delhi and further action regarding amendment is required to be taken by the state governments.

As regards District Planning Committee, Institute of Town Planners, India have undertaken a detailed exercise and suggested necessary changes in the State Town Planning Acts and Municipal Acts for affecting 74th Constitution Amendment Act. The Institute suggested that District Planning Committee could be entrusted with the functions of preparation of draft Development Plans, issues relating to peripheral areas and resolution of conflicts, approval of guidelines for planning and related issues, overlapping functions between *panchayats* and urban local bodies in the district and rationalisation of investment on an annual basis for the local bodies in the district. Besides, draft development Plan prepared by the DPC should include the priorities assigned to work programs included in the Plan and phasing of the programs of development which would enable the state government to issue such direction to all the development agencies - both private and public to ensure coordinated development of the district. All such suggestions of ITPI need to be given due weightage while allocating the functions to the District Planning Committee. ITPI has also suggested composition of DPC which includes besides chairperson, 24 elected members 6 other expert members from the field of finance, spatial planning, engineering, district Collector, administration and environment. Member (Spatial Planning) should be an Urban and Regional Planner working full time as Member Secretary. While considering the above composition it would, be advantageous that the proposed DPC is constituted under the State Town Planning Acts after affecting the necessary modification. This will serve the dual purpose of integrating the spatial and economic plans at district level and will serve a better link between the rural and urban areas thus ensuring a desirable urban-rural continuum.

Planning, whether physical or fiscal at national, state and district level do need a careful study of human and natural resources along with field realities for optimal utilisation of resources for responsive planning. Variety of data on physical resources, human and economic aspects are the pre-requisites for preparing an integrated area Development Plan for a district. There is a need to strengthen the data base not only at district level but in disaggregated form at lower level also for detailed analysis at intra-district level. Besides conventional methods, data base for the district could be greatly strengthened with the help of emerging techniques of aerial photography and remote sensing. Considering the immense potentials of the technique the Working Group on district planning, National Commission on Urbanisation, Eighth Five Year Plan document have also emphasised the use of this technique for preparation of various resource and thematic maps for district planning. All such maps will give a great fillip to the district planning and development strategy. The Ministry of Urban Development has launched a pilot scheme on urban mapping in the Eighth Plan which envisage preparation of large scale maps for urban areas with the help of aerial photography and photogrammetry techniques. Similar schemes for preparation of resource maps for the districts with the help of remote sensing techniques need to be initiated.

As mentioned earlier district planning is in existence for a long time but there are very few successful examples of district planning exercise which demonstrate the need for integration of spatial and economic Plans. Most of the District Plans are compilation of state level schemes splited at district level and budgetary allocation for these schemes. The 73rd and 74th Constitution Amendments have provided an opportunity not only to consolidate the Plans prepared by urban and rural local bodies within the district but to have the parameter of economic development and social justice. There are 486 districts in the country which not only vary largely in size and population but in resource potential and characteristics. The need is to prepare some-typical model District Plans covering, few districts in different setting so that it could be used as guide for preparation of District Plans by the state governments. TCPO has recently prepared a Plan for Bharatpur district using remote sensing and GIS techniques, which would be helpful in working out model District Plan as per the provision of constitution amendments.

5. CONCLUSIONS

The *Panchayati Raj* institutions, and urban local bodies would be the agency for preparation, implementation and monitoring of Development Plans and programs at various levels in the district. The nature of work involved in such exercise is basically of area planning and socio-economic development which by virtue of educational qualification, training and professional experience is the domain of the physical planner. The district planning and development process has so far, followed target and budget oriented approach and physical planner could not get an appropriate opportunity to work, hence his role and participation in the district planning exercise has more or less remained marginal. The Constitution Amendments envisaging preparation of District Plan incorporating spatial and economic plan have provided the right opportunity which should be availed by the physical planner in all its seriousness.

The physical planner with his background supported by sound professional experience would be better placed to lead the planning team for preparation of District Plan. As most of the development programs shall emanate from the Development Plan at the district, the physical planner should be able to establish a linkage between the planning and implementing agencies. He will also have to play an important role in monitoring and evaluation of the programs as part of district plan. All this will require to reorient our attitude and approach towards area planning / regional planning at district level. This may also necessitate a little change in the course curriculum of academic Institutions and refresher courses for in service professionals and physical planners to do full justice to integrate and coordinate various programs in the district development plan.

REFERENCES

- The Constitution (Seventy Third) Amendment Act, 1992
- The Constitution (Seventy Fourth) Amendment Act, 1992.
- Planning Commission, Government of India (1984) *Report of the Working Group on District Planning*.
- School of Planning and Architecture, New Delhi (1990) *Technical Papers on A Short Course District Planning and Management*.
- Hooja Rakesh and Mathur P.C. (1991) *District and Decentralized Planning*, Rawat Publication, Jaipur.
- Misra R.P. (1990) *District Planning - A Handbook*, Concept Publishing Company, New Delhi.
- Planning Commission, Eighth Five Year Plan - 1992-97.

20 | PLANNING LEGISLATION IN THE CONTEXT OF 73RD AND 74TH CONSTITUTION AMENDMENTS: SOME THOUGHTS

Abstract

Most of the states have amended their municipal laws with regard to 73rd and 74th Constitution Amendment Acts, however the powers, authority and responsibility to municipalities in terms of Article 243W of the Constitution Amendment are yet to be spelt out in detail. It may be relevant to point out in this context that the provisions of Article 243-W of the Constitution Amendment are, in fact, not mandatory and are left to the State Governments to decide at their discretion as to which functions are to be assigned to the municipalities. In fact there was no intention to encroach upon the autonomy of the states by making mandatory provisions in the Constitution Amendment to delegate powers and responsibilities to the urban local bodies. Some states have entrusted the municipal bodies the task of preparation of Plans for economic development and social justice, but the functional domain of these local bodies is yet to be determined keeping in view the other existing institutional arrangements for many functions listed in the Twelfth Schedule. A lot of preparatory work by the State Governments is still required to formulate policies for the devolution of powers and responsibility upon the municipalities for the preparation of Plans for economic development and social justice as listed in the Twelfth Schedule.

1. INTRODUCTION

At the threshold of the 21st Century, the Constitution (74) Amendment Act is the first serious attempt to ensure adequate constitutional obligation so that democracy in municipal government is established and emerges as vibrant units of local self government at the grass root level. It is, indeed an expression of the determination of the state to bestow power to the people to plan for themselves and participate in the decision making process. By 31st May 1994, most of the state governments have amended their state laws to bring them into conformity with the provisions of the 74th Constitution Amendment which was the statutory requirement. The 25th meeting of the Central Local Government and Urban Development Ministers taken by the Union Urban Development Minister on 7th May, 1994 in New Delhi with the constituent members of the State Ministers of Local Government and Urban Development of the various states reviewed the follow up action plan on the 74th Constitution Amendment and resolved that “the provisions of the state laws as amended may be examined within the next twelve months to further amend these laws or bring about comprehensive new municipal reform and other related legislation keeping in view the spirit of the 74th Amendment and to enable introduction of needed reforms in the urban sector including reforms in municipal personnel and finance administration, to meet the growing challenges of urbanization particularly in the light of the ongoing economic reforms”.

While most of the states have amended their municipal laws with regard to constitution and composition of municipalities, ward committees, reservation of seats, elections, finance commission, etc., the powers, authority and responsibility of municipalities in terms of Article 243W of the Constitution Amendment are yet to be spelt out in detail. Some states have entrusted the municipal bodies the task of preparing plans for economic development and social justice,

the functional domain of these local bodies is yet to be determined keeping in view the other existing institutional arrangements for many functions listed in the Twelfth Schedule.

A lot of preparatory work by the state governments is still required to formulate policies for the devolution of powers and responsibility upon the municipalities for the preparation of plans for economic development and social justice and the performance of the functions and the implementation of schemes as may be entrusted to them including those in relation to the matters listed in the Twelfth Schedule by taking note of the existing arrangements, new compulsions and the organizational and financial capabilities of the municipalities, it may be relevant to point out in this connection that the provisions of Article 243-W of the Constitution Amendment are, in fact, not mandatory and are left to the state governments to decide at their discretion as to which functions are to be assigned to the municipalities. There was no intention to encroach upon the autonomy of the states by making mandatory provisions in the Constitution Amendment to delegate powers and responsibilities to the urban local bodies. Similarly, the Twelfth Schedule to the Constitution Amendment is also not mandatory, it has listed 18 items, important among them are urban planning including town planning, regulation of land uses and construction of building and planning for economic and social development.

2. EXITING MUNICIPAL LAWS AND NEW ROLE OF LOCAL BODIES

The existing municipal laws are totally inadequate to enable these local bodies to discharge their new constitutional responsibilities. The manpower available with the local bodies is grossly inadequate and ill equipped to take over the planning, development and management of the challenging role. It is imperative that the existing municipal laws are amended comprehensively to define the role of various development departments including town and country planning department to bring them in line with the directions enshrined in the constitution amendment.

It is now increasingly being realized that the urban governments, which have for the first time received constitutional guarantee under the 74th Amendment Act, should not only provide civic services for the welfare of the local people but also carry out the task of urban development and planning. But unfortunately, these urban local bodies are confronted with numerous problems of multi-dimensional nature and scope on account of rapid urbanization, population growth and industrialization. The urban population of the country is projected to exceed 36 crore out of the total population of 100 crore and the number of million plus cities to rise from 12 to 40 by 2001. The supersession of the urban local bodies is rampant and the general level of efficiency has been deplorably low. Even the responsibility for providing adequate civic amenities is an up-hill task. If the urban local bodies have to serve as agencies for plan preparation, enforcement and implementation as envisaged in the constitution amendment, it is absolutely necessary that effective infrastructure is built into the local government system to give a fair trial to this new role.

3. MODEL REGIONAL AND TOWN PLANNING AND DEVELOPMENT LAW

The Model Regional and Town Planning and Development Law formulated by the central Town and Country Planning Organization and commended to the States for adoption with such changes as to suit the individual requirements had conceived, the local authorities to be designated as the planning and development authorities in the first instance as provided in section - 21 ii(b). It is specifically provided that officer and 5 other members to be appointed by the Government shall

assist the local authorities in performing the functions of planning and development authority. This committee shall have the status, powers and responsibilities as given to a Standing Committee appointed under the Act under which the local authority is set-up. The Town Planning Officer shall be the Chief Executive Officer of the Planning Committee. It would therefore, be seen that the task of preparation of a Master Plan is essentially the function of the local authority. It is therefore, necessary that in cases where the legislature of a state endows the municipality with planning functions under Article 243-W of the constitution amendment read with newly added Twelfth Schedule, the municipality should set up a Planning Committee as suggested. This committee also includes representation of the elected members as also the administrative and professional experts on the committee. The actual number of members may depend on the size of the municipal body. The past experience has, however, demonstrated that the local authorities did not take any initiative, may be on account of organizational inadequacies and lack of financial support in undertaking this task. With the 74th Constitution Amendment, the state governments are required to bestow by law, necessary powers and authority to the municipalities to enable them to function as institutions of self government and undertake functions relating to urban planning and development as provided in the newly added Twelfth Schedule.

4. AMENDMENTS TO MUNICIPAL ACTS BY STATE GOVERNMENTS

It is satisfying to note that the Government of Maharashtra has amended its municipal Acts namely Maharashtra Municipalities Act, 1965 and the Bombay Provincial Municipal Corporation Act, 1949. In the first Act, the municipalities have been entrusted with the mandatory functions of urban planning including town planning, regulation of land uses and construction of buildings and planning for economic and social development. Under the latter Act, the Bombay Municipal Corporation is entrusted with the task of preparation of city development plan in accordance with the provisions of the MRTP Act, 1966 and its enforcement including land use provisions and development control rules for controlling construction of buildings and in addition planning for economic and social development. Similarly, the BMRDA Act, 1974 has also been amended to provide for the setting up of Bombay Metropolitan Area Planning and Development Committee and its composition has also been specified in the Act.

While the Government of Maharashtra has once again taken the lead in entrusting the municipal bodies with the important mandatory functions of urban planning including town planning and regulation of land uses, many other states have not specifically entrusted these functions to the urban local bodies although preparation of plans of economic development and social justice has been entrusted by most of the states. In this regard, many important issue related to functional domain of municipal bodies need to be thrashed out by the state governments and policy decision has to be taken. Among them, organizational capacity of the different levels of urban local bodies should be an important determinant for entrusting functions to them. Secondly, there are certain functions which, strictly speaking are of a local nature and should be better performed by the municipal bodies because of their proximity to beneficiaries even if they may belong to the state government. The new functions must take into account the expenditure involved, which the municipal bodies may be able to bear unless additional financial resources are made available to them.

5. DISTRICT PLANNING COMMITTEES

At the district level, Article 243-ZD of the Constitution amendment provides for the constitution of a committee in every state to consolidate the plans prepared by the *Panchayat* and the

Municipalities in the district and to prepare a draft development plan for the district. Such District Planning Committee (DPC) shall take into account matters of common interest between the *panchayats* and the municipalities including spatial planning, sharing of water and other physical and natural resources, integrated development of infrastructure and environmental conservation and the available resources - financial or otherwise in preparing the draft development plan. Similar provision is contained for the preparation of development plan for every metropolitan area for which a committee is required to be constituted under Article 243-ZE. A close study of these provisions of the 74th Amendment provides a reasonable inference that each municipality by whatever name called, is expected to prepare a plan for its area and undertake the task of urban planning including town planning, regulate land uses and construction of buildings as given in the Twelfth Schedule. Article 243-Q lays down that three types of urban local bodies are to be constituted which are:

- A *Nagar Panchayat* for a transitional area, that is to say an area in transition from a rural area to an urban area;
- A municipal council for a smaller urban area; and
- A municipal corporation for a larger urban area.

The Constitution 74th Amendment Act, 1992 contains mandatory provisions as also discretionary provisions which are to be carried out by the state governments. The constitution of a committee for district planning under Article 243-ZD is a mandatory provision i.e. it is obligatory on the part of the state governments to set up a district planning committee for each district in the State. However, the composition of the DPC as also the manner in which the seats in such committee are to be filled up and chairperson of such committee have been left to the state government to decide. In doing so, 80 per cent of the total number of members of such committee are to be elected from amongst the elected members of the *panchayats* and the municipalities in the district in proportion to the ratio between the population of the rural areas and the urban areas in the district.

The Model Regional and Town Planning and Development Law has devoted a separate chapter dealing with regional planning giving complete legislative backing by constituting the statutory Regional Planning and Development Authority (RPDA) for preparation, processing, approval, enforcement, execution and implementation of development plans. It is envisaged that after the declaration of the regional planning area by the government on the advice of the Board, a Regional Planning and Development Authority may be constituted. This authority is entrusted with the work of carrying out a survey of the regional planning area, prepare an existing land use map and prepare a regional development plan. It is also to coordinate the plans and programs of development agencies operating in the regional planning area. Looking into the function of the regional planning and development authority in the context of 74th constitution amendment, it appears to be akin to the District Planning Committee. The distinguished feature of the two sets is that while RPDA is to prepare the Regional Plan by carrying out the surveys and land use map, the DPC is to consolidate the plan already prepared by the *panchayats* and the municipalities in the area and this committee is required to take an overall view of the whole area consisting of the rural areas as well as the urban areas in the district within the parameters stated in Article 243-ZE. The DPC has been made more responsive to the people by providing 80 % of the

members to be elected from amongst the *panchayat* and the municipalities. The remaining 20 % have been left to the state government to decide. It is here that the experts in the field of town planning, urban administration, financial analysts, engineers and other district level / regional level officers of the state government, voluntary organizations institutions, etc., are to be provided. The Model Law envisaged that RPDA shall have members drawn from the government at the level of Superintending Engineer PWD, Collector of the district and three professional experts. The Regional Planner is the Member Secretary and Chief Executive Officer of RPDA.

It is thus clear that the plans for the rural areas falling under the *panchayats* and the urban areas of the municipalities are to be prepared by the respective local bodies which would get consolidated at the district level by the DPC by taking into the account the spatial dimensions of planning and development and the available resources. The DPC is to ensure that developments in the district conform to the plan prepared by it which would be implemented by the *panchayats* and municipalities in their respective areas. In addition, a provision should also be made in the amending Acts that the DPC while consolidating the plan of the district, shall include recommendations to the government regarding the directions to be issued to the concerned local authorities and other agencies in the district and the different departments of the government in respect of enforcement and implementation of the proposals in the plan, included in the plan of the district and the phasing of the program of development. This provision would enable the state government to issue such directions to all the development agencies - public and private which would ensure coordinated development of the district. The DPC would provide interaction with municipal bodies and *Panchayati Raj* institutions in relation to planning and conflict resolutions. In this connection, certain important questions concerning the urban-rural interface may arise like the fringe area of a town where urbanization is taking place which may lie within the purview of *Panchayati Raj* institutions. Similarly, certain district roads maintained by *Zila Parishad* may be passing through the municipal areas. The source of drinking water for the town may, in fact, lie outside the limit of the town and the disposal of waste as well. These are illustrative and many more such aspects would require an overall view of development of the district and allocation of investments between rural and urban institutions at the level of the district as a whole. The question of planning controls for, regulating buildings in the peripheral areas surrounding major municipalities may have special problems which may be vested with the rural institutions but having regard to the future development of the area and its possible incorporation into the main municipalities at a later date, it may be necessary that the municipalities should also have a say in such building sanctions. The matters like extension of the municipal boundary necessitated by urban growth, the transition of a particular village *Panchayat* to the level of *Nagar Panchayat*, etc., are questions which are best addressed by the DPC.

Today, we have some form of district planning bodies in most of the states but they are generally nominated and are not responsive to the people. The DPC as envisaged in the 74th Constitution amendment would draw 80 per cent of its members from an electoral college consisting of the elected members of the *panchayats* and *Zilla Parishad* on the rural side and municipalities and corporations on the urban side in proportion to the population while the remaining 20 per cent may consist of experts, voluntary organizations and representatives of the state government as also the central government. The Chairperson of the DPC should be vested with the Divisional

Commissioner who may have a broader perspective of overall planning or alternatively he could be elected by the elected members of the DPC. The Constitution Amendment has left to the state government to decide the chairperson. It would be difficult to prescribe a rigid composition since there is considerable variation in the urbanization level and so would be the nature, extent and scope of the problems of the city and its hinterland.

With regard to the functions relating to district planning which may be assigned to such committee, the constitution amendment has left it to the discretion of the state government, while it may not be appropriate to prescribe, it is imperative from planning point of view to make room for flexibility to suit individual situations, certain guidelines, however could be considered. The DPC shall, keeping in view matters of common interest as laid down in sub-section 3 of Article 243-ZD prepare the draft development plan of the district as a whole by consolidating the plans prepared by the *panchayats* and the municipalities in the district. In doing so, the following aspects / functions could be entrusted to it :

- Issues relating to peripheral areas and resolution of conflicts;
- Approval of guidelines for planning, building controls and aesthetics;
- Matters relating to sharing of mineral water and other resources between different local bodies including *panchayats* within the district;
- Issues relating to sources of water supply, sites of disposal of sewage, solid waste, etc.,
- Formulating plans for development of integrated infrastructure like water supply schemes which would serve peripheral village areas and the main city;
- Overlapping functions between *panchayats* and urban local bodies in the district and resolution of conflicts:
- Formulating operational guidelines for planning and location of agricultural markets and *mandies* in towns; and
- Scrutinizing of investment allocation on an annual basis for the local bodies in the district.

6. METROPOLITAN PLANNING COMMITTEE

Like the DPC, there is a provision for the constitution of a committee for metropolitan planning for every metropolitan area to prepare a draft development plan under Article 243-ZE. The composition of the members of the committee is left to the discretion of the state government although it is specifically provided that 66 percent of the members of the committee are to be elected from an electoral college comprising of the elected members of the municipalities and chairpersons of the *panchayats* in proportion to the ratio between the population of the municipalities and the *panchayats*. The representation of the central government and the organizations and institutions is also to be provided by the state government through legislation.

There are 23 metropolitan cities in the country where the metropolitan area would include not only the main city corporation but also a number of other local bodies, both rural and urban, surrounding the main city corporation. By the turn of the century, this number may be about 40. There is every justification to ensure systematic and regulated development of the fringe areas which are influenced by the metropolitan areas and proper plans are required to be drawn

up along with plans of the main city. Today Metropolitan Development Authorities have been constituted in the metropolitan areas either under the State Town Planning Act or separate statute and the functions assigned to them differ from case to case. While some of them are planning bodies, others are entrusted with executive functions of implementing major schemes. In fact, there is no proper and responsive planning mechanism which takes care of the interaction between the various local bodies – rural and urban in such metropolitan areas. In any case they are not democratic and responsive institutions and are largely nominated by the government and the opinions of local bodies in the metropolitan area are not properly articulated.

With a view to imparting a more democratic character to such planning process, the constitution amendment has provided MPC for every metropolitan area which are multi-urban and multi-district. This committee shall prepare a draft development plan by taking into account the plans prepared by the municipalities and the *panchayats* in the metropolitan areas, matters of common interest, overall objectives and priorities set by the central government and state government concerned and the nature and extent of investments which are to be made by the governments. The remaining one-third of the members could be drawn from the central government departments and concerned state government departments, President of the Chamber of Commerce and Industry, experts in the field of town planning, municipal administration, engineering and the concerned MLA re-presenting the metropolitan area. The constitution amendment has left the choice of the Chairperson of this committee to the discretion of the state government.

With regard to the functions of the MPC, it would scrutinize the development plans of the different urban local bodies and the *panchayats* in relation to the spatial and economic dimensions of the metropolitan areas as a whole and then recommend changes in their development plans. It would also go into the dynamics of urbanization taking place in the metropolitan area, decide on the transition of village *panchayats* to urban local bodies i.e. *Nagar Panchayat* in a phased manner. The investment plan of these local bodies would require to be coordinated and the MPC would provide a forum for the resolution of conflicts between different local bodies. The major investment projects of the central government as also the state government in the area would also be coordinated by the MPC.

With regard to the Chairperson of the MPC, he could either be elected by the its members or alternatively, the Minister In charge of Urban Development in the state could be designated as its Chairman. The Chief Town Planner of the State and the concerned Divisional Commissioner should also be represented on the MPC so that the ready cooperation of the departments in the implementation of the various provisions of the plan could be ensured. There is a definite advantage in associating the State Planning Commission on the MPC so that spatial dimensions of economic development plans such as location of important economic activities or dispersal of certain activities from tie metropolitan areas could be better visualized and coordinated within the overall framework of economic development, priorities and resources obtaining in the metropolitan area.

The MPC envisaged in the Constitution Amendment does not cover metropolitan areas which may even cut across state boundaries and be multi-state, multi-district and multi-urban bodies. Such MPC would need to be constituted by the Government of India by following the procedure laid down in the Constitution.

7. PROVISIONS OF MODEL LAW AND 74TH C.A.A

The Model Law envisages the establishment of a statutory State Town Planning Board to advise the state government to coordinate developmental activities at the state and local levels and to direct programs in matters relating to urban and regional planning in the state. The composition of the Board, is also given which envisages that it would be presided over by the Minister-Incharge of Urban Development in the state and includes the Vice-Chairman who is to be the Deputy Chairman of the State Planning Commission and has various departmental heads as ex-officio members with the Chief Town Planner as a Secretary to the Board is expected to analyze and inter-relate the information received against the background of existing conditions and proposals underway both in investment terms as well as spatial terms and present to the Board a clear statement of the programs and their inter-relationship. Down below there is a State Town and Country Planning Department and its administrative set up varies from state to state. In most states, Town and Country Planning Departments have been placed with the Local Self Government departments. In some cases it is with the development department or even with the PWD who do not have much affinity with town and country planning as it is an execution agency and not a planning agency except for local layouts.

The planning and development process is conceived in three stages namely, preparation and approval of the development plan, enforcement of the development plan and the carrying out of the schemes of development and improvement conceived in the development plan. The model law deals with all the three stages. The planning function is an obligatory function and the object of inclusion of the development functions in the Model Law is not to replace the existing developmental agencies already operating in the planning area or the agencies which may be subsequently set up to undertake large scale developmental works. It is not conceivable for one agency to undertake all types of development. It is intended to enable the planning authority to undertake development when there is no development agency in the planning area or the existing agencies are unable to undertake development of the type envisaged under the plan. The plan preparation, plan approval, plan enforcement, plan review and plan revision can be entrusted to Planning Authority set up under it, but with regard to plan approval and plan enforcement, either an existing agency or altogether a new body could be set up for the purpose. Thus, with the 74th Constitution amendment, if the state governments decide to entrust the municipal bodies with the planning process, they could be appointed as a planning authority under the State Town Planning Act. However, in case the existing agency should be unable to undertake this task on account of limited jurisdiction, organizational inadequacies, resources, etc., separate planning authority would become necessary to be set up which should have jurisdiction extending beyond municipal limits if necessary. Most of the states have adopted this provision in their Acts.

8. EXPERIENCE OF STATES WITH REFERENCE TO 73RD AND 74TH C.A.A.

It has been experienced that except in the case of bigger local bodies such as Municipal Corporations, most of the local authorities have, in fact, failed to undertake this task and in many cases the development plans have had to be prepared by the State Town Planning Departments through the statutory responsibility for the preparation of the Plan vested with local bodies. With this thing in mind, the Madhya Pradesh Government had centralized all planning work under

their act and State Town Planning Department has been designated as the planning authority for all these cities in the state. The Town Planning Units are set up at the local level and the local bodies are associated with the planning process. It could be criticized on the grounds of limiting local identification, initiative and response in plan formulation but it is necessary to bring all activities within the purview of planning so that developments involving local agencies and states are best coordinated while enforcing the plans. In Punjab, the development functions are centralized at the state level leaving planning to be done at the local level, just the opposite of what Madhya Pradesh has done. The justification for this is inability at the local level to undertake any development for want of financial resources and technical competence. This has also governed Haryana's policies for urban development planning which has been relegated a secondary role and is left to the local body. In case of Maharashtra, regional plans were being prepared for metropolitan regions as also for district regions through adhoc bodies constituted under the provisions of the Maharashtra Municipalities Act, 1965 read with the Maharashtra Regional and Town Planning Act, 1966. The planners in the state under the provisions of the Maharashtra Municipalities Act, 1965 read with the Maharashtra Regional and Planning Act, 1966 are not only responsible for the preparation of development plans but with the taxation laws also. They are authorized valuation officers for the purpose of property taxes and the Chief Executive of the Municipal body has relatively less role than the state town planners.

In the case of Karnataka, the local planning areas are declared under the State Town Planning Act and planning authorities are constituted. In cases where planning authority is not constituted for a local planning area, the local authority having jurisdiction over such local planning area is designated as the planning authority. Under the Karnataka Urban Development Authorities Act, 1987 urban development authorities have been constituted for 20 urban areas in addition to Bangalore. Where the local planning area involves more than one local planning authority and development activities come under the administration of different local authorities, under development authorities for the whole of the planning area are constituted.

The role and responsibility of the State Town Planning Department has acquired a new dimension in view of the 74th Constitution Amendment. The municipalities, be it a *Nagar Panchayat*, Municipal Council or a Municipal Corporation and the *panchayats* in the state would be required to prepare master plans for their areas which have to be consolidated at the district level by the DPC by taking an over all view of the district as a whole and the rural urban interface and allocation of investments. Similarly, for metropolitan areas, the MPC would scrutinize the plans of the urban local bodies and *panchayats* in the metropolitan area in relation to the economic and spatial dimensions of development and prepare a draft metropolitan plan. In all these activities, the state town planning department would be responsible for advising and assisting in the preparation of Plans by all these statutory bodies and also advise the State on all matters relating to town, district and metropolitan planning and development within the State. The Chief Town Planner as a Secretary of the State Town Planning Board would be responsible for advising, the Board on physical planning and development, economic and social development programs undertaken by the State, policy guidance and sectoral planning. The State Town Planning Department would render assistance in scrutinizing the development plans / schemes and guide and direct the work of planning and development in the State. In case of default in the preparation of development plans by the municipal bodies and the *panchayats*, DPC and MPC, the State Town Planning

Department may be directed to prepare the development plans at the cost of the concerned planning bodies. The State Town Planning Department would continue to be instrumental in seeing as to what extent the regional dimensions of the plans have been conceived and satisfied.

As a follow up action of the Resolution passed by the Central Council of LSG meeting held on 7th May, 1984 many states have amended their municipal / town planning Acts to provide for the constitution of district planning committee, metropolitan planning committee (as the case may be) and entrusted the preparation of plans of economic development and social justice by the municipalities and the municipal corporations. In doing so, the requirement of the Constitution (74th) Amendment Act, are met in the strict sense of the term but the details regarding composition, functions, responsibilities, financial resources, etc., need to be worked out for which preparatory action and policy decisions by the state governments has to proceed before legislative measures are taken. A closer look at the enabling provisions made by the States makes it evident that a lot of work is required to be done in this regard. There is a certain amount of disinclination to devolve functions upon the local bodies as envisaged in the Twelfth Schedule. The work done so far to amend the State Acts is more or less a patch work than undertaking a new legislation. It is quite clear that performance of the functions like urban poverty alleviation, planning for economic and social development, environmental protection and promotion of ecological aspects would need a much strong financial capability and more manpower personnel which the municipal bodies are utterly lacking today.

Yet another aspect relating to district planning committee as envisaged in the Constitution (74th) Amendment is that while 74th Amendment contains detailed provisions for consolidation of plans prepared by the *panchayats* and the municipalities in the district, there is no reference in the 73rd amendment about it as to how the *Panchayati Raj* Institutions are to consolidate the plans. Recently, the Allahabad High Court struck down the U.P. *Panchayati Raj* Act as it was held to be against the spirit of the 73rd constitution amendment. It provides an opportunity to examine whether the problem lies in the U.P. Act or the 73rd Amendment itself. The problem has a bearing on other states as well.

9. CONCLUSIONS

In fact the constitution amendment seeks to carve out a third tier of local self government out of the ambit of the state government. The loss of powers of the state government is the gain of the *Panchayats* and they lose in the process. This throws the major issue whether the *Panchayat Raj* institutions can grow in conflict with the State Government. The active support of the state governments is a prerequisite for the success of the *Panchayati Raj* Institutions. The remedy lies in devolving powers and functions to these institutions without diluting or impinging on the powers of the state government. At the same time, the state governments may also hopefully respond to the new environment generated by the Constitution 73rd and 74th Amendments to demonstrate to the world the emergence of a vibrant India in which the third tier of democratic local self government is transformed into a reality.

REFERENCES

Government of India, Ministry of Urban Development (1992) *The Constitution Seventy-Fourth Amendment Act*
Government of India, Ministry of Urban Development (1992) *The Constitution Seventy-Third Amendment Act*

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CONSTITUTION 74TH AMENDMENT ACT, 1992 AND ROLE OF DEVELOPMENT AUTHORITIES, AND TOWN PLANNING DEPARTMENTS

Abstract

Constitution 74th Amendment Act, 1992, is indeed, a first step in the process of devolution of power to the people at the grass-root level, to plan for themselves and participate in the decision making process. In fact the urban local self-government have not only received constitutional sanction by this Amendment but important provisions have been made for this level of government by increasing their functional domain. However, it is expected that this would form the basis for improving the financial health of the municipal bodies, rationalize their structure and functions and ensure a greater degree of meaningful involvement at local level, at the same time it is also important to note that local bodies at present are not equipped with adequate and trained manpower to perform these new functions assigned to them, therefore, it is necessary that Special Function Agencies and Town and Country Planning Departments Operating in the municipal areas which have desired level of expertise be allowed to continue.

1. INTRODUCTION

This paper attempts to examine the provisions of the Constitution 74th Amendment Act and its impact on state, municipal and town planning acts and brings to light the various changes which the state governments may consider necessary to make their laws consistent with this constitutional obligation. It is hoped that it may be of interest to professionals and others and provide some useful hints when they are engaged in this exercise to be completed within the stipulated time, which expires on 31st May, 1994.

Since the passing of the Constitution (74th) Amendment Act, which received the assent of the President on 20th, April 1993 and came into force with effect from 1st June, 1993, there has been increasing interest and a growing national consciousness of the need and importance of amending the existing laws on municipalities and other state acts to bring them in conformity with the provisions of the Constitution Amendment Act. Article 243-ZF of the Constitution Amendment Act has laid down a time limit of one year by which the laws are required to be amended from the commencement of the Act, which expires on 31st May, 1994. Of course until that time the existing laws would continue to be valid. Following this constitutional obligation to amend the laws within the stipulated time, the state governments are examining their existing laws on the subject and some of them have even made amendments to their Acts. The statement of objects and reasons appended to the Bill has referred to the various inadequacies in the existing municipal laws, namely failure to hold regular elections for an indefinite period, resulting in prolonged super-sessions and suspensions, inadequate devolution of powers and functions, which rendered the state urban local bodies weak and ineffective. All these factors crippled these democratic units of self-government and with a view to making them effective and vibrant urban local self-government units, the Constitution 74th Amendment Act introduced a new part namely IX-A in the Constitution which deals with the matters relating to municipalities such as structure and composition of municipalities, their powers and functions, finances and planning at the municipal, district and metropolitan levels.

The Institute of Town Planners, India (ITPI) the apex body of professional town planners with over 1400 members spread all over the country and overseas, being fully conscious of its role

and responsibility to the people to render help for the orderly development of rural and urban settlements on sound town and country planning principles and realising the need and urgency in the matter, gave systematic thought to this important constitution Amendment and its impact on State Municipal and Town Planning Acts, and also organised two important national level workshops, The Regional Chapters of ITPI also organised similar workshops at regional levels which stimulated thinking on the subject and created awareness among the people from all walks of life. Based on the cumulative thinking and expertise built in this process, certain model Guidelines have been formulated by ITPI for the consideration of the state governments to amend their existing municipal and other acts with suitable modifications keeping in view their individual requirements.

2. CLASSIFICATION OF LOCAL BODIES

The Constitution Amendment, has introduced a uniform 3-tier system of government at the local level by providing classification of urban local bodies as *Nagar Panchayat*, Municipal Council for small urban area and Municipal Corporation for larger urban areas. Article 243-Q has prescribed parameters for classification of urban local bodies namely, population of the area, density of population therein, revenue generated for the local administration, percentage of non-agricultural activities, and economic importance of such other factors as the state government may consider fit. While the application of these parameters for classification of urban local bodies into three categories is to be determined by the state government, the details, are required to be worked out by the state government. For example, the *Nagar Panchayat* is to be constituted for a transitional area i.e., an area in transition from a rural area to an urban area, a Municipal Council for a smaller urban area and a Municipal Corporation for a larger urban area. It is suggested that population of 5000 which is also laid down by the Census of India should be the minimum population for a transitional area. But it is not merely population that should determine the classification but there are other factors as stated in the 74th Amendment which should be applied before an area is designated as *Nagar Panchayat*. The *Nagar Panchayat* is in fact, basically rural in character which over a period of time develops urban characteristics. It would need to be seriously considered in individual cases that at what stage a rural area starts assuming an urban character. Similarly for applying the parameter of population for constituting Municipal Councils for small urban areas, the financial base of these small and medium towns should also be taken into account. The Guidelines for the centrally sponsored scheme of IDSMT stipulated that the towns in the population range of 50,000 to 3,00,000 have a stronger financial base than the town below 50,000, and are more suitable to be developed as counter magnets to bigger towns. In view of this, the minimum population of 50,000 is suggested and the towns with population of 3,00,000 and above are suggested to be adopted for bigger urban areas. The norms with regard to density, percentage of non-agricultural workers and revenue generated should cumulatively be considered for the classifications of the urban areas into a *Nagar Panchayat*, Municipal Council and Municipal Corporation.

3. COMPOSITION AND FUNCTION OF MUNICIPALITIES

With regard to the composition and functions of municipalities, the Constitution Amendment has given a broad framework within which the state governments are to provide a legislative

framework in their State Acts. Under Article 243-W, a new schedule called Twelfth Schedule has been added for the first time which has listed 18 functions. The existing State Municipal Acts contain an elaborate list of mandatory and discretionary functions and many of the functions listed in the Twelfth Schedule, except the first three functions, are enumerated in the state Municipal Acts. The Constitution Amendment has not made any distinction between the mandatory functions and the discretionary functions of the urban local bodies. It would be seen that, over a period of time, the functions of the State have transformed into socio-economic functions and it is a welfare - state rather than limited to police functions. It is only proper that this transformation percolates to the local levels. Perhaps, the intention behind including functions like slum improvement and upgradation and urban poverty alleviation in the Twelfth Schedule is for carrying forward this transformation at the grass-root level.

The newly added Part IX-A to the Constitution has, for the first time, introduced spatial and environmental planning in the planning system at various levels right from *Nagar Panchayat* to Metropolitan regions. Until now, the planning function was derived from the State Town Planning Acts / Improvement Trust Acts for which urban development authorities and special function agencies have been created. Municipal bodies were required to take up various types of town improvement schemes under the municipal and improvement trust acts. Since the planning function is the primary responsibility of the local bodies and these bodies are now expected to plan, enforce and implement the plans, it is only logical that the functions like urban planning including town planning, regulation of land uses and construction of buildings and planning for economic and social development should form part of the obligatory functions of urban local bodies as these are no longer to be derived from the Town Planning Acts.

With regard to the composition of Municipalities, Article 243-R has prescribed a predominantly more representative and democratically elected frame within which the state governments are to constitute the municipal bodies. These provisions are not mandatory and are only in the nature of guidelines which the state governments may consider. It is suggested in this regard that inclusion of experts having special knowledge and experience in municipal administration which would include finance, engineering, town planning and administration would help in building up expertise which is the backbone of sound municipal management. The quality of municipal engineering and delivery of services would greatly improve by providing such experts and tone up the municipal administration.

4. CONSTITUTION OF WARD COMMITTEES

Article 243-S provides for the constitution of Ward Committees consisting of one or more Wards within the territorial area of the municipalities having a population of 3 lakh or more in each case. The Constitution Amendment has left to the state government to decide the composition, the territorial area of such Ward Committees, as also the manner in which the seats in such ward committees are to be filled up. While it is a welcome step to provide for this level of organisation for closer inter-action of citizens in the city management system, it is felt that the functions and duties of such Committees are also spelt out so that its objectives are better visualised and satisfied. The suggestive areas / functions of the Ward Committees could be:

- To ensure that the municipality is fully responsive to the aspirations of the local residents of the ward;
- To ensure greater citizen participation in the servicing and development of their respective local area;
- To serve as a medium for the execution of local works through allocated funds and contributions involving voluntary agencies;
- To identify lacunae and lapses in the enforcement of
 - building code;
 - local component of the town Development Plan and development controls; and
 - maintenance of municipal services, facilities and amenities, and call upon the relevant bodies for action; and
- To serve as a forum for residents to express their grievances related to above functions.

5. DISTRICT PLANNING COMMITTEES

With regard to district planning Article 243-ZD provides for the constitution of a District Planning Committee (DPC) to consolidate the plans prepared by the *Panchayats* and Municipalities in the district and prepare a Draft Development Plan for the district as a whole. This is a mandatory provision to be carried out by the state government. The Constitution Amendment has, however, provided certain guidelines for the composition of the DPC which may be kept in view by the State Government. However, 80 % of the total number of members of DPC are required to be elected from amongst the elected members of *panchayats* and the Municipalities in the district, in proportion to the ratio between the population of the rural areas and the urban areas in the district.

It may be pertinent to mention that the Model Regional Town Planning and Development Law formulated by the Central Town and Country Planning Organisation in consultation with Institute of Town Planner, India recommended to the States, adoption of such changes as may suit individual requirements, and has devoted an exclusive chapter dealing with Regional Planning, giving complete legislative sanction by constituting the statutory Regional Planning and Development Authorities (RPDA), for the preparation, processing, approval, enforcement, execution and implementation of Development Plans. This Authority is required to coordinate the plans and programs of the development agencies operating in the region. Looking into the functions of Regional Planning and Development Authorities in the context of the 74th Amendment, it appears to be akin to the District Planning Committee. The distinguishing feature of the two sets is that while RPDA is to prepare the Regional Plan by carrying out surveys and land use maps, the DPC is to consolidate the plans already prepared by the *Panchayats* and Municipalities in the district. The DPC, as envisaged in the Constitution Amendment, presupposes the existence of Plans for the *panchayats* and the municipalities in the area and this Committee is required to take an overall view of the whole area consisting of rural as well as urban areas in the district within the parameters stated in Article 243ZD.

5.1 Composition of DPCs

The DPC is certainly more responsive to the people as 80 % of the members are elected, while in the remaining 20 %, experts in the field of finance, engineering, spatial planning, environment and ex-officio departmental district level heads, could be brought in. The Member (Spatial Planning) should be an Urban and Regional Planner and is a full time officer and Member-Secretary of the DPC. This has been provided both by the Model Law as also in the recommendations which emerged out of the two national level workshops organised by ITPI. The urban and regional planner as its Member-Secretary would be better equipped to assist the DPC in scrutinising the Development Plans / Schemes and conceive the regional dimensions in the light of the resources obtaining at the district level, identify the priority areas and work out a phased program of development within the framework of the annual / five year action plans of the states.

The DPC is envisaged to be headed by a Chairman who is to be elected from amongst its members (80 % elected from amongst the elected members of *Panchayats* and Municipalities in proportion to the ratio between the urban and rural population in the district), and other members to be appointed by the state government, (having special knowledge and experience in finance, spatial planning, engineering, administration and environment). Although it is rather difficult to prescribe a rigid composition of DPC as the levels of urbanisation and the nature, extent and problems of the hinterland and the main city, differ from case to case, the suggested composition is intended to serve as a guideline for the states to consider.

5.2 Function of DPC

With regard to the functions which could be entrusted to the DPC, the Constitution Amendment has left this matter to the state governments to decide allowing sufficient flexibility to suit individual situations. However, certain matters of common interest between the urban and rural areas have been listed in the Constitution Amendment which the DPC is enjoined to take into account while preparing the Draft Development Plan of the district. Keeping in view certain important questions relating to urban and rural interface, certain guidelines are proposed while entrusting functions to the DPC. These are only illustrative and many more such aspects could be considered for assignment to DPC. The following aspects / functions could be entrusted to DPC:

- Issues relating to peripheral areas and resolution of conflicts;
- Approval of guidelines for planning, building controls and aesthetics;
- Matters relating to sharing of minerals, water and other resources between different local bodies including *panchayats* within the district;
- Issues relating to sources of water supply, sites of disposal of sewage, solid waste, etc.,
- Formulating plans for development of integrated infrastructure like water supply schemes which would serve peripheral village areas and the main city;
- Overlapping functions between *panchayats* and urban local bodies in the district and resolution of conflicts;
- Formulating operational guidelines for planning and location of agricultural market and *mandies* in towns; and

- Scrutinising investment allocation on an annual basis for the local bodies in the district.

6. METROPOLITAN PLANNING COMMITTEES

Like the DPC, there is also a provision for the constitution of Metropolitan Planning Committee (MPC) under Article 243-ZE of the Constitution Amendment, for every metropolitan area to prepare a Draft Development Plan. The composition and the manner of filling up the seats in the Committee is to be determined by the state government within the parameters prescribed in the Amendment. Two thirds of the members of the MPC are to be elected from the elected members of the municipalities and chair-persons of the *panchayats*, in proportion to the ratio between the population of the municipalities and the *panchayats*. Today Metropolitan Planning and Development Authorities have been constituted either under the State Town Planning Acts or under a separate Act and their functions also differ. While some of them are entrusted with executive functions of implementing major schemes, others are only planning bodies. These are not responsive democratic institutions being largely nominated bodies. In the absence of proper and responsive mechanism to take care of the interaction among the various local bodies and agencies operating in such metropolitan areas, it is, therefore, a welcome step that MPCs which impart a more democratic character to the planning process are to be constituted for the metropolitan areas. These MPCs are multi-urban and multi-district and are to prepare a Draft Development Plan of Metropolitan Area by taking into account the plans prepared by the municipalities and the *panchayats*, matters of common interest, overall objectives and priorities setup by the central government and the state government concerned, keeping in view the nature and the extent of investment envisaged, etc.

The provisions contained in the Constitution Amendment for MPC do not cover metropolitan areas which are multi-state, for which the procedure laid down by the Constitution of India is required to be followed like the NCR Planning Board.

The MPC should scrutinize the Development Plans of the participating municipalities and *panchayats* in the light of spatial and economic dimensions of the area as a whole which would require an in depth analysis of the dynamics of urbanisation together with the coordination of major investment projects of the various agencies – public and private, including those funded by international agencies like World Bank, etc.

6.1 Function of MPCs

The functions of MPCs suggested are in the nature of broad guidelines for the state government to consider while entrusting them the task of planning and coordinated development in the metropolitan area. These are:

- Preparation of Draft Development Plan of Metropolitan Area;
- Spatial coordination of plans prepared by local bodies and recommended modifications in local area plan, if any, taking an overall view;
- Sorting of matters relating to sharing of water, physical and natural resources among various local bodies;

- Formation of policies and programs for integrated development of infrastructure such as major roads, trunk services, electricity, telecommunications, etc.,
- Study of dynamics of urban growth and preparation of a Perspective Plan with long term development objectives, policies and priorities;
- To serve as a link to disseminate development objectives, policies and priorities of central and state governments among various local bodies by formulating operational guidelines so that the same may be considered while preparing these respective local Plans;
- To prepare Investment Plans for regional infrastructure development involving more than one local body or agencies of central and state governments;
- Coordination of Investment Plans of various local bodies and provide a forum to resolve inter-local bodies conflicts, if any; and
- Resolution of conflicts relating to overlapping functions, if any.

As regards the composition of MPC, a suggested model is indicated below within the parameters prescribed by the Constitution Amendment. It is proposed to be headed by the Chief Minister / Minister in-charge of Urban Development in the State so that the ready cooperation of the departments concerned in metropolitan development is ensured and the procedural delays in execution are minimised. The Spatial Planner who would be the Chief Planner of MPC and a full time officer and Member-Secretary has been suggested so that he is in a position to scrutinise the development plans / schemes of the various local authorities and agencies in the metropolitan area and present a coordinated picture within the framework of the Regional Plan. In many states like Karnataka, Tamil Nadu, Pondicherry, Nagaland and Goa the Town Planner is the Member-Secretary of either the Town Planning Board at the state level or the Planning and Development Authorities constituted under the Town Planning Act. The Model Law also contains a similar provision, for composition of MPCs as under:

- Chairman - Chief Minister or Minister In charge of Urban Development in the State;
- Vice-Chairman - to be elected from amongst members as below who will be the full time chief executive of the committee;
- 20-Members - to be elected by and from amongst the elected members of municipalities and chairpersons of the *panchayats* in the metropolitan area in proportion to population of the municipalities and *panchayats*;
- Nominee of the Secretary, Urban Development, Government of India;
- Secretary, Urban Development of the State;
- Municipal Commissioner - to be nominated by the State Government;
- Secretary, State Industries Department;
- Director of Town Planning / State Chief Planner;
- A Member - to be appointed by the State Government having special knowledge of Transportation, Environmental Planning, or Health;
- Member (Finance), (Full-time);

- Member (Engineering), (Full-time); and
- Member (Spatial Planning) - who shall be a Town and Regional Planner of the rank of Chief Town Planner, and he shall be Member-Secretary of the Committee.

7. ROLE OF DEVELOPMENT AUTHORITIES AND SPECIAL FUNCTION AGENCIES

As a follow-up of the Constitution 74th Amendment Act, the DPC and the MPC would be required to be set up in the district and the metropolitan area respectively. These are the mandatory provisions and with the constitution of these permanent statutory Committees, the role and functions of the existing Urban Development Authorities and special function agencies would need to be reviewed to avoid any possible confusion or conflict in operational jurisdiction. In this connection, it may be necessary to state that the Constitution Amendment is silent about the role of the existing Urban Development Authorities. Experience has demonstrated that the majority of the local authorities, except in the case of bigger local bodies, could not, in fact, undertake the planning function and the Development Plans have had to be prepared by the State Town Planning Departments or Urban Planning and Development Authorities set up for the purpose, even though the statutory responsibility for the preparation of the Plan had been vested in the local authorities under acts concerned. The Model Law envisaged that the municipal bodies should be entrusted with the function of Plan preparation, Plan approval, Plan enforcement and Plan implementation and if the existing local bodies prove unable to take up this task on account of organisational inadequacies, limited jurisdiction, resources, etc., separate Planning and Development Authorities may have to be constituted. So Urban Development Authorities gradually came to be set up to meet this demand. With the instrument of the planning function coupled with adequate powers, manpower and financial resources and responsibility to the municipal bodies, the existing Urban Development Authorities need to coordinate their activities with the municipal bodies so that the infrastructure already built up could be utilised. This would depend on the size of the local bodies and the set up of the Urban Development Authorities in that area.

At the district level where DPC would be largely responsible in coordinating all physical developments in its area, the existing Development Authorities operating in the DPC area would be able to provide necessary technical and secretarial infrastructure to the DPC. The statutory status of the Urban Development Authorities, in the interest of eliminating overlapping functions in the area, would need to be reviewed,

As regards the special function agencies like Housing Board, Electricity Board, etc., these agencies have acquirement management skills gradually which are not easily available in the municipal setup. Their function would be complementary to the main functions of the Municipal Councils who are primarily responsible for planning, enforcement and implementation of Plans. The municipal bodies would be largely engaged in the day to day activities and would not have either the time or the inclination to undertake development of such spatial activities. In view of this, the special function agencies operating in the municipal areas should be allowed to continue.

8. ROLE OF STATE TOWN PLANNING DEPARTMENTS

Another important issue relates to the role and responsibility of the State Town Planning Departments in the context of the Constitution Amendment. In fact, it has acquired a new

dimension. The municipal bodies, be it a *Nagar Panchayat* or Municipal Corporation, are required to prepare a Master Plan for their area, which would be consolidated at the district level by the DPC by taking an overall view of the district as a whole and the rural urban interface and allocation of investments. Similarly, for metropolitan areas, the MPC would scrutinise the plans of the urban local bodies and *Panchayats* in the metropolitan area in relation to the economic and spatial dimensions of development and prepare draft Metropolitan Department Plan. In all these activities the State Town Planning Department would be responsible for advising and assisting in the preparation of Plans by all these statutory bodies and advise the State on matters relating to country, town, district and metropolitan planning and development within the State. The Chief Town Planner as the statutory Member-Secretary of the State Town Planning Board, would be responsible for advising the State Town Planning Board on physical planning and development, economic and social development programs undertaken by the State, policy guidance and sectoral Planning. The State Town Planning Department may have to prepare the Plans in case of default by the municipal bodies. The department has jurisdiction over the entire state and is in a better position to guide the work of the municipal bodies. When the Plans are forwarded by the DPC and the MPC to the State Government, the State Town Planning Department would be the better agency to assist the State in getting the Plans statutorily approved by undergoing due process of law. The urban strategy has to be evolved at the State level which would guide developments in future and the State Town Planning Department has to assist in this task. The priority towns for various central and state sponsored projects and the preparation of project reports is the responsibility of State Town and Country Planning Department. The inter-district Plans prepared by two or more DPCs would need to be seen in the context of overall development in the State and this function is better addressed to the State Town Planning Department, which would be responsible for conceiving and satisfying its regional dimensions.

9. CONCLUSIONS

Constitution (74th) Amendment Act, 1992, is indeed, a first step in the process of devolution of power to the people at the grass-root level, to plan for themselves and participate in the decision making process. The urban local self-government have not only received constitutional sanction by this Amendment but important provisions have been made for this level of government. It is expected that this would form the basis for improving the financial health of the municipal bodies, rationalise their structure and functions and ensure a greater degree of meaningful involvement at local levels. However Special function agencies operating in the municipal areas be allowed to continue, so also town and country planning departments, as local bodies are not adequately equipped to perform the functions assigned by the Constitution 74th Amendment.

REFERENCE

Government of India, Ministry of Urban Development (1992) *The Constitution Seventy-Fourth Amendment Act*

22 | APPLICATION OF REMOTE SENSING TECHNIQUE AS A TOOL FOR PREPARATION OF URBAN MAPS FOR SUSTAINABLE ENVIRONMENT

Abstract

The rapid growth of urban areas both physically and demographically has activated changes in terms of town structure, land use pattern, physical infrastructure and socio-economic activities which have a direct bearing on the total urban environment. But mapping of these towns and cities has not kept pace with the growth, as a result of which many towns do not have up to date base maps. Mapping of all physical changes is necessary for effective land use planning and environmental improvement of urban areas. To prepare the base maps for more than 4000 urban settlements by conventional methods is time consuming and expensive, therefore the use of modern techniques of aerial photography, Remote Sensing, and Geographic Information System be utilized, this would facilitate updating of existing base maps, as well.

1. INTRODUCTION

Man, while living in human settlements whether rural or urban, creates a man-made environment and in the process disturbs the natural environment system. The environmental problems in rural habitats often arise through use, overuse and misuse of natural resources which are caused due to poverty or lack of alternatives; while environmental problems in urban settlements occur due to transformation of natural environment into man-made environment. Between rural and urban, settlements particularly larger ones, affect the natural environment most, because of the huge land mass they occupy having further tendency to expand rapidly, devouring good agricultural land, besides, producing a large quantity of waste which has a wider adverse impact on the surrounding region as well.

India, has 15 % of the world's population which is squeezed into 2.4 % of the world's total land mass. With 844 million persons, according to the 1991 Census, India is the second highest populated country after China. The urbanisation level of 25.72 per cent in the country may not appear high as compared to the urbanisation level of the developed countries of Europe and North America, but its sheer size of 217 million is gigantic and exceeds the total population of many countries of the world. There has been an eight fold increase in the urban population of India from 25 million in 1901 to 217 million in 1991. The urban population of 217 million is spread over in 4689 towns of different sizes and poses a greater challenge for managing the urban environment in the country. In the planning process, town planners tend to shape the physical environment of towns and cities for better living and efficient functioning. However, in view of constraints, particularly inadequacy of up to date reliable base maps, planners face lot of problems in creating the desired built environment, as large scale base maps are not available for all urban areas showing exact spread of the towns along with physical and environmental features. It is here that the emerging techniques of satellite based remote sensing and aerial photography in conjunction with conventional techniques can help in making available up to date base maps for effective planning of settlements to shape the sustainable development of urban environment.

2. THE URBAN SCENARIO

Besides structure and morphology of towns, the quality of urban environment is related to the size of settlements and general urbanisation pattern. Since the beginning of the 20th century, the pace of growth of urban population has accelerated both in terms of level, scale and magnitude, resulting in continuous accretion in size, number and area of urban settlements. During the last two decades 1971-91, the urban population in the country has almost doubled from 109 million to 217 million. This period has also witnessed considerable awareness for environmental protection in the country. The major increase of urban population has been confined to the existing settlements. If this trend of growth of urban population continues unabated, it is estimated that by the turn of the century about one-third of India's population would be living in urban areas.

There is uneven distribution of urban population in various sizes / classes of towns and cities. It is significant to note that 65 % of the urban population is concentrated in just 300 Class-I, urban agglomerations / towns, (having population of one lakh and above). The remaining large number of small and medium towns numbering 3468 have only 35 % of the urban population. Even among the Class-I category of towns, 23 metropolitan cities (population 10 lakh and above) dominate the urban scene by having almost one third of the urban population of the country. In the last four decades, the growth of large and metropolitan cities and their share in the urbanisation component has been increasing and this phenomenon is unlikely to change in the years to come.

Yet another facet of the process of urbanisation reveals considerable inter-regional and intra-regional variation in the growth of urban population as also in the level of urbanisation. The smaller states of Mizoram and Goa are at the top with regard to level of urbanisation, (46.20 % and 41.02 percent urban population respectively) followed by Maharashtra (34.40 %) Gujarat (34.20 %) and Tamil Nadu (30.90 %). At the lower end, are the states of Orissa (13.43 %), Bihar (13.17 %), Arunachal Pradesh (12.21 %), Assam (11.08 %), Sikkim (9.12 %) and Himachal Pradesh (8.70 %).

At the district level, nine districts in Himalayan and other hilly regions did not have any urban population, while in 93 districts the level of urban population ranged from 5 to 10 percent only. On the other hand there are 16 districts where the level of urbanisation is more than 60 %. The variation in urbanisation across different states and union territories ranges from 90 % to about 9 %, which is attributed to the regional pattern of growth in general and industrial development in particular. There is heavy urbanisation in a few areas of the country such as Calcutta conurbation, Bombay-Ahmedabad corridor; Punjab - Haryana; Upper Ganga Plain; Lower Ganga Plain; Sagar-Bhopal; Ratlam Plateau; Maharashtra; Goa; Karnataka coast; Kerala and Tamil Nadu and coastal Andhra Pradesh; Bangalore - Mysore belt and a few other isolated industrial pockets. There are also vast areas in the country which are almost devoid of urban settlements leading to an extremely low level of urbanisation of 5 to 10 percent.

The pattern of urbanisation is characterised by heavy concentration of economic activities and opportunities in a few selected urban pockets and if the existing spatial pattern of urbanisation continues, the, urban growth would get further concentrated, only in these areas. These clusters, which are presently highly urbanised, may reach a stage where the carrying capacity may not be able to sustain the high level of urbanisation. Hence, it is imperative to urbanise other areas in the country such as the Eastern Peninsular Region; the North-Eastern Region; Western Rajasthan;

Northern Bihar; Eastern Uttar Pradesh; etc., which are rich in resources and have the potential for urban infrastructure development.

The present trends also indicate that the process of urbanisation is irreversible unless interventions in the form of deliberate policy for directing the growth in the desired direction is implemented. The unprecedented scale and level of urbanisation in a relatively short period, as compared to the developed countries, has created serious environmental problems in our towns and cities. Settlement planning has to be based on environmental considerations and sound land use planning rather than land economics alone. In order to plan for the future, it is essential to assess the environmental implications of urban pattern at various levels.

3. ENVIRONMENTAL IMPLICATIONS

After the 1972, United Nations Conference on Human Environment in Stockholm, the issue of environment has moved into the mainstream and the entire international community has demonstrated the concern for it by studying the impact and implications of various developments. The phenomenal growth of urban population has strained urban services and severely affected all types of urban environment viz. physical, social, economic and aesthetic, in a majority of our settlements. The heavy concentration of population and activities in towns and cities particularly the larger ones, has resulted in the creation of foci which have adversely affected the natural environment. The affluence of the cities has led to an extravagant level of consumption which has resulted in depletion of non-renewable natural resources and dumping of waste. The foremost impact of urbanisation is discernible in the pattern of urban growth which is mostly in the form of urban sprawl. The physical expansion of cities means that precious peripheral agricultural land has been added to urban use at a rapid rate. In India, it is estimated that about 1.5 million hectares of good agricultural land has already been gobbled up by the ever growing towns and cities since 1951, and with the expected level of urbanisation another 0.8 million hectares of agricultural land may be converted to urban use by the turn of century.

The increase in the urbanisation level is accompanied by a rapid expansion of a number of very large cities. The regional impact of these large settlements has become more complex and extensive in the surrounding region resulting in depletion of natural resources and change in land use at a faster rate. All such activities taking place in the surrounding regions of the cities have proved detrimental to the environment as most of these activities are meant for meeting the immediate requirements of the core city and not the region as a whole. For instance, in the immediate vicinity of Delhi, brick kilns are quite common on agricultural land.

The ever increasing pressure of urban population particularly in large and metropolitan cities, which is generally not supplemented by infrastructure and an economic base has led to a deterioration in the quality of life. Consequently a large chunk of urban population is residing in shanties, slums and squatter settlements with degraded and sub-standard living conditions. A study conducted by TCPO estimated that on an average, one third of the population in metropolitan cities resides in slums and squatter settlements. If the current trend continues, 75 percent of Bombay's population will be living in slums at the turn of the century. The problem of slums is related to low per capita income and acute shortage of housing both in quantitative and qualitative terms. With the pace of urban growth, the face of urban India is rapidly changing. Bangalore, Pune and Dehradun which for long were considered cool, green and quiet cities are

turning into boom towns, characterised by pollution of various kinds. Similarly, hill towns such as Ooty, Mahabaleshwar, Darjeeling, Gangtok, Shillong, Mussoorie, Shimla, etc., are also facing the problem of explosive growth of population and tourist inflow. Forests in these areas have been destroyed and water crisis are common. Environmental implications of cities like Bangalore, Pune and Dehradun relate mainly to the changing functions of these cities from garden and institutional towns to industrial centers.

The massive increase in the number of people, coupled with inadequate infrastructure, has had a direct impact on the environmental quality of towns and cities. The disposal of garbage, solid waste and liquid effluent generated and produced by the concentration of human beings and activities in urban areas are the major aspects of environmental degradation. High density of population tends to consume every conceivable open space thereby disturbing the mass and space relationship, and the city's eco-system in particular. Most of the industrial cities in India generate industrial liquid waste between 8-16 % of the total city waste and it is estimated that by the end of this century, the volume of this waste may go up to half the volume of domestic sewage in cities. The huge quantity of waste generated by these cities causes air, water and land pollution. About 60 % of the atmospheric pollution is caused by vehicle exhaust. In Delhi, the average annual level of suspended particulate matter in the atmosphere is 8 to 10 times above the acceptable levels recommended by the WHO.

Other implications of such a level of urbanisation relate to traffic and transportation problems, deterioration of central and old areas of the towns / cities, inadequacy of services and utilities, excessive use of energy, etc. Even though environmental awareness has increased, environmental conditions have not improved. Keeping in view the relationship between environment and development, sound environmental planning principles and practices are required to be followed so as to achieve sustainable development. Surveys to study and analyse the precise nature and quantum of the urban environmental problems are the pre-requisites for any planning and development exercise. The emerging techniques of remote sensing are ideal for understanding the various facets of the urban environment and its implications on development.

4. NEED FOR PREPARATION OF BASE MAPS

The rapid growth of urban areas both physically and demographically has activated changes in terms of town structure, land use pattern, physical infrastructure and socio-economic activities which have a direct bearing on the total urban environment. But mapping of these towns and cities has not kept pace with the growth, as a result of which many towns do not have upto date base maps. Mapping of all these physical changes is necessary for effective land use planning and environmental improvement of urban areas. To prepare the base maps for more than 4000 urban settlements by conventional methods is time consuming and expensive. The use of modern techniques of aerial photography and remote sensing could be better utilized as this would also facilitate updating of existing base maps by adopting a computer based Geographic Information System. The National Commission on Urbanisation (1988) has also suggested the use of the techniques of remote sensing for urban planning and development, particularly in monitoring the dynamic aspects of the urban environment.

The preparation of base maps for urban centers is not a regular affair in our country but it is taken up as and when the need arises. For preparing Master Plans / Development Plans and for

carrying out other town planning exercises, base maps of the towns concerned are prepared generally on the basis of available topographical maps, city survey sheets, municipal and other departmental maps, etc., even though they are out dated. Of late, some of the State Town Planning Departments like Tamil Nadu, Andhra Pradesh, Gujarat, Madhya Pradesh, etc., have also started using aerial photos for preparation of base maps. It is estimated that by now about 1100 Master Plans / Development Plans have been prepared in the country. For these towns only, some sort of base maps are available which also requires updating in terms of changed land use information and extended coverage due to increase in the urbanizable limits, while the remainder of the towns do not have any kind of base map. It is believed that out of 300 Class-I cities, about sixty cities have base maps.

Mapping of physical changes in temporal and spatial frame is essential not only for effective land use planning but also for taking up development exercises. Generally, Survey of India topo-sheets are available in the scale of 1:50,000 and 1:250,000 and in some cases, the scale of 1:25,000. Such sheets are useful for regional planning but are not of much use for urban planning exercises, implementation of schemes and for maintenance purposes, etc. It may also be mentioned that these sheets are also not up to date.

In large cities, in the absence of up to date base maps and land records, some times infrastructure facilities are sought to be developed on lands which have already been diverted for some other purposes, roads are planned on land which is already under encroachment, etc. Thus, reliable and accurate base maps are the basic requirement for efficient land use planning and designing of urban infrastructure such as water supply, sewerage, traffic and transportation system.

Availability of proper base maps will have a far reaching impact on the entire system of land use planning and environmental management and in fact, accurate base maps along with proper land records could prove to be a useful resource for planning and developing the city as a self sufficient entity.

Incorporation of land related information i.e. use of plot / parcel, ownership, value, infrastructure availability, etc., on the base map itself will further enhance the utility of the base map for planning, implementation and maintenance purposes. Besides preparation of base map, its continuous updating and revision is yet another important aspect which requires to be built *in-situ*, in the planning process / mechanism. It would, therefore, be desirable, as mentioned earlier, to use modern techniques of aerial photography and remote sensing along with conventional methods for preparation of existing base maps and updating the same by adopting a computer based Geographic Information System. Keeping in view the backlog of maps for urban areas it is essential to speed up the preparation of such maps on a larger scale, a scheme on urban mapping has been taken up by the Ministry of Urban Development in the current Plan and TCPO has been entrusted with the task of implementation of the scheme.

Like any other mapping project, the stages of work involved in the preparation of base maps of urban areas would generally include:

- Acquisition of aerial photographs at large scale;
- Field work to collect ground control / truth data;
- Rectification of aerial photo and preparation of photo mosaics;

- Interpretation of aerial photographs and compiling of other necessary information from secondary sources for urban mapping;
- Preparation of fair maps for urban areas; and
- Printing of maps.

Urban maps need to be multi-purpose so that they can be used by various agencies like Town Planning Departments, Local Bodies, Public Works Department, Services and Utilities Agencies, Taxation Department, Directorate of Survey and Land Records, etc., for planning and monitoring of development and management of towns. These maps would also serve as an efficient base for land use planning and designing of urban infrastructure such as water supply, sewerage, traffic and transportation, etc. Additionally, the maps could be used as a base for cadastral mapping for property assessment and tax administration which will ultimately strengthen the financial base of local bodies. Various layers of information pertaining to particular towns can be created in the computer using Geographic Information System, which besides helping in efficient planning and development would serve as a permanent base in digital form for updating base maps from time to time by incorporating the data generated by the routine administrative system at the local level. The use of these maps which can be made by various organisation is given below:

Sl No.	Organization	Use
1.	Town Planning Department	Planning, analysis and preparation of development plans, Town Planning schemes, land pooling projects, layouts and site plans, etc.
2.	Development Authorities	
3.	Housing Board	
4.	Local Self Government	
5.	Utilities & Services Departments	Morphology of towns, slope analysis, population density, land use planning, development, management, implementation and monitoring of projects.
	(i) Water supply	
	(ii) Electricity	
	(iii) Drainage and Sewerage	
	(iv) Telecommunication	Land uses, activity zones, population density, crime zones etc.
	(v) Police Department	
	(vi) Health and Education Department	
	(vii) Tourism Department	Places of tourist interest, their location, facilities available and planning for better services and facilities.
6.	Census Department	Survey and analysis of data and presentation of findings.
7.	Universities and Research Institutes	Research work pertaining to Planning & Geography departments.
	Private organizations dealing with marketing sales, insurance, etc.	For field operations and field staff.

5. APPLICATION OF REMOTE SENSING TECHNIQUES

To improve the environmental conditions in our towns and cities the techniques of satellite remote sensing and aerial photography which provides synoptic view of earth can help effectively

in studying land and natural resources. Besides, for national land use perspective and policy it would be essential to get the correct status of urban land so as to facilitate the preparation of programs for urban areas and also formulate urban land use policy at national and regional levels. Satellite remote sensing can help in monitoring the growth of urban areas in terms of sprawl and extent in the country. Through this technique it would be possible to know as to what rate the agricultural land is being devoured annually by urban settlements.

The settlement pattern in our country is not evenly balanced as there are certain areas in the country which are devoid of urbanisation while some areas are heavily urbanised. To open up new areas for urbanisation, it would be necessary to study the existing natural resources and infrastructure base. With the help of remote sensing, an attempt could be made to study the general settlement pattern at the national and regional level to identify areas which are suitable for bringing them under urbanisation.

At the town level, location and extent of slums and squatter areas, shanties, *jhuggi-jhopries*, etc., needs to be identified in and around towns using large scale aerial photographs. This would be helpful in framing various slums upgradation programs. Detailed land use structure, physical and spatial elements of urban environment may also be studied with the help of aerial photographs which are the basic requirements for taking up various planning exercises for environmental improvement of urban areas.

6. CONCLUSIONS

Our towns and cities are expanding vertically as well as horizontally. The tendency of lateral expansion of town is quite common in spite of the fact that large chunks of vacant spaces are available within the town providing scope for re-densification. Considering the commercial value of urban land it would be advisable to use each parcel of buildable land judiciously both environmentally and in economic terms. Aerial photographs in this direction provides a three-dimensional view of urban structure and environmental features can be used as the best tool to study the deterioration of environmental conditions in towns and assess the environmental implications of various urban development programs being taken up which would serve as a base for environmental improvement of urban areas.

REFERENCES

- Census of India (1991) *Series-1, Paper-2 Provisional Population totals : Rural-Urban Distribution*.
Center for Science and Environment, New Delhi (1984-85) *The State of India's Environment 1984-85, the Second Citizen's Report*.
Government of India, Planning Commission, Eighth Five Year Plan 1992-97, Vol. II.

23 | AN APPROACH TO HILL AREA PLANNING AND DEVELOPMENT

Abstract

Hills as the natural bio-sphere reserves are of special significance both from ecological and economic point of view and need adequate attention for protecting their environment and development of resources, accordingly hill areas have been receiving the attention of concerned State Governments from time to time but the thrust for their development was given in the Fifth Five Year Plan when specific programs for hill area development were initiated. However, in order to have a tangible effect of these programs / schemes in achieving the major objective of ecological balance of hill areas, there is a need to integrate all the programs / scheme both horizontally and vertically. Considering sensitive and fragile eco-system of hills and mountains and their peculiar problems, development strategy as followed in the plains may not be fully applicable for hill environment, rather conservation oriented integrated development approach, would be more appropriate for planning and development of hill areas, the paper recommends.

1. INTRODUCTION

Hills and mountains, from time immemorial have influenced the life, culture and economy of the people in the country. They contain about 10 per cent of total population but, in fact almost half of the country's population, living or adjacent to the hilly and mountains area depend directly or indirectly on the resources of the hills. With the increasing pace of industrialisation and denudation of natural resources in the plains, hills are becoming the frontier regions of the country. Despite rich natural resources of forests, hydel power, minerals, etc., hill areas have generally remained poorly developed. On the other hand, increasing pressure of human activities has considerably damaged the ecology and environment of the hill areas. Excessive exploitation of natural resources and implementation of not well conceived development projects have been threatening the eco-system. It has also shown discernible destruction impact in the plains by way of flash floods, siltation-of water bodies, loss of soils and crops, damage to human habitat, etc., leading to irreversible human and economic loss. Since Stockholm Conference on Human Environment in 1972, although considerable awareness has been created about the deteriorating environmental quality and conditions in the hilly regions, the remedial measures are not keeping pace to cope up with the situation.

Hills as the natural bio-sphere reserves are of special significance both from ecological and economic point of view and need adequate attention for protecting their environment and development of resources. Hill areas have been receiving the attention of concerned state governments from time to time but the thrust for their development was given in the Fifth Five Year Plan when specific programs on hill area development were initiated. The program has since been continuing with changing focus, a perusal of various components / schemes being implemented under HADP, however, would reveal that most of such schemes are mainly either activity specific or target group oriented and are sectoral in nature, generally lacking in physical and spatial dimensions. In order to have a tangible effect of these programs / schemes in achieving the major objective of ecological balance of hill areas, there is need to integrate all the programs / scheme both horizontally and vertically. Considering sensitive and fragile eco-system of hills and mountains and their peculiar problems, development strategy as followed in the plains may not be fully applicable for hill environment rather conservation oriented integrated development

approach, be it road construction or development of resources, would be suitable for planning and development of hill areas.

2. HILL REGION

The foremost task for preparation of an Integrated Development Plan is to delineate the operational area for the Plan. Himalayas in the north and Deccan Plateau in the south form important physiographic unit of India. Himalayas are the young fold mountains and longitudinally they constitute the greater Himalaya (Himadri) the lesser Himalaya (Himachal) and the other Himalaya (the Shivalik ranges) while based on regional characteristics they are sub - divided into western, central and eastern Himalayas. In the central highland Aravallis, Vindhyas and Satpura are the important hill ranges and in the Deccan Plateau, Western Ghats and the Eastern Ghats are the prominent hill ranges. All these hill ranges form part of broad physiographic divisions or sub-divisions but for planning purposes, delineation of hill regions as well as their sub - regions need to be undertaken based on the criteria of altitude, slope, rainfall and other related factors.

In 1981 the Planning Commission while delineating the hill regions accepted that any area above 600 meter in height from mean sea level may be classified as hilly. Later on in 1985 it was also recommended that any area with average slope of 30 percent and above may be classified as hilly. But in practice, 1981 classification is being used for the purpose of Hill Area Development Program. Accordingly, hill areas have been grouped into two categories:

- Areas which are co-extensive with the boundaries of the states called as hill states comprising Jammu and Kashmir, Himachal Pradesh, Sikkim, Manipur, Meghalaya, Nagaland, Tripura, Arunachal Pradesh and Mizoram; and
- Areas which form part of the state and termed as designated hill area by the Planning Commission. They include- 2 districts of Assam, 8 districts of Uttar Pradesh, major part of Darjeeling district of West Bengal, Nilgiri district of Tamil Nadu, and 163 *taluks* of Western Ghats comprising parts of Maharashtra (62 *taluks*) Karnataka (40 *taluks*) Tamil Nadu (29 *taluks*) Kerala (29 *taluks*) and Goa (3 *taluks*).

The above delineation of the hill regions is not, in real sense, the delineation of the region on a multitude of factors and their interaction normally taken for delineation of a viable region for comprehensive planning. A wide range of variables may be employed for the delineation of the region but such a need would depend on the primary objectives of the exercise. The hill areas identified by the Planning Commission may not meet all the requirements of a planning region but are taken as a special purpose designated hill area for allocating special central assistance for their development. Taking *taluk* as a unit of study, the Central Town and Country Planning Organisation prepared a Regional Plan for Western Ghats Region. The region identified comprised Western Ghat's spines and adjoining areas adjusted to the administrative boundaries of *taluks*. The region so identified included 135 *taluks* for which a Plan was prepared while for operational purpose, hill area development program continued in 163 *taluks* of Western Ghats Region.

Keeping in view the broad objectives of eco-development and conservation for hill area development, a watershed appears to be an ideal unit for planning and accordingly while delineating Planning Region for hill area development, it is necessary to take into account the whole of watershed area including high altitude of hills, plateaus, valleys and plains. A watershed is a clear conceptual unit comprising hydrology, physical geography and other natural resources

and hence it will be of great advantage for hill area development if watershed, is taken as a unit for planning. Within the watershed all the development programs could be made area specific to a large extent which would help in achieving the economic growth at a desired level.

3. PROBLEMS AND POTENTIALS

Hill regions in general are ecologically rich and economically less developed. The hill areas with natural endowments have large economic potentials but need to be utilised in rational and sustainable manner. From the snow clad tops of Himalayas to the denuded hills of Aravallis, the problems and potentials of hill areas vary from region to region based on their geo-physical setting and pace of development. For planning considerations, there are some common set of problems faced by the hilly regions. A comprehensive exercise on Western Ghats Regional Plan carried out by TCPO during Sixth Five Year Plan period has identified certain constraints of development in various sectors / areas of development which could be taken as indicative of the nature and gravity of problems in the hill areas.

The severe problem in the hill area is of soil erosion caused by the high rainfall on the steep slopes coupled with scanty vegetation due to indiscriminate felling of forests. Agricultural holdings are generally small and fragmented and there is acute pressure on cultivated land. The existing utilisation of land in the hill areas is not sound from ideological and economic considerations. Shifting cultivation is one of the major problems in hill areas which render large proportion of area as fallow and culturable waste. The area under forest in many hill tracts is much below the requirements National Forest Policy.

The hill areas basically low density zone are, however, experiencing rapid increase in their population. In hill states like Nagaland, Mizoram, Arunachal Pradesh, Tripura, Meghalaya, the growth of population during the last decade 1981-91 was much higher than the all India average growth rate of 23.56 %. Although hill areas are endowed with abundant renewable and non-renewable natural resources, by and large, they are dominated by subsistence agrarian economy. In fact, poverty thrives amidst resource plenty hill areas which suffer from lack of adequate means of irrigation and wasteful, faulty, and age old / agricultural practices.

The hill regions, generally suffer from inadequacy of rural roads, marketing facilities and other supporting services which come in the way of proper development of agriculture and overall economic development. Though animal husbandry is next, in importance to crop, livestock, poultry and dairy farming are the least developed branches of agriculture in many hill tracts. Similarly, hill regions have rich, resources of minerals but they are not exploited scientifically causing degradation of hill environment. The industrial development in the hill areas has by and large been very poor and what ever industrial development that has taken place, has remained, confined to only few pockets leading to wide spatial imbalances. Tourism although emerging as important economic activity has not been developed in an integrated, manner. Forest is being used as the major fuel wood because of lack of alternative source of energy substitute for fuel wood causing larger scale destruction of forests. Urban scenario is dominated by large number of small size, settlements and there is a wide gap in the existing urban system leaving large tracts of hills, ill serviced. However, in some of the hill states, growth of urban population is recorded at a higher rate than the all India average figures of 36.19 percent during 1981-91.

In spite of poor state of hill development and large scale environmental and ecological problems, hill areas' in India have vast potentials which need to be harnessed properly. In order to have sustainable development of hill regions on a wider scale by adopting proper land development measures there, is large scope to bring more area under agriculture and forest. The hill slopes, are specifically suitable for large scale plantation and horticulture crops. With good scope of fodder, production, dairying has considerable scope for development in the region. A sound development of forest would not only help in eco-restoration but would also provide industrial timber if exploited scientifically and be also a good potential for bee-keeping, seri-culture and minor forest produce. The optimal exploitation of minerals would help in setting up of mineral resource based industries thereby leading to diversification of economy. Hill areas endowed with, vast natural assets have immense potential for tourism development as well.

4. DEVELOPMENT APPROACH

The development approach followed for Hill Area Development Program mainly relates to providing central assistance for various components and helping in socio-economic and eco-development of hill areas. Under the program, hill states are classified as special category states which receive central assistance by way of 90 % grant and 10 % loan. For the designated hill, areas forming part of State, two separate programs are being implemented, (i) Covering the hill areas of Assam, Uttar Pradesh Bengal and Nilgris district of Tamil Nadu, called hill area development program, and (ii) Covering 163 *taluks* of Western Ghats Region called Western Ghats Development Program. The approach to program states that schemes under both HADP and WGDP should be properly dovetailed and integrated with state plan schemes.

The approach and strategy for hill area development enunciated in the Eighth Five Year Plan has identified 37 programs emphasising various issues in different sectors of development. Most of these programs are activity specific, particular action oriented relating to specific group and do not form part, of an area based Integrated Plan. There is also an element of overlapping in some of the programs. Under, the Western Ghats Development Program separate set of guiding principles, are given emphasising ecological balance and restoration of ecological damage caused by human interaction. All these programs and schemes already in operation could continue under Hill Area Development Program but the need is to derive maximum benefits by dovetailing them in well conceived Integrated Area Development Plan for hill sub-regions of the country.

The basic approach to hill area development should be to arrest further damage to the fragile mountain eco-system and to promote development without destruction. The Plan for hill development should attempt to highlight the role of each and every sector of development in bringing economic benefits to the region and in maintaining the vital ecological balance by coordinating various economic and social activities in space through the creation of a systematic and functional settlement system. There is an intimate and inseparable relationship between environment and development and the objective of sustainable development cannot be achieved by ignoring the environmental effects. In order to have development without destruction all the socio-economic and physical activities need to be planned within an ecological framework. The Western Ghats Regional Plan, attempts to identify environmental sensitivity areas which provide an ecological framework to take up various types of developmental activities in different sensitive zones. Five indicators namely altitude, slope, existing vegetation, soil types and average annual rainfall have been taken to determine the environmental character of hill areas. Based on these

factors, it was noted that *taluks* with higher cumulative weightage of environmental character were, more sensitive to erosion and accordingly 5 types of environmental sensitive areas / *taluks* ranging from extremely sensitive, very high sensitive, highly sensitive, medium sensitive and low sensitive zones were identified. Considering the physical features and characteristics of various environmental sensitive areas, strategy and proposals for eco-development and other measures for development have been suggested. Such an approach is akin to watershed management which is considered to be an ideal approach for hill area development.

Development approach for hill area should emphasise among others sound land use planning, development of alternative source of energy to reduce dependence on forest fuel wood, planned development of tourism activity, rational urban settlement system and optimal utilisation and development of resources. All these parameters needs to be well knitted to the Integrated Plan. Two such models of development followed in other countries are: (i) European Model and (ii) Japanese Model. About 150 years ago in the European Alps in places like Switzerland, Bavaria and Austria, similar conditions prevailed as in the Himalayan Region today. The problems of conservation and development of mountain region in the above European countries have over the years been tackled by adopting sound practices of Land Use Planning with the help of land tenure system, development of hydro-electric power as a major alternative source of local energy for development, secondly, preventing the destruction of forest cover and thirdly by adopting development of planned and dispersed tourism. All the three factors have been blended to achieve the objective of conservation and development. This model is considered to be useful in other mountain regions of the world as well. In Japanese model, hill areas have been kept as very sparsely populated where only two per cent of the large population of over 100 million is living in the hills which cover 75 per cent of land area. This has been achieved partly by conserving the hills as resource regions for forestry, hydro electric power, tourism and partly, by having economic development in the plains. Although it has some adverse impact in terms of acute congestion and pollution in the remaining 25 percent of land area containing 98 percent population. Nevertheless, hill areas have been treated on the basis of conservation development factors as in Europe. Despite of different physical and socio-economic conditions in our hill areas, it would be interesting to explore to what extent we can draw on their experience ?

A policy Perspective Plan for larger region should identify the broad developmental issues and imperatives and set out well defined goals and objectives. The Integrated Plans at sub-regional level or for typical hill sub-region should identify the priorities for development programs spatially and temporally. At this level, physical Plan should also be integrated with the socio-economic development Plans of state government or other agencies at various levels to work out the financial implications and order of priorities, considering availability of funds from various sources vis-a-vis development needs. At the lowest level i.e. the sub-watershed level, Action Area Plans indicating the specific area based programs of development with stages of implementation in a coordinated manner should be prepared in consultation with other development agencies and involvement of local people. Integrated development approach for hill areas, thus, calls for coordinated action in all aspects of development at various levels. Such an approach would ensure planning from the bottom and action where the problem exists. Considering the broad objectives at regional level development program for the pacific area at lower level be worked out to have a top-down linking and similarly programs at lower level should be adjusted in such a way that they fit well with the objectives and resources indicated at the higher level Plans to

have bottom-up linkages. Horizontally, all the programs need to be coordinated in the detailed, Plan for sub-watershed at the local level in line with the broad objectives and available resources.

An integrated development approach needs reliable, timely, accurate, complete and useful data and information on land use, natural resources, socio-economic activities and other parameters of development. The remote sensing techniques have proved to be very useful in inventorying, development management and monitoring of land, water and other natural resource data and information. The technology offer a wide opportunity for integrated study of hill areas particularly in terms of land and natural resources. The remote sensing technique can help to extent in analysing the environmental changes in hilly / areas and prepare an Integrated Development Plan. A sound database and information system particularly at sub-watershed level in the form of various thematic maps and attribute data would facilitate in planning and development of hill areas.

The Land Use Planning of hill areas should be based on the land capacity and suitability studies at sub-watershed level. Very steep slopes should be forested while the moderate slopes should be put to a mix of horticulture plants of energy, fodder and economic importance. The valley and plain flat lands in the hills should be under cultivation of food crops. All these should be supported by a proper land development program such as terracing, contour bending, trenching of hill slopes, construction of check dams, etc. Encroachment on forest land should be checked and removed and forest should be enriched by planting on denuded and sparsely forested zones. Hills and mountain have vast scope of hydel power and water resource development for irrigation and other purposes. In view of sensitive nature of hilly, areas, preference should be for creation of minor irrigation schemes. This will also help in augmenting groundwater table by more recharge that will inturn intensify the vegetative cover. Non-polluting hi-tech industries as well as local resource based industries could be developed in the hill regions in the selected growth centers. For development of tourist infrastructure such as construction of new roads, hotels, cottages and allied activities care should to be taken in such way that they do not affect the hill escarpment and should be developed in harmony with the surrounding environment. While developing human settlements both urban and the rural, it should be seen that limited availability of flat and buildable land is optimally utilised. The level of facilities and services need not necessarily be on the basis of population unit and distance norms but be provided as per the needs of the hill people. The norms and spatial standards as prevalent in the plains may required to be scaled down. Detailed guidelines on erosion control measures in the construction of hill roads laid down by the Ministry of Transport (Road Wing) should be strictly followed while constructing the new roads.

To preserve and maintain the genetic pool of special flora and fauna in the hill region, biosphere reserves such as national parks, wild life sanctuaries, reserve forests and scenic spots have to be maintained. The wide public awareness program for environmental protection, and conservation, legislative measures and appropriate machinery are needed to tackle the situation. The operational and planning and development machinery should be strengthened appropriately to evolve and implement the Eco-development Plans at various levels.

5. CONCLUSIONS

In essence the basic philosophy of hill area development should relate to the sustainable development, within the parameters of the World Commission on Environment and Development definition i.e. the sustainable development is the ability to meet the needs of the present generation without compromising the ability of the future generation to meet their own needs.

24 | MRTS FOR DELHI: NEED TO SUPER IMPOSE PROPOSALS OF DDA, NCRPB AND RITES

The Master Plan for Delhi, Perspective 2001 suggested Light Rail - a medium capacity passenger transit system for intra-city passenger movement because compared to the underground rapid transit, the cost is about one tenth compared to surface. While the NCR Planning Board has recommended that NCR integrated system would be more affordable than the RITES proposal and could be implemented easily in the short run postponing the costlier and more technically complex component proposed by RITES. The paper underlines that the proposals of NCRPB also merits consideration, thus, it will be more appropriate to super impose the proposals of DDA, RITES and NCRPB to understand what type of scenario emerge and then take the appropriate decision of provision of MRTS.

1. INTRODUCTION

Delhi, the capital of the country has been experiencing tremendous pressure of growth of population in terms of persons and vehicles, during the last few decades. The population of Delhi was 36.47 lakh in 1971, increased to 57.29 lakh in 1981, and 83.75 lakh in 1991, indicating an increase of more than two-fold in the last two decades. The corresponding figures for the increase in number of vehicles are 2.14 lakh, 573 lakh and 19.92 lakh respectively which indicates more than nine times increase in last two decades. Delhi also has the largest number of vehicles - 19.92 lakh, even though it ranks third in the list of four mega-cities of the country, after Bombay which has 6.53 lakh vehicles, and Calcutta 4.77 lakh Madras, the fourth mega-city has only 6.25 lakh vehicles. It is also interesting to note that the number of vehicles of all the remaining three mega-cities taken together account for 17.55 lakh vehicles, which is less than the number of vehicles in Delhi alone.

The proportion of car-man ratio works out to 5 persons per car in Delhi, 24 persons in Bombay, 45 in Calcutta, and 55 in Madras. This shows the magnitude of the traffic and transportation problem which Delhi is confronted with, in terms of number of vehicles which is primarily taken by the road based bus system. Perhaps, Delhi is the only city of its size in the world which is served by a road based transport system only.

Keeping in view the ever increasing number of vehicles of the city and the limitations of the road based bus system, land constraints and also the threshold for widening of existing road network, it is generally argued that for the mass rapid transit of Delhi, there are only two options i.e. (i) Heavy Rail Transit System and ii) Medium Capacity Rapid Transit System (including LRTS).

2. PROPOSALS OF DDA

The first comprehensive Master Plan for Delhi prepared in 1962 (MPD 1962) under the Delhi Development Act, 1957, while conceiving Mass Transit, emphasized the possibility of exploring an electrified subway for the future, after substantial increase in traffic justifying an expenditure of Rs. 3.5 crore per km and suggested that till such time the Ring Railway with the local bus service should take care of the mass transit.

While the Master Plan for Delhi, Perspective 2001 (modified Draft 1987) suggested Light Rail, a medium capacity passenger transit system for intra-city passenger movement because compared to the underground rapid transit, the cost is about one tenth compared to surface. The Draft also highlighted that LRT has the ability to share and utilise all types of right of way on the same route and yet have the advantage of guided technology. The Light Rail System is an alternative of the bus system wherever high capacity movement is required. It was estimated that in the existing urban area and the urban extensions about 200 km of light rail would be required by 2001, in Delhi. The major corridors identified were:

- Vivek Vihar to Najafgarh Road along Vikas Marg, ITO, Panchsheel Park, Pusa Road, Rajendra Place, Patel Road;
- Mehrauli-Badarpur Road to G.T. Road (New Subzi Mandi) along Lal Bahadur Shastri Marg, Mathura Road, Exhibition Ground, Ring Road, ISBT, Shanti Marg and Mall Road;
- Najafgarh Road to Dhaula Kuan along Jail Road and Station Road;
- Palam Airport to ISBT along Mahipalpur Road, West of JNU, R.K. Puram, Vikas Sadan, Nehru Stadium, Lodhi Office Complex, Zoo, Exhibition Ground, Ring Road and ISBT; and
- Dilshad Garden to Rohini along Eastern Yamuna Canal, new bridge at ISBT, Mall Road and Road No. 41 leading to Rohini.

The Master Plan for Delhi, Perspective 2001 (published in August 1990) keeping in view the physical forms obtainable in the existing urban area like Old Delhi, New Delhi, and the new developments, recognised that single mode of transport cannot effectively serve the needs of the city and accordingly suggested a multi-mode system suitable for the overall structure of the city interlinking the various sub-structures, consisting of electrified ring rail, bus transport and LRTS / MRTS on selected corridors. Besides, the document also stated that for the efficient mass rapid intra-city passenger movement, the city needs a rail based system which may be underground or on surface or elevated.

Under the transportation network, the MPDP-2001 points out the need to cater both for inter-city and intra-city movement. The Ring Railway which had been carrying 9,000 passengers per day in 1981 after introduction of electric multiple unit (EMU), the passenger movement has decreased and suggests that land uses along the Ring Rail be structured mainly in areas like Anand Parbat, INA colony, Pusa Institute and Kirti Nagar, besides providing proper approach from main roads to ring railway stations. It also highlights that broad gauge link should be provided between Gurgaon and Kirti Nagar to facilitate the EMU movement within Delhi Urban Area. Through, the same line it also proposes to link the Indira Gandhi International Airport by broad gauge line.

3. MRTS PROPOSALS OF RITES

Delhi Administration assigned the task of preparation of detailed techno-economic feasibility study for Mass Rapid Transport System (MRTS) for Delhi to RITES. In essence, the report concludes that the transport demand forecast for the year 2001, is well beyond the capacity of road network or bus system. Therefore, introduction of an integrated multi modal Mass Rapid Transit System is inevitable on the route of 184.5 km consisting of (i) Underground metro corridors-27 km, (ii)

Surface rail corridor -140 km, and (iii) Dedicated bus way of 17.5 km at an estimated cost of Rs. 5, 377 crore (1989 price level, which at present price level would cost Rs. 9000 crore). The MRTS corridors identified are:

- Tilak Bridge - Connaught Place-Patel Nagar (Metro) - 12.00 km;
- Vishwa Vidhyaiaya-ISBT-Connaught Place-Central Secretariat (Metro) - 15.00 km;
- Shahdara-ISBT-Nangloi (Rail) - 23.00 km;
- Narela-New Azadpur Subzi Mandi (Rail) - 25.00 km;
- Rohini-Sarojini Nagar-Patel Nagar (Rail) - 36.00 km;
- Bijwasan-Palam-Dayabasti (Rail) - 20.00 km;
- Tuglakabad-Okhla, Nizamuddin-Tilak Bridge (Rail) - 17.00 km;
- Shahdara-Vivek Vihar-Tiaik Bridge (Rail)- 19.00 km; and
- Patel Nagar-Shivaji Marg-Najafgarh (Bus way) - 17.50 km;

For the MRTS, RITES has also prepared the financial report on the basis of cost benefit analysis technique employed for estimating the cost stream and the likely benefits to accrue from the project. The cost stream includes capital cost of civil works and rolling stock / fleet for Metro, Rail and Busway and also operating cost of the above three constituents in respect of existing buses and private vehicles as residual traffic would continue to move on existing routes even after the introduction of MRTS; the benefits stream include capital and operating cost of carrying the total volume of passenger traffic by existing bus system and private vehicles without taking MRTS concomitant savings resulting from decongestion in vehicle operating cost of all buses after the introduction of MRTS. It also includes saving in terms of commuters time over the existing transport and those continuing on existing modes because of reduced congestion. The financial report also recommends the commercialisation of air space of MRTS land in order to generate additional resources for the project.

4. NCRPB PROPOSAL

As per National Capital Region Plan 2001, the objective of the Transport Plan is to promote and support the economic development of the region and relieve the capital of traffic congestion by providing accessibility to all parts of the region and discourage the transit of passengers and goods through the core area of Delhi by providing by-passes. It may however, be mentioned that apart from goods and essential commodities of local consumption, large quantity of freight also lands in Delhi which is not meant for consumption in Delhi. About 80% of the total goods traffic is by road and hardly 20 % by rail. Studies on transportation network for Delhi Urban Area have established the need for creating a new railway line to bypass through traffic from Delhi core area. Such bypass is necessary in order to release the existing capacity for the needs of the sub-urban and daily commuters traffic in Delhi Urban Area as this will further give boost to the economy of the region by opening up new areas.

The schemes identified by National Capital Region Planning Board (NCRPB) for priority development include:

- Construction of proposed regional rail by pass (210 km) connecting Khurja, Palwal, Rewari, Rohtak and Panipat. It is stated that this system would help segregate inter - city freight movement and release the existing Delhi Ring Rail exclusively for MRTS;
- Laying of additional tracks and /or electrification to facilitate the introduction of exclusive commuter rail services along existing / proposed rail corridor running (a) between Delhi and DMA towns; Delhi Bahadurgah; Delhi-Sonepat; Delhi-Gurgaon; Delhi-Ghaziabad; Delhi-Faridabad; and (b) Between Delhi-DMA and priority towns in NCR: Faridabad-Palwal, Muradnagar-Meerut, and electrification of Ghaziabad Meerut Section, Ghaziabad-Khurja, and Delhi-Rewari-Alwar.

The NCRPB proposal also suggests that the existing two tracks of Delhi Ring Rail be intensively utilised for fast passenger movement by means of EMU. All stations along Delhi Ring Rail and spurs to be connected by network of feeder buses. All EMU trains from the sub-urban areas in DMA / NCR towns to be moved continuously along the Ring Rail System of MRTS (RITES proposal) to enable commuters to change mode at various pre-selected railway stations as at present. It is also claimed that the total outlay required for the proposed NCR integrated system would be more affordable than RITES proposal. It could also be implemented more easily in a short run postponing the costlier and more technically complex components of the RITES plan, such as metro (underground).

5. EMERGING ISSUES

In the past, transport systems of Delhi have been in the focus of several studies. The notable being

- Delhi Master Plan Study, 1958 for DMP 1962;
- Comprehensive Traffic and Transportation Planning Studies of Greater Delhi by Central Road Research Institute (CRRI) 1969;
- Metropolitan Transport Team (MTT) Study by Planning Commission;
- Metropolitan Transport Project(Railways), New Delhi;
- Town and Country Planning Organisation's Studies on;
- MRTS - Networks - Traffic 1981 undertaken in 1973;
- Concept Plan, MRTS, Network and Traffic study undertaken in 1974;
- Traffic and Transportation Study by Delhi;
- Development Authority - 1981 for preparation of Perspective Plan Delhi - 2001;
- Delhi Urban Art Commission Study 1985;
- Ministry of Railways Group Study (1986); and
- Task Force - Ministry of Urban Development, 1987.

It is significant to note that the alignment proposed for east-west corridor by these nine major studies mentioned above varied with the technology proposed, from heavy capacity MRTS to LRTS and M-Bahn magnetic levitation system.

Undoubtedly, the heavy rail system has high carrying capacity of 80,000 persons per hour in one direction during peak hours and therefore, cannot match to any other system as far

as capacity is concerned and thus the RITES proposal rules out the application of Medium Capacity Rapid Transit System (MCRTS) on the plea that such a system will not be able to meet the expected magnitude of trips on certain sections. However, the report of the Study Group on Alternative System of Urban Transport (1987) of Government of India states that LRTS have achieved capacities of 30,000 pphpd in the West and no difficulties are foreseen with upgrading the system to 60,000 or 70,000 pphpd under Indian, conditions. These systems of LRTS or MCRTS are adopted in western countries mainly on the consideration of cost. Other factors responsible for its use are the energy crisis, environmental issues and introduction of lighter, long lasting coaches. The MRTS proposal of RITES mentioned that on certain sections, the trips can be as high as 70,000 or more which can be met by LRTS. It will be interesting to note that Mr. Richard Scurfield, World Bank expert on Urban Transport suggested that before cities embark on metro projects, they should study and provide cheaper alternatives such as bus lanes, segregated bus way, improvements in the road network, light rail systems and extensions to suburban rail lines. He also emphasized that surface construction for a light rail system is just 20 % of the cost of the underground system and the other options such as bus ways and bus lanes are even cheaper. Thus, the proposals of LRTS of MPD, 2001 merit consideration in right perspective.

MRTS system involves huge financial outlays and funding of such projects is a world wide problem. Governments especially in a developing country like ours are not in a position to fund MRTS projects from their budgetary resources alone, mainly because of the limited financial resources and priority to other sectors of economic development which is also evident in the case of Delhi as well, because even though several studies have been carried out for development of high capacity MRTS for Delhi by various agencies in the past, these could not be implemented due to the severe financial resource crunch. It is worth mentioning here the study findings of 21 cities in the Third World where metros are either operating, under construction or planned, under-taken by the British Overseas Development Administration, working through the Transport and Road Research Laboratory (TRRL) with the technical support of World Bank, the most glaring discrepancy observed between plans and results is in the operating costs which exceeded the amount predicted. The study also observed that operating costs (such as for management and maintenance) were equally underestimated and revenue generation over estimated and high-lights that metros cannot be expected to make profit.

Lately, the idea of property development over railway land along the MRTS corridors and commercialisation of air space is witnessing increasing attention. However, it may be understood clearly that property development which has been identified as a major contributor to the resources of the project will create further problems of congestion, parking, footpaths and widening of roads and lanes. Similarly, the argument in respect of time sharing of passengers moving by MRTS is also not based on a sound system of investment planning techniques as it is known that the shadow pricing in the under developed countries including India is generally presumed to be zero, as also the argument that saving on account of fuel consumption due to introduction of MRTS needs to be examined in depth because the extent of saving of diesel and petrol consumption on account of reduction in number

of buses, cars and other vehicles will depend, upon the length and breadth of location of additional residential sites for the location of MRTS. Since MRTS will reduce the journey time and open up new areas for development, it is most likely that people will start constructing their houses even in the farthest areas from where they could commute by bus. Further, with the expected increase in the population in the MRTS corridor areas, it is doubtful whether the entire additional commuters would be carried by railway alone. Therefore, it is doubtful whether there will be any perceptible decline in the number of buses, cars or other personalised modes which may result in a significant decline, in the consumption of petrol and diesel. On the contrary, the development of commercial properties near railway stations and along railway lines is likely to increase the volume of vehicles towards these areas, further aggravating congestion problems and benefits estimated on account of saving in petrol and diesel may eventually turn out to be only of notional value. According, to Mr, Scurfield, the goal of reducing congestion and pollution was not achieved by MRTS in developing countries, because in the short run some motorists may switch to metros but the space their cars once occupied quickly gets filled by other motorists who decide to drive when the original congestion is relieved.

The property development and commercialisation of air space would further concentrate the commercial activities in the core areas and lead to greater congestion due to increase in FAR and ground coverage which also counters the NCR development strategy of decentralisation and de-congestion of Delhi.

6. CONCLUSIONS

The NCR Planning Board recommended that NCR integrated system would be more affordable than the RITES proposal and could be implemented easily in the short run postponing the costlier and more technically complex component of RITES. The proposals of NCRPB also merits due consideration.

Thus, it will be advisable to super impose the proposals of DDA, RITES and NCRPB to conceive what type of scenario emerges and whether it would be economical to embark on gigantic projects of MRTS for improving the quality of public transport and to relieve traffic congestion of Delhi.

25 | TOWN AND COUNTRY PLANNING LEGISLATION: SOME BASIC ISSUES

Abstract

In the early part of 20th Century, town planning was considered as a part of the municipal administration, however, the enactment of comprehensive Town Planning Legislation in the States has assumed special signification and urgency in the context of programs of planning and development of urban areas. In fact the earlier enactments only provided for undertaking town improvement schemes by the local bodies from the point of view of public health, sanitation, etc. Due to the industrial growth coupled with urbanization, there has been growing recognition of the need for viewing urban development not merely as construction of houses or provision of water supply and other community facilities in an unintegrated manner but as an integrated development in which each sector has a definite functional role to play. Accordingly, Town and Country Planning Organization in collaboration with Institute of Town Planners, India formulated 'Model Regional and Town Planning and Development Law. The paper narrates the provisions of this law, which was adopted by most of states and also summarizes the prevailing Acts of various States and Union Territories.

1. INTRODUCTION

The enactment of comprehensive Town Planning legislation in the states and union territories has assumed special significance and urgency in the context of programs of planning and development of urban areas which are being taken up in the 8th Five Year Plan under the central and state sector programs of urban development. It is necessary that satisfactory legal tools are available at the state level for undertaking these urban development programs without being hampered by unauthorized development, lack of legal remedies, etc., and can be effectively implemented within the framework of a statutory Plan.

The need and urgency for providing effective legal tools at the state level to control and regulate the development of towns and cities on sound town planning principles has been underscored again and again and the state governments are making efforts to meet this need in a number of ways. One such important legal tool is a town and country planning law.

Town planning law is not a new legal tool in India. Looking back, we find that, in the early part of the 20th century, town planning was considered a part of the municipal administration and dealt with as such but as problems gradually assumed greater proportions, both with regard to the scope and complexity, Improvement Trusts were set up (Bombay: 1898, Mysore: 1903, Calcutta: 1911, Uttar Pradesh: 1919, Punjab: 1937, Nagpur: 1937, Delhi: 1937) to formulate and implement town improvement schemes. In the meanwhile, town improvement schemes were also undertaken under the town planning acts which were introduced in some of the states. The earliest town planning legislation in India was enacted by the Government of Bombay in the year 1915 which was followed by other provinces, that is, Madras (1920), United Provinces (1919) and Punjab (1922). Town planning and town improvement activities have been carried out within the framework of such legislations during the last seven decades.

It would be seen that these Acts did not intend nor did they provide for comprehensive planning which has now come to be accepted as most necessary for directing and regulating urban and regional development.

The earlier enactments only provided for undertaking town improvement schemes by the local bodies from the point of view of public health, sanitation, etc. Due to the industrial growth coupled with urbanization registered during these decades, there has been growing recognition of the need for viewing urban development not merely as construction of houses or provision of water supply and other community facilities in an unrelated manner but as an integrated development in which each sector has a definite functional role to play. Contemporary development planning has brought about realization of the need for comprehensive Town Planning Legislation at the state and local levels.

The Model Regional and Town Planning and Development Law currently being followed in the states and union territories for adoption with suitable changes to suit individual requirements, is the outcome of several reviews and revisions undertaken on the recommendations of the State Ministers Conference held from time to time. The legality of this model had been confirmed by the Ministry of Law. Later the Ministers Conference commended it for adoption by the states and the union territories.

2. LAND DEVELOPMENT AND TOWN AND COUNTRY PLANNING LEGISLATION IN INDIA

To begin with it is necessary to take note of the constitutional limitations in the enactment of any legislation concerning land and its development in India. According to the Indian constitution, it is only the state governments which can enact laws relating to land and local government which appear at Entries number - 5 and - 18 in List-II of the Seventh Schedule. The central government can enact legislation relating to the control and regulation of development with respect to limited areas such as cantonments, railways, national highways, major ports, posts, and telegraphs and other communications and regulation, and development of interstate rivers and river valleys which appear in List-I of the Seventh Schedule. This does not, however, enable the central government to enact legislation in regard to comprehensive planning and development of any particular area and its surroundings. Again, Entries 20 and 42 in the Concurrent List provide for economic and social planning as well as acquisition and requisition of properties. While by extending the sense of 'economic and social Planning' it can be argued to mean land planning as well as control, in practice, so far regulation of land use and its development have been confined only to the State legislations. Therefore, the enactment of legislation relating to town and country planning which basically leads to the prescription of the use of land and its development has been taken to be at the State level. Any law in this regard passed by Parliament can have effect only in the territories directly governed by the Union Government. It is conceivable, however, that a central law enacted for certain territories under the direct administration of the Government of India can be extended to an area in a state by the concerned state government.

Town and country planning does not find specific mention in any of the three lists of the Seventh Schedule of the constitution of India which have enunciated distribution of legislative powers between the center and the states. In such a situation, the true object of the legislation as a whole and its scope and effect have to be ascertained by applying the 'doctrine of pith and substance'. The Supreme Court examined the relationship of town planning with subjects of 'land' and 'economic and social Planning' in the case of *Maneklal Chhotlal and others vs. M.G. Makwana and others* (A.I.R. 1976 S.C. 1373) and held that the State legislatures were competent to enact Town Planning Act.

There are a number of court cases of the Supreme Court and the High Courts on important issues of urban planning and development namely, bulk acquisition of land in the interest of planned development, compensation for compulsory acquisition, interim control and these decisions are in the nature of binding precedents. Unfortunately, we are generally unaware of these decisions because they are yet to be compiled and documented.

The NCU (National Commission on Urbanisation) has pointed out that the existing planning laws are negative in their approach and make rigid prescriptions which hinder land development rather than facilitate it. It has been suggested that the approach of planning should be changed and the laws altered in such a way that they generate collective and individual initiative in the process of city development. Acting on these recommendations, the State Town Planning Acts should be reviewed and suitably amended so that the spatial Development Plans prepared under these Acts are able to promote and sustain rapid economic development of the towns and cities on sound town planning principles in a phased manner. The state governments should take immediate steps (applicable in cases of those states which do not have comprehensive legislation) to enact / amend their existing town planning legislation to make them comprehensive piece of urban and regional planning acts.

The only Town Planning Act in India which has been revised more than twice so far, after its enactment, is the Bombay Town Planning Act, 1915, which was revised in 1954 and promulgated in 1957. It was later replaced, by the Maharashtra Regional and Town Planning Act, 1966. This has been supplemented by the enactment of the Bombay Metropolitan Regional Development Authority (BMRDA) Act, 1974. Some of the other Acts are -

- The Karnataka Town and Country Planning Act, 1961 (amended in 1964);
- The Tamil Nadu Town and Country Planning Act, 1971; which replaced the original Madras Town Planning Act, 1920; and
- Gujarat Town Planning and Development Act, 1978, which replaced the earlier Town Planning Act.

A number of States have since enacted Town Planning Legislations, but others depend on the legal provisions contained in various Municipal Acts and Village *Panchayat* Acts.

There are a number of other legislations which deal with certain aspects of town and country planning apart from urban development aspects. Laws affecting town planning programs are:

- City Corporations / Municipal Acts;
- The *Taluk* Development Board and Village *Panchayat* Acts;
- The Cantonment Board Acts;
- Urban Development Authority Acts;
- City Improvement Trust Acts;
- The Industrial Area Development / Infrastructure Development Act;
- State Housing Board Acts;
- Slum Clearance Act;

- The Highways Act;
- The Railway Board Act;
- The Urban Arts Commission Act;
- The Public Health Act;
- The Water / Air Pollution Act;
- The Water Supply and Sewerage Act;
- Preservation of Open Spaces and Sport Fields Act; and
- The Land Revenue Act, etc.

3. MODEL REGIONAL AND TOWN PLANNING AND DEVELOPMENT LAW

The NCU has recommended that the planning laws must emphasise regional planning and must actively encourage regionalization of Planning. Considering the emerging role of urban and regional planning in the physical development process, the central Town and Country Planning Organisation in collaboration with Institute of Town Planners, India formulated a Model Regional and Town Planning Development Law for adoption by the states with necessary modifications to suit individual requirements. Specific provisions exist in the Model Law to ensure appropriate spatial planning in a state-wide perspective.

The existing planning laws governing state regional framework are:

- The Maharashtra Regional and Town Planning Act, 1966;
- The Tamil Nadu Town and Country Planning Act, 1971;
- The Gujarat Town and Country Planning Act, 1961; and
- The Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, 1973.

The Model Regional and Town Planning and Development Law provides for the constitution by the state governments of a State Regional and Town Planning Board for the purpose of advising on the delineation of Regions for planned development and directing the preparation of metropolitan, regional and area plans by the Metropolitan, Regional and Area Planning and Development Authorities, coordinating the planning and implementation of physical development programs and the setting up of Metropolitan, Regional and Area Planning and Development Authorities for different urban and rural areas within the State to undertake preparation of Development Plans and to enforce and implement them. An Area Planning and Development Authority may be a local authority set up separately for the purpose of undertaking plan preparation, Plan enforcement and Plan implementation. The Model Law provides for three steps in the administration of this Act. Firstly, there will be the preparation of the existing land use map, thereafter the preparation of an Outline Development Plan and Comprehensive Development Plan and their enforcement and lastly the preparation of detailed schemes of development or redevelopment as envisaged in the plans and their implementation.

The scope of the Model Town and Country Planning Law may be stated to cover comprehensive regional, local and metropolitan planning, enforcement of the plans and their implementation and other ancillary legislations such as the Land Acquisition Act, etc. Planning will include Plan

preparation, Plan approval, Plan enforcement, Plan review and Plan revision aspects. Plan enforcement and implementation will include promotion and control of development according to Plan, removal of non-conforming uses, preparation of detailed development schemes and their execution. The execution of schemes will *inter alia* include land acquisition. The Model Law incorporates all the aspects except land acquisition. A law for the acquisition of land for town planning purpose cannot be isolated from the general law for land acquisition in the country and, therefore, it has been considered desirable to deal with land acquisition provisions separately in a law and only give appropriate references to it in the Model Law.

While the planning function is an obligatory function of the Planning and Development Authority constituted under this Act, the object of the inclusion of developmental functions in the Act is not to replace the existing developmental agencies already operating in the planning area or agencies which may be subsequently set up to undertake large scale development works. The implementation of a Plan involves a large number of different types of schemes starting from land acquisition, provision of services like water supply and drainage, construction of houses, civic centers, public buildings, etc., and will involve invariably a number of State and local agencies drawing funds from different sources. It is not conceivable for one agency to undertake all types of development. The developmental functions entrusted to the Planning and Development Authority under this law are meant to enable the authority to undertake development when there is no development agency in the Planning Area or the existing agencies are unable to undertake development of the type envisaged by the Planning and Development Authority.

It is recognized that planning functions should not be too closely influenced by the development function in order to avoid needless compromises that are made in developmental work, thereby adversely affecting the long term Plan Perspective. However, there may be many situations where developmental agencies do not exist or areas where it might be uneconomical for separate development agencies to be set up, and the Planning and Development Authority may have to step in to assume the functions of planning as well as development.

4. TOWN AND COUNTRY PLANNING ACTS

The Town and Country Planning Organization and also the Institute of Town Planners, India has been pursuing the enactment of comprehensive town and country planning legislation on the lines of the Model Law and is also rendering all possible assistance in the drafting of Planning Legislations to the various States. A number of States and UTs such as Goa, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Tamil Nadu, West Bengal, Delhi, Daman and Diu and Pondicherry have already enacted, Comprehensive Planning Legislation in their States while others are in the process of enacting such legislations. The Town Planning Acts enforced in the various States and Union Territories are at Table - 1.

S. No.	State	Name of the Act	Year of Enactment
1.	Andhra Pradesh	Andhra Pradesh Urban Areas (Development) Act	1975
2.	Assam	The Assam Town and Country Act	1959 as amended in 1985
3.	Bihar	Bihar Town Planning and Improvement Trust Act	1951

S. No.	State	Name of the Act	Year of Enactment
4.	Goa:	Goa, Daman and Diu Town and Country Planning Act	1976
5.	Gujarat	Gujarat Town Planning and Urban Development Act	1976
6.	Haryana	(i) Punjab Scheduled Roads and Controlled Areas Restriction of unregulated Development Act (ii) Haryana Urban Development Authority Act,	1963 1971
7.	Himachal Pradesh	Himachal Pradesh Town and Country Planning Act	1977
8.	Jammu and Kashmir	(i) Jammu and Kashmir Town Planning Act (ii) Jammu and Kashmir Development Act	1963 1970
9.	Karnataka	(i) Karnataka Town and Country Planning Act (ii) Bangalore Development Authority Act (iii) Bangalore Metropolitan Regional Development Authority Act (iv) Karnataka Urban Development Authority Act	1964 1976 1985 1987
10.	Kerala	(i) The Travancore Town and Country Planning Act (ii) The Travancore Town Planning Regulations (iii) The Madras Town Planning Act	1945 as amended in 1947 and 1975 1932 as amended in 1960 1920 as amended in 1971
11.	Madhya Pradesh	Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam	1973
12.	Maharashtra	(i) Maharashtra Regional and Town Planning Act (ii) Bombay Metropolitan Region Development Authority Act (iii) Maharashtra Housing and Area Development Authority Act (iv) Maharashtra (Urban Areas) Preservation of Trees Act	1966 as modified upto 1988 1975 1976 1975
	State	Name of the Act	Year of Enactment
13.	Manipur	Manipur Town and Country Planning Act	1975
14.	Meghalaya	The Assam Town and Country Planning Act	1959 has been extended to Meghalaya w.e.f. Jan., 1989
15.	Mizoram	The Mizoram Urban and Regional Development Act	1990
16.	Nagaland	The Nagaland Town and Planning Act	1966
17.	Orissa	(i) The Orissa Town Planning and Improvement Trust Act	1956 as amended in 1976
		(ii) Orissa Development Authority Act	1982

S. No.	State	Name of the Act	Year of Enactment
18.	Punjab	(i) Punjab Town Improvement Act (ii) Punjab Scheduled Roads and Controlled Areas (Restriction of Unregulated. Development Act	1992 1963
19.	Rajasthan	Rajasthan Urban Improvement Act	1959 as amended in 1991
20.	Sikkim	(i) Gangtok Municipal Corporation Act (ii) Bazar Committee Act	1975 1969
21.	Tamil Nadu	The Tamil Nadu Town and Country Planning Act	1971
22.	Tripura	The Tripura Town and Country Planning Act	1975
23.	Uttar Pradesh	Uttar Pradesh Urban Planning and Development Act	1973
24.	West Bengal	Town and Country Planning Act	1979
Union Territories			
1.	Chandigarh	(i) Capital of Punjab (Development and Regulation) Act (ii) Punjab New Capital (Periphery) Control Act (iii) Chandigarh Trees Preservation Order	1952 1952 1952
2.	Dadra and Nagar Haveli	The Goa, Daman and Diu Town and Country Planning Act	1974 extended by a notification of the Ministry of Home Affairs
3.	Daman and Diu	The Goa, Daman and Diu 1974 Town and Country Planning Act	1974
4.	Delhi	The Delhi Development Act 1957	1957
5.	Pondicherry	The Pondicherry Town and 1969 Country Planning Act.	1969

With regard to regional planning, the comprehensive town planning legislation should provide an adequate legislative basis so that physical developments in the region could conform to a Regional Plan. The functions of a Regional Plan may be advisory, restrictive, developmental and coordinative. The revised Model Law contains a specific chapter on Regional Development Plans and provides for preparation, processing, approval, enforcement, execution and implementation of Regional Development Plans by statutory Regional Planning and Development Authorities constituted under the Act. Some of the States such as Maharashtra, Tamil Nadu and Madhya Pradesh have also provided specifically for the preparation and implementation of Regional Development Plans in their Acts.

With regard to Planning of Regions which cut across State boundaries, the participating State should agree, by passing necessary resolutions in their respective State Legislatures authorising the Union Government to set up Statutory coordinating Boards for planning and monitoring of the Inter-State Regions. Of course, the implementation of the regional plan would be done by the participating states in their respective areas within the framework of the Plan. It is satisfying to note that in certain cases the participating states had agreed to the setting up of such

statutory board and Parliament had passed the NCR Planning Board Act, 1985. The NCR Board has since been constituted and a Regional Plan has been prepared.

5. LAND ACQUISITION FOR PLANNED AND ORDERLY DEVELOPMENT

With regard to land acquisition required for planned and orderly development of the towns, it is necessary that speculation in land is kept at the minimum. The revised Model Law has linked up Section - 4 and Section - 6 notifications under the Land Acquisition Act, 1894 with the publication of the Draft Development Plan and the Comprehensive Development Plan respectively in order to minimize speculation and to determine the payment of compensation with reference to the date of publication of the draft Plan.

The need for a new Land Acquisition Act specifically dealing with urban areas is increasingly being felt in view of the difficulties and time-consuming process involving unending litigation and high speculative prices to be paid for the acquired land under the existing Act. When this Act came into force in 1894, town planning and development activities were hardly a phenomenon and did not have the dimensions or the importance they have today. Today, it has become a force to be reckoned with. The administration of this Act was entrusted to the Ministry of Agriculture at the center and the revenue department at the state level which continues to be so even until today. This Act has not been helpful either in making urban land available expeditiously for development by public agencies or by procuring land at reasonable prices. Keeping in view these bottlenecks, an exercise is being made to attempt a draft legislation on acquisition of land in urban areas which should adequately meet the requirements of urban planning and development.

The Model Law provides for control of development and use of land in conformity with the Development Plans prepared under this Act. The Law envisages remedies where hardships are caused by the enforcement of the Development Plans and development schemes, penalties including imprisonment for the infringement of the provisions and the other normal legal safeguards. Any person intending to carry out any development on any land in the planning area is required to seek planning permission from the Planning and Development Authority under the Act. In the case of departments of central and state governments or local authorities, a more expeditious procedure has been laid down. These agencies are only required to notify in writing to the Planning and Development Authority of their intention to carry out such development on the land in the Planning Area, 30 days before undertaking any such development. In case the Planning and Development Authority raises any objection in respect of conformity of the proposed development either to any Development Plan under preparation or to any of the building bye-laws currently in force or due to any other material consideration, the public agencies, as the case may be, would either make necessary modifications, in their proposals to meet the objections or submit the proposals for development together with the objections raised by the Planning and Development Authority to the State Government for decision. The state government after giving due consideration to the proposal and the objections raised by the Planning and Development Authority would finally decide the matter.

With regard to operational works of central and state governments and local authorities which are concerned with the maintenance of essential services, it has been specifically provided that

operational constructions, as may be notified by the government from time to time, would be outside the purview of the Planning and Development Authorities constituted under this Act. These provisions have been incorporated in the Law with the concurrence of the concerned Central Government Departments namely Railways, Defence, Shipping and Transport, Communications, Civil Aviation, etc. The term 'operational constructions' has also been defined in the Law.

Another aspect in the process of Plan preparation, approval, enforcement and implementation, is that the Chief Town Planner of the State is made responsible for coordinating the Plan proposals of the planning areas, so that over a period of time a well coordinated planned development picture emerges for the whole State. The Chief Town Planner who is Secretary to the State Regional and Town Planning Board collates the views of the various State Departments which are represented in the Board and submits the proposals to the Board for final decision. The Planning and Development Authority has an important position in the enforcement machinery envisaged under the Act. Any one aggrieved by the decision of the Planning and Development Authority has a right to appeal to the prescribed authority.

6. URBAN LAND (CEILING AND REGULATION) ACT, 1976 (ULCRA)

Yet another piece of legislation which has adversely affected urban development is the Urban Land (Ceiling and Regulation) Act, 1976 (ULCRA) which was enacted with a view to preventing concentration of urban land in the hands of a few persons and speculation in profiteering therein and bringing about an equitable distribution of land in urban agglomerations to sub-serve the common good. It is felt that the Act has failed not only to transfer significant amount of land to State agencies, but has led to an unwarranted increase in land prices. NCU had also strongly advocated that there is need to bring increasing quantity of land in the market. The ULCRA Act, 1976, needs to be drastically amended, supplemented by taxation measures that would discourage landowners from keeping their land vacant and encourage landowners to develop the land for housing the lower and middle income groups or to pay a heavy levy for keeping the land vacant or they would be compelled to surrender it to the State if it was not developed within a five year period. The NCU has also recommended the deletion of Section - 20 and - 21 of Act, which draws discretionary exemptions and suggested that all exceptions should be brought within the ambit of Section - 19 by expanding its scope, if necessary.

The implications of ULCRA Act is that the applications beyond the excess urban land limits have not been disposed by the Competent Authority. The buying and selling of urban excess land is restricted by the Competent Authority, with the result that urban land is frozen and efforts have to be made for boosting housing and land development activities. Further, the compensation of land after acquisition is a meagre amount and thus, the landowners are not selling the land voluntarily. The amendment of the Act should envisage enhancement in the land compensation for achieving greater availability of land in the market. Under the ULCRA Act, the presumption that on excess vacant land, tenements will be built is unrealistic.

7. SLUM AREA IMPROVEMENT AND CLEARANCE ACT, 1956

Likewise, the Slum Area (Improvement and Clearance) Act, 1956 which was initially applicable to Delhi and some Union Territories and later enacted by other States primarily applied to dilapidated, overcrowded and insanitary buildings. The Act empowers the Competent Authority to declare as a slum, any area which is unfit for human habitation and serve a notice on owners of buildings. The Act empowers the Competent Authority to declare a slum areas to execute works of improvement. If the notice is not complied within the specified period, the Competent Authority can carry out the improvement work and recover the cost with interest from the owner as arrears of land revenue. The Act also provides for demolition, if necessary, of buildings in a slum area and for redevelopment of land if it is in public interest to do so. There is a provision in the Act under which government can acquire land within, adjoining or surrounded by a slum area in order to facilitate improvement or redevelopment work.

After an amendment made in 1964, the Act began to make a distinction between the landowner and building owner and also included a situation where the work of providing basic services is required to be done outside the building. This amendment seems to have made it possible to extend the Act to unauthorized hutment settlements also.

It has been felt that squatting on public land may be regularized where possible, but land require for public and social purposes must be protected and selective re-location of squatters from ecologically sensitive land must be undertaken. The amendment to the Slum Clearance Act is required to promote greater environmental approach in the slum programs.

8. CONCLUSIONS

There is a need for the enactment of a comprehensive Urban and Regional Planning Legislation in all the States and Union Territories so that urban planning and development could be conceived in a regional perspective beyond the city limits and coordinated within the overall framework of economic development, priorities and the resources obtaining in the State. The Planning Area declared under the Act needs to be reviewed periodically depending on the pressures on urban land so that the periphery of the planning areas are brought within the ambit of statutory control and management.

REFERENCES

- The Maharashtra Regional and Town Planning Act, 1966;
- The Tamil Nadu Town and Country Planning Act, 1971;
- The Gujarat Town and Country Planning Act, 1961;
- The Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, 1973.

26 | DEVELOPMENT AND MANAGEMENT OF COASTAL AREAS: LEGAL AND OPERATIONAL ISSUES

Abstract

There has been haphazard construction along the coast line of India measuring 7,500 km, to control this unwarranted development, the development control within 500 meters, has been stipulated in the CRZ Regulations, which indeed, is the first line of defense against despoliation of sea coasts and beaches. However, increasing pressure of development due to greater investment at many places of the coastal areas, the control of only 500 m is not sufficient and requires to be channelized within the framework of a Regional Plan encompassing a bigger area so that concentration along the coastal stretches is prevented, besides the Coastal Management Plan needs to be related with land use planning and development, the paper argues.

1. INTRODUCTION

Of late, there is an increasing interest and a growing national consciousness of the importance of coastal areas in the country's valuable marine eco-system. The need and importance of protective measures for the conservation, preservation and development of the coastal areas has been accepted at all levels and efforts are being made at the central level as also by the concerned state governments to protect and develop the coastal areas by maintaining a certain distance from the High Tide Line (HTL). With the increasing urbanisation and industrialisation during the last 4 - 5 decades, the Indian coast is seriously threatened. The industries release their waste water, often untreated, to nearby coastal waters and estuaries, rivers and reefs. A number of studies of near-shore areas and estuaries largely along the west coast have been undertaken during the last 10 years or so to evaluate the impact of waste water release on the marine ecology. These studies have indicated that the coastal waters are, by and large unpolluted except for some localised and severely to moderately 'hot-spots' adjacent to urban and industrial areas. However, some of them have started showing signs of environmental degradation as they are severely polluted.

India has a coast line of 7,500 Km which is 61 % of the land area, and has 14 major, 44 medium and 162 minor rivers discharging 1645 cu km of fresh water every year to the seas around the country. The important major rivers are Ganga, Mahanadi, Godavari, Krishna and Kaveri on the east coast and Narmada and Tapti on the west coast. With the increasing industrialisation, the near-shore water bodies have conveniently become recipients of a variety of pollutants.

Similarly there has been haphazard construction along the coast line although the existing legal tools available under the State Town Planning Acts and the Municipal Acts, etc., could have been easily invoked to control and regulate the construction activities along the coast line. The Environmental Protection Act, which came into force in 1986 could also have been used to streamline the coastal areas both from construction activities, from environmental point of view. The Late Prime Minister Smt. Indira Gandhi issued instructions in 1981 to ban construction activities within 500 m, of the high tide line to ensure that indiscriminate construction activities do not result in serious environmental impact in such areas. The directive was observed unevenly because in certain stretches it was not fully implementable and also because it was not legally

binding. With a view to providing statutory back up to impose graded restrictions to location specific conditions, the Government of India, Ministry of Environment and Forests notified on 19th February 1991, coastal stretches as Coastal Regulation Zone (CRZ) and regulating activities in the CRZ under Section - 3(1) and Section 3(2) (V) of the Environmental Protection Act, 1986 and Rule-5(3) (d) of Environmental (Protection) Rules, 1986. Earlier objections had been notified against the declaration of coastal stretches as Coastal Regulation Zones and imposing restrictions on industries, operations, and processes in the CRZ. After considering all the objections, the notification was issued declaring the coastal stretches of seas, bays, estuaries, creeks rivers and back-waters which are influenced by tidal action (i.e. the land ward side) up to 500 m from the high tide line, (HTL) and the land between the low tide line (LTL) and the HTL as Coastal Regulation Zone (CRZ) and imposed restrictions on the setting up of industries, operations and processes, etc., in the CRZ. The high tide line, for purposes on this notification, is the line up to which highest high tide reaches at spring tides. It has also been clarified that the distance on the high tide line to which proposed regulations would apply in the case of rivers creeks and back waters would be notified on a case by case basis for reasons to be recorded, while preparing the Coastal Zone Management Plan (CZMP) and this distance should in no case be less than 100 m or the width of the creek, river or back water whichever is less. The notification has listed the prohibited activities in the CRZ, permissible activities to be regulated and the organisation and machinery for monitoring and enforcement of these statutory directions has also been prescribed. The Annexure - I of the notification gives the guidelines for the classification of CRZ into four major heads which the coastal states and the union territory administration are required to be followed in categorising their coastal areas, while Annexure - II relates to development of beach resorts / hotels in the designated areas of CRZ - III, for temporary occupation of tourists / visitors with prior approval of the Ministry of Environment and Forests.

The Ministry of Environment and Forests have also constituted a Task Force in November, 1992, for examining the Coastal Zone Management Plans in terms of the CRZ notification and in keeping with the scientific, economic, aesthetic and social aspects of the environment and suggest modifications, if any, in the draft CZMPs for all the coastal States and UTs along the coastal stretches of the country.

Before the notification and the guidelines issued the same were discussed, it needs to be mentioned that action to plan and develop the coastal areas, as part of a bigger area Plan or the Regional Plan can be taken up under the State Town Planning Acts and the rules made thereunder. In fact, the coastal area fronts are not possible to be planned in isolation. A Plan fully integrated with coastal regulation zones and with the surrounding villages is required to be drawn up. The regulations as outlined in the notification can be built into the Town Planning rules framed under the Acts.

2. NOTIFICATION OF MINISTRY OF ENVIRONMENT

According to the notification dated 19th February, 1991 of the Ministry of Environment, the coastal stretches within 500 m of the high tide line of the land ward side are classified into 4 categories for regulating development activities.

- **Category - I** includes areas which are ecologically sensitive and important such as national parks, sanctuaries and are likely to be inundated due to rise in sea level, consequent upon global warming. It also includes areas between low tide line and high tide line.
- **Categories - II** refers to areas which have already been developed up to or close to the shore-line. The developed area means that area within the municipal limits or in any other legally designated urban areas which is already substantially built up and provided with drainage and approach roads and other infrastructural facilities, namely water supply, sewerage mains, etc.
- **Category - III** includes the areas which are ecologically un-disturbed and do not belong to either category-I or category-II and include coastal zone in the rural areas, developed and un-developed and also areas within municipal limits or other legally designated urban areas not substantially built up.
- **Category - IV** includes the coastal stretches in the Andaman and Nicobar, Lakshdweep and small islands, and those designated as I, II and III would come in category - IV.

For these coastal regulation zones, the concerned authorities at the state / union territory level are required to regulate the development of construction activities in conformity with the prescribed norms. The notification has laid down that no new construction shall be permitted within 500 m of the high tide line in (CRZ-I) . Similarly, no construction activity, except expressly permitted like facilities for carrying treated effluents, waste water discharges into the sea, facilities for carrying sea-water for cooling purposes, oil, gas and similar pipe lines and facilities essential for activities permitted under the notification, shall be allowed between the low tide line and the high tide line. In CRZ-II, no buildings are permitted either on the seaward side of the existing roads or proposed roads in the CZMP or sea-ward side of existing authorised construction. The buildings permitted on the land ward side of the existing and proposed roads would be subject to the local town planning requirements including the norms of FSI / FAR. Reconstruction without change in the land use can be permitted, but the design and construction of buildings shall be consistent with the local architectural style and surrounding landscape. With regard to CRZ-III, 'no development zone' has to be earmarked up to 200 m from the high tide line and no construction is to be permitted within the zone except for repairs of existing authorised structures not exceeding existing FSI, plinth area and density. The uses like agriculture, horticulture, gardens, pastures, parks, play fields, forestry and salt manufacture from sea water may be permitted in this zone. The vacant plots between 200 and 500 m of high tide line may be permitted for construction of hotels / beach resorts for temporary occupation of tourists / visitors with the prior approval of the Ministry of Environment and subject to the conditions laid down in the guidelines. The dwelling units could be permitted to be constructed within this zone as long as they are within the ambit of traditional rights and customary uses like fishing villages and *gaothans* but the total number of dwelling units should not exceed twice the number of existing units. The total covered area on all floors not to exceed 33 % of the plot size, over all height of the construction not to exceed 9 m and construction not to be more than 2 floors (ground floor and first floor). Similarly, reconstruction or alteration of an existing authorised building can also be permitted subject to the above stipulation.

CRZ-IV covers coastal stretches in the Andaman and Nicobar, Lakshdweep and small islands. The stipulations with regard to A and N islands are that no new construction of buildings are to be permitted within 200 metres of HTL, buildings between and 500 m from the HTL not to have more than two floors, total covered area on all floors not to be more than 50 % of the plot size and the total height of construction not exceeding 9 m. The design and construction of buildings is required to be consistent with the surrounding landscape and local architectural style. The corals and sand from the beaches and coastal water is not to be used for construction and other purposes including dredging and underwater blasting in and around coral formation. In the case of Lakshdweep and small islands the distance from the high tide line is to be decided, with reference to the size of the islands for permitting construction of buildings. This would be laid down for each island in consultation with experts and with the approval of the Ministry of Environment, keeping in view the land use requirements for specific purposes vis-a-vis local conditions, hydrological aspects and erosion and ecological sensitivity. Like A and N Islands the buildings within 500 m from HTL shall not have more than 2 floors, total covered area not to exceed 50 % of the plot size and the height of construction not to exceed 9 m. The stipulation with regard to design and construction of buildings, uses of coral and sand from the beaches, etc., are similar to A and N Islands.

Annexure - II of the notification has prescribed the guidelines for development of beach resorts / hotels in the designated areas o CRZ-III for temporary occupation of tourists/visitors. The construction of beach resorts, with the prior approval of the Ministry of Environment would not undertake any project component like fencing and any other barriers within 200 m in the landward side from the high tide line and within the area between the LTL and HTL. The total covered area on all factors would not exceed 1/3 of the plot size which shall not be less than 0.4 hectares, height of construction up to highest ridge of the roof not to exceed 9 in and construction shall not be more than two floors. The guidelines further stipulate that the ground water shall not be tapped with 200 m of HTL. However, within the 200 m and 500 m zone, it could be tapped with the approval of the central / state Ground Water Board. No extraction of sand, levelling, or digging of sandy stretches, except for structural foundation of buildings, etc. would be permitted within 500 m of HTL.

2.1 Coastal Zone Management Plans

While preparing the Coastal Zone Management Plans (CZMPs), the concerned authorities shall keep in mind the prohibited activities of the CRZs. The prohibited activities relate to setting up of new industries, manufacture or handling of hazardous substances, discharge of untreated waste and affluent from industries, cities, towns and other human settlements, dumping of city and town waste for the purpose of land filling, land reclamation, mining of sands, rocks, harvesting or drawl of ground water and construction of mechanisms within 200 m of HTL, and construction activities in ecologically sensitive areas. Other activities, except those prohibited, would need clearance within the CRZ only if it requires water front and fore-shore facilities. The classified operational components of defence projects would need a separate procedure. In this connection, it would be pertinent to mention that the Model Regional and Town Planning and Development Law formulated by the Central Town and Country Planning Organisation (TCPO) has been recommended to the States for adoption with such changes as to suit the individual

requirements, and defined operational constructions for which no permission is required from the Planning Authorities.

The notification has laid down that CZMPs identifying and classifying the CRZ areas should be prepared by coastal States and Union Territory Administration within their respective areas, in accordance with these guidelines and seek approval of the Ministry of Environment and Forests, Government of India within a period of one year from the date of notifications. Within the framework of such approved Plans, all development activities within the CRZ, other than prohibited activities and operational component of defence, ports and harbour projects are to be regulated by concerned state / union territory administration, in accordance with these guidelines.

The Coastal Zone Management, in fact, is the most important and effective method of planning and management of development in the coastal areas at the regional or national level. To do this, it is necessary that a Regional Plan for the entire area should be prepared by the respective coastal states / union territory administration under the provisions of the State Town and Country Planning Act and prepare CZMPs, making use of the available legal tools, like the Town Planning Act and its rules, village *panchayat* regulations, municipal act, land revenue code as also the coastal zone regulations notification.

According to a study conducted by the National Institute of Oceanography, Bombay it was revealed that though concentration of toxic heavy metals in the sea water along the Kerala coast was not high, the presence of mercury in the sea of Trivandrum from discharge of titanium effluents in the sea was causing a serious concern. The pollution level along Andhra Pradesh and Bombay coastal waters had shown high levels of pollution. The results of the study also demonstrated that the concentration of ammonia of Vishakhapatnam, following dumping of municipal and industrial wastes was likely to affect the coastal waters. A major portion of industrial wastes was released in the Ulhas river basin creek, Thane creek and the Bombay harbour. A high oil content was observed near Quilon harbour due to the discharge of oil and related waste by the mechanised fishing vessels operating in the vicinity.

In pursuance of the directive of the Ministry of Environment, Government of India, the coastal states and union territory administration are in the process of preparing CZMPs for their coastal areas.

3. CASE STUDIES

3.1 Goa

The National Institute of Oceanography (NIO) advanced scientific reasons (including global warming and inundation of land) for the demarcation of the coastal regulation zones and leaving a distance of 500 m from the highest high water mark (HWM) in the coastal region for construction activities. With regard to Goa, it has about 110 km length of coast line with varied features such as over hanging cliffs at certain places, large bays, estuaries, back water formation, etc. There are three types of sea front, namely, (a) the normal sandy beaches, (b) beach heads and existing villages where developments have already come up, and (c) promontories where the beach is not available. As per the CRZ regulations, stipulated control

line of 500 m is from the HTL. Since no actual data of demarcation of HTL on the maps is available, the maps have been prepared by the Government of Goa based on the high water mark for control which is available in the topo sheets of the Survey of India maps. The map need to be adjusted when the actual demarcation showing the HTL of the Survey of India become available. In Goa all along the sea front, a width of 200 m from the HTL has been marked as no construction zone since 1984, though in certain rare cases it has been relaxed to 90 m. In the case of lands fronting estuaries, creeks and rivers, this control was not being exercised. The CRZ notification is applicable to these areas also up to the limit where tidal action / salinity ingress is felt and the CRZ - for rivers, creeks and estuaries, extends upto 500 m from the HTL. However, in certain special cases, for reasons to be recorded, the distance to which the regulation will apply could be reduced to 100 m or the width of the river or backwater, whichever is less. Estuaries are part of the sea and the limit of 500 m is applicable to them, Goa is maintaining a distance of 10 m set back along the river front as 'no development zone' and the land adjacent to river front needs to be classified into different categories as per the notification, depending upon the existing land use.

A specific relaxation of CRZ provisions has been sought by the Government of Goa on the following points:

- A limit of 200 m width should be applied in the case of sandy beaches instead of 500 mt;
- This width should be reduced to 50 m for pronotories; and
- The village should be allowed to be expanded irrespective of the distance from the high water mark.

The CRZ notification is applicable to all types of beaches (interface) between land and sea tidal water and not only to sandy beaches and the CRZ extends upto 500 m from the HTL and not upto 200 m. The expansion of the village is permitted in the of areas of CRZ-III only in the 200-5000 m belt with the number of dwelling units not being more than double the existing number.

The coastal stretch of 69 km out of the total length of 110 km Goa has been marked as CRZ - II, but it does not specify the criteria laid down in the notification since it is not within the municipal limits or other legally designated urban areas and also not substantially built up and provided with infrastructure facilities.

It may, however, be conceded that there are natural constraints for development of human settlements in the hilly terrain of the state since it is mostly covered with dense forests and mining operations similarly, the mid-land area is low lying. The population is largely concentrated within the coastal *taluks*. Even the mining activities would get exhausted in another decade of so. The rivers are scattered all over the State and there are genuine difficulties in implementing the set back of 100 metres along the rivers and other norms stipulated in the CRZ regulations and leaving little land for future expansion of settlements.

3.2 Daman and Diu

With regard to the Union Territory of Daman and Diu, only those areas which fulfil the criteria of CRZ-II as per the notification should be classified in this category. Similarly, the proposed set

back on the river front of Damam Ganga river should be kept at a minimum of 100 m instead of 50 m, since the river width is 300 to 500 m. The quarries, fish farming and agriculture should be removed from CRZ-II in Diu. Except for the built up portion of municipal areas, the rest of Diu island can be classified as CRZ-III or IV depending on the existing land use.

3.3 Pondicherry

Pondicherry comprises of four discontinuous settlements i.e. Pondicherry, Karaikal, Mahe and Yanam, away from each other. The first two are situated along the Bay of Bengal coast, while Mahe is situated along Arabian sea coast. It has a total coast line stretch of 43.125 km. After detailed survey, keeping in view the characteristics of coastal areas and the norms prescribed in the government notification, the U.T. of Pondicherry coastal areas are grouped in to CRZ-II includes the mangroves of the Ariankuppam river and Arikamedu in which no developments have taken place in this area. The Muthialpet in the north and Murungapakkam in the south within Pondicherry municipal area stretching to a length of 6 km forms the CRZ-II in which substantial developments right up to the sea face with residences, office buildings, institutional developments with all basic infrastructure have taken place. In this area, the sea face of Pondicherry town along the boulevard to the length of 1.5 km is strictly controlled with coverage 50 %, FAR-120 and height 10.5 m. The remaining portion of the zone is subject to 60 % coverage and FAR 150. In the CRZ-III, the coastal stretch of Kalapet and Pillaichavady area of 4.25 km and south of Murungapakkam upto Kanniakoil (13.0 km), which is basically rural is classified as CRZ-III. It is within the limits of *Panchayats* and not much developments have taken place. The coverage permissible in this area is 60 % and FAR 150. Similarly, in the Karaikal region, the entire coastal stretch which is relatively undisturbed and not much development has taken place and has been classified under CRZ-III and any further developments in this coastal zone will follow the norms of 60 % coverage and FAR 150. In the Mahe region on the west coast with the coastal stretch of 2.47 km falling in the Municipal area, the developments have taken place right up to the coast and is developing into a commercial center. It is classified as CRZ-II and the maximum permissible coverage is 60 % and FAR 150.

All the three regions namely, Pondicherry Region, Karaikal Region and the Mahe Region are declared as Planning Areas under the Pondicherry Town and Country Planning Act and the developments are guided by the concerned Planning Authorities setup under the Act. The Environmental Control and Landscaping Committee clears proposal of any building with height of three storeys and above after which the planning permission is given and all developments within 500 m from the coast line are proposed subjected to the coastal zone regulations.

3.4 Andaman and Nicobar Islands

With regard to A and N islands, they have classified the various islands into CRZ-I, CRZ-II, CRZ-III and CRZ-IV, but have sought certain changes in the regulations as per the notification because of the peculiar character of the islands. It has been pointed out that these islands have emerged largely due to geological upheavals with the result that the hills right from the sea-shore are evident at many places. There is very little flat coastal area with sufficient width. The coastal dwellers are tribals and their dwelling houses are hardly 50 m away from the HTL. Under these circumstances, they have expressed their difficulty in following the 200-500 m restrictions from

the HTL for enforcing the coastal zone regulations. Other problems are that there is no perennial river in these islands except in Great Nicobar - island from where, sand can be collected for development works like construction of buildings and roads, etc., sand is available only in patches in coastal zone.

Similarly, there is a problem regarding restrictions on harvesting of ground water from within 200 m of HTL. Because of these local conditions, suitable modifications in the coastal zone regulations are required to be examined. These aspects require a careful study. Union Territory Administration have also classified several areas in CRZ-II. As per the notification, only those areas which fall under the municipal limits and are sufficiently built up could qualify for classification in this category like Port-Blair. In CRZ-I no construction is permissible within 500 metre of HTL.

3.5 Lakshadweep

Union Territory of Lakshadweep has similarly pleaded that in no case the distance should be kept more than 20 metres as against 50 metres suggested in the notification in view of the very small size of the territory and the local houses being in existence even within ten metres of the coastline. Ground water extraction is also not possible to be totally banned as no other water sources are available. Likewise, total ban on the collection of coral reef has not been possible since no alternative building material is locally available and people can not afford to bring building material from the mainland. All these limitations require to be studied in detail before any relaxation in the CZR is considered. Other coastal states are expected to come forward with other CZMPs.

4. CONCLUSIONS

The development control within 500 metres, as stipulated in the CRZ regulations, is indeed, the first line of defence against despoliation of sea coasts and beaches. The increasing pressure of development due greater investment at many places of the coastal areas requires to be channelised within the framework of a Regional Plan encompassing a bigger area so that concentration along the coastal stretch is prevented. The Coastal Management Plans should be related with spatial aspects like integrated development of beaches and coastal areas through proper land use planning and development with effective statutory back up.

The above discussion is a pointer to the imperative need for a detailed knowledge of the coastal areas, base map, identification of HTL and the existing structures, impact of sea level rise, etc., followed by preparation of CZMPs in accordance with the guidelines with suitable relaxations to suit local conditions. Ideally, this process should begin well in advance to mitigate environmental problems before it is too late.

REFERENCES

Government of India (1986), *Environmental Protection Act, 1986*

Government of India, Ministry of Environment and Forest (1991), *Coastal Regulation Zone (CRZ) Notification 1991*

27 | PLANNING AND DEVELOPMENT OF COASTAL AREAS

Abstract

This paper narrates the problems of the coastal areas in India, even though the marine pollution have not yet turned to be alarming but certainly they have reached a stage where they no longer can be neglected. The changing orientation of human activities and increasing awareness of environmental issues calls for development and management of coastal areas in an integrated manner. The need is to conserve and protect the coastal areas by taking regulatory and preventive measures and promoting those activities which are environment friendly and sustainable. Preparing Development Plans for the management of coastal areas at various levels is not sufficient because it would be essential to inculcate awareness among the masses, to demonstrate that the oceans are the source of their food, and mineral and energy is also essential for their survival. Besides, the development plans at various level should indicate the protection measures from various natural hazards like flooding, cyclonic storms, rising levels of sea, etc., the paper highlights.

1. INTRODUCTION

Coastal areas, with unique ecosystem, formed by interaction between land and sea, have been playing key role in the economic and social development, world over in general and in India with a long coastline of about 6,000 kilometers, an exclusive economic zone with an area of 20.1 lakh square kilometers and a shelf area of 4.5 lakh square kilometers in particular. The total marine area around India is about 3 times its land area. The coastline of the country is bestowed with bounty of resources, both living and non-living, exquisite scenic beauty and historical heritage. Like in many other maritime countries, in India also sea shores have been the places for early human habitation and account much for the urban growth in the country. Out of four mega cities in our country, two i.e. Greater Bombay and Madras had its origin along the sea coast.

Large concentration of population in the coastal areas is heavily dependent on the ocean resources. The aesthetic and economic attractiveness of the coast have been the major drives for many human activities in the coastal areas. Beach-oriented tourism development is emerging as one of the most important activities in the coastal environment. Trade and transport, fishing, mining, industry and port-related activities are the other important pursuits in the coastal zone. However, the increasing dependency of man on the sea and his urge to have fast economic returns from the maritime zone have led to the indiscriminate exploitation of resources and overuse of coastal area. The growing pressure of human activities is causing a severe threat to the sensitive and fragile ecosystem of coastal zones. The problems of salinity, soil erosion, flooding, siltation, devastation of natural habitats, etc., in the coastal areas are the consequences of all such ill-conceived developmental activities. Besides, coastal zones because of its spatial setting are also exposed to the cyclonic storm. Discharge of dangerous chemicals, industrial waste, toxic substances, etc., in to the sea have increased water pollution, thereby affecting the marine life and posing hazards to the human health as well. In India, the problems of the coastal areas, including marine pollution have not yet turned to be alarming but certainly

they have reached a stage where they no longer can be neglected. The changing orientation of human activities and increasing awareness of environmental issues calls for development and management of coastal areas in an integrated manner. The need is to conserve and protect the coastal areas by taking regulatory and preventive measures and promoting those activities which are environmentally friendly and sustainable.

2. COASTAL ZONES

Coastal zone is a plain area extending between sea coast to the nearest elevated land. It is a strip of land and sea having a spatial setting. In view of the great diversity of coastal area the delineation of coastal zone for operation of coastal management policy vary from country to country. The Federal Coastal Zone Management Act of 1972 in the United States defines the coastal zone as the coastal waters (including the lands therein and thereunder) and the adjacent shore lands (including the water therein and thereunder) influenced by each other. In the U.S., the seaward limit is the outer boundary of the US territorial sea, 3 miles from the mean high tide line, whereas in other countries the seaward limits may extend to 6 or 12 miles. The landward limit is discretionary. In England and Wales the early coastal protection areas extended to whatever the coast was visible, while the coastal preservation areas vary from 300 meters to 8.3 kilometers. In France, there is a 100 meter zone where construction is generally prohibited; however, for planning purposes the zone considered is much wider.

In India, the Ministry of Environment and Forest has defined the Coastal Regulation Zone, under the Environment (Protection) Act, 1986 as coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters which are influenced by tidal action (in the landward side) up to 500 meters from the high tide line (HTL) and the land between the low tide line (LTL) and HTL. In these coastal regulation zones certain restrictions are imposed on the setting up and expansion of industries, operations, processes, etc. It would be pertinent to note that in all such coastal management zone regulation of building and construction activities may help in protecting the general character of narrow coastal belts of few hundred meters but in no way such protection would have any great impact on the overall conservation and protection of coastal areas. For overall planning and development of the coastal areas a larger coastal region would, however, require to be identified.

For operationalizing the concept of area planning or regional planning, attempts have been made from time to time to identify various planning regions at the national and state levels. Recently, Town Planning and Valuation Department of Gujarat has delineated the Coastal Region of Gujarat, using the parameters of soil types, groundwater, selected minerals, marine fishing centers, sea-based industries, dependency on sea, ports, etc., by taking *Taluk* as the unit of study and analysis. Registrar General and Census Commissioner, India has also completed an exercise on regional division of India based on 1981 census figures. The entire country has been sub-divided into four macro, 28 meso and 101 micro regions based on physiography, geological structure, forest coverage, climatic conditions and soils. All these regions at various levels are varied in physio-geographic considerations and also delineable in terms of administrative units and boundaries in order to facilitate plan formulation and plan execution. Within the frame

of micro regions, sub-micro regions have also been identified under the scheme at the district level.

In this regionalization scheme coastal plains and islands have been identified as separate macro region. All the coastal plains have been clearly demarcated in the coastal districts as sub-micro region of the district. The coastal plains are sub-divided into four sub-regions, namely Gujarat coastal plains, Western coastal plains, Eastern coastal plains and the Islands. Gujarat plains are mainly drained by Sabarmati and Mahi rivers. Western coastal plains, lying between Sahydari (Western Ghats) and Arabian sea, is a narrow region particularly in Karnataka coast. Maharashtra littoral, Goa coast, Karnataka coast, North Kerala coast, Central Kerala coast and the South Kerala coast are the six main divisions of the Western coastal region. The Eastern coastal plains formed by alluvial filling comprise some of the largest delta. The region has been divided into eight divisions, namely Kanya Kumari coast, Sandy littoral, Coromandal coast, Southern Andhra coastal plains, Krishna delta, Godavari delta, Northern Andhra coastal plain and the Mahanadi delta. Andaman and Nicobar Islands in the Bay of Bengal and the Lakshadweep are the other areas of Coastal Zone in the country. Coastal areas so identified are composed of one or more of the following elements of landscape: sandy beaches, coastal sand dunes, mud flats, alluvial tracts along rivers or lagoons or estuaries, laterite platforms, erosional surfaces in the hard basement rocks, residual hills, etc. The structure and soils of the coastal zone favorably support agriculture and related activities.

3. POPULATION DENSITY IN COASTAL ZONES

For working out total population and analyzing the pattern of population density in the coastal zone all the districts falling in coastal plains and islands have been taken. Accordingly, as per 1991 census the total population of coastal areas is about 147 million. Occupying about 10 % of the total area of the country, the Coastal Zones accommodate more than 17 % of the country's population which clearly indicate the pressure of the population in the coastal areas. The major concentration of population is in the eastern coastal plains which account for 60 % of the total population of the coastal zone. In the entire coastal stretch, Kerala and Tamil Nadu coasts are not only holding the largest slice of coastal population but are also the most thickly populated coasts.

The density of population for the entire Coastal Zone works out to be 432 persons per square kilometer as against 256 persons for the country as a whole. It varies from 1015 persons per square kilometer for the coastal plains of Tamil Nadu to 141 persons along Gujarat coastal plains. Madras metropolitan district, however, recorded the highest density of population of 21,810 persons in the zone followed by Bombay metropolitan district with 16,433 persons per square kilometer. The districts of Kanyakumari, Chengalpattu (Chennai) Thanjavur along Tamil Nadu Coast; Thane along Maharashtra Coast; Daman and Diu alongwith all the nine coastal districts of Kerala have registered a higher density of more than 500 persons per square kilometer. Nellore and Parkasam districts of Andhra coast; Uttara Kannada along Karnataka coast; Ratnagiri in Maharashtra; Jamnagar, Bhavnagar, Amreli and Kachch districts of Gujarat coast are thinly populated districts with less than 200 persons per square kilometer. The lower density of population in these districts may be attributed to unsuitable terrain, proneness to

natural hazards or comparatively larger area of the districts. Rest of the coastal districts have medium density of population ranging between 201 and 500 persons per square kilometer. It is, therefore, evident from the above analysis that major parts of the Coastal Zone are densely populated.

4. COASTAL TOWNS

For studying the urban pattern in the coastal areas, all the towns and cities located in the sub-micro region demarcated as coastal plains have been taken. In all, 271 urban settlements are located in plains. The total population of these 271 towns is 26.9 million. The urban pattern in the coastal zone is characterized by the domination of Class-I towns (population one lakh and above) which are just 25 in number but contain as much as 77 % of urban population of coastal plains. Out of the remaining 246 towns, 29 are Class-II towns (50,000-99,999) 84 are Class-III (20,000-49,999) and the rest 133 towns are small towns with population below 20,000. A notable features of urban concentration in the coastal zone would be evident from the fact that the coastal towns account for 5.7 % of the total number of towns of India while they have more than 12 % urban population of India.

During 1981-91, the number of Class-I towns increased from 21 to 25 while that of Class-II from 15 to 29. The growth of population of Class-I towns during 1981-91 has not been very significant but population of Class-II towns increased tremendously at the decadal growth rate of 82 % as against 28 % at the national level. The population of Class-III towns and other lower categories has, however, remained almost constant. Most of the towns along the coasts either have port-related fishing activities or are the centers of trade and transport. It is interesting to note that annual tonnage handled by the major ports increased considerably in the last decade but growth of population of the port towns except Paradeep, Vishakhapatnam and Mangalore is marginal. On the other hand, land use structure of these towns indicate a substantial area under the transport and industrial use. Urban trends indicate that even the present concentration of urban population if not channelized in right direction may cause serious environmental problems not only in the towns and cities but in the entire coastal zone.

5. PROBLEMS AND ISSUES

All the elements of coastal environment system, namely air, land, water, flora and fauna are inter-connected, inter-related, inter-dependent and have co-evolved, co-existed and co-adapted. Deterioration in one, invariably affects the other elements of the system. Man, in his pursuit while living in human settlements along the coastal areas, tends to create its own man-made environment and in the process disturbs the natural environmental system at various levels. The problems of coastal areas, which are mainly of environmental in nature, are often caused through overuse and misuse of natural resources, transformation of natural environment, dumping and discharging of industrial and other wastes generated on the land into the sea through rivers and streams, resulting in global warming and the greenhouse effect.

Because of the peculiar setting, coastal areas are suffering from the problems of water logging, salinity and alkalinity mainly due to ingress of sea waters, over-exploitation of ground water

or excessive irrigation. According to an estimate, about 30,000 to 40,000 sq km of coastal areas are affected by the salinity problem all along the coastal belt, specially delta areas of Krishna, Godavari and Cauveri rivers, Kharlands along Maharashtra and Goa coast, coastal areas of Gujarat and Kuchch.

The low-lying areas along the coast, specially in Kerala, Goa, Gujarat, Konkan areas of Maharashtra, are susceptible to the havocs of flood. During the heavy rains, flow of water exceeds the draining capacity of existing channels and streams and the sea level also remains normally high during monsoon, the floods are caused all along the river banks and coastal areas. In 1983, about 1000 hectares of agricultural land was affected by the floods in Ratnagiri district of Maharashtra. Flooding is caused by the sedimentation of *nallas* and river beds. The east and west coasts are also prone to cyclonic effects, particularly Tamil Nadu, Orissa and Andhra Coast in the east, Kerala and Saurashtra coast on the west. Damage due to cyclone include loss of human life, and damage to buildings, crops, roads, etc.

Coastal areas are subjected to many pressures, chief among them is the population pressure. About 147 million people are living in the coastal zone but actual pressure of population on the coasts is much more. Large number of urban and rural settlements affect greatly the sea water by the waste they generate. It is estimated that about 35 cubic km of sewage is discharged per year into coastal waters from these settlements. Besides, industries located in these settlements also add their effluents at the rate of about 3.5 cubic km per year. Additionally, it is estimated that with the increasing use of pesticides and synthetic detergents, about 0.62 and 0.27 lakh tonnes of pesticides and detergents, respectively, are added into the sea annually. Movement of crude oil by the ships also cause water pollution, affecting sea fisheries. Rapid construction and building activities, particularly around the tourist importance centers, have not only resulted in haphazard and unplanned industrial growth but also overcrowding in the cities and towns. With the emergence of beach-oriented and water-front based tourism, developmental activities on a larger scale are coming up along the coast. The pressure of developers is so high that they always insist on reducing the limits of 'No Development Zone' along the coast. In the process, not only the environment is degraded by indiscriminate felling of trees but certain other socio-economic problems also crop up with the increasing flow of tourists and floating population.

There are many more problems in the coastal areas, particularly with regard to exploitation of resources, both renewable and non-renewable, such as mining and quarrying, fishing in shallow waters near the coast, exploitation of oil resources, over-exploitation of mangrove forests disturbing marine ecosystem, over-exploitation of sea woods, indiscriminate exploitation of corals causing severe destruction to both reef dwelling and reef building organisms as well as rendering coastal areas vulnerable to sea erosion, mass capture of turtles for human consumption, etc.

Major issues in the coastal development and management relate to the unique characteristics of the coastal settlements because they have limited hinterlands. These settlements are facing the problems of coastal erosion and threats from the sea. Diverse and varied nature of activities

in the coastal areas cause many conflicting issues. Conflicts may be seen in using particular stretch of coast either for forest or agriculture, forest or tourism, mining or tourism, fishing or tourism, industry or tourism, hotel or recreation and so on. The multiplicity of legislative measures overlapping in their jurisdiction while operating in the coastal areas sometime create more problems than solving the issue. The important issue in the planning and development of coastal areas is that whether regulative and preventive efforts limited to a narrow coastal belts would be sufficient measures for conserving and protecting the environment and ecosystem of the coastal areas or there is need to tackle the problem in a larger perspective. All these issues need to , be grappled with, before evolving any strategy for planning and development of coastal areas.

6. DEVELOPMENT STRATEGY

In all, there are about 30 major enactments related to the protection of environment now being administered by the central and state governments. These acts also include some of the legislative measures concerning the operation and control of activities and development in the ocean surroundings. The recent notification of the Ministry of Environment and Forest under the Environment (Protection) Act, 1986 regarding Coastal Regulation Zone specifically identified various coastal regulations zones for control and regulation of particular type of activities in each zone. The notification also stressed for preparation of Coastal Zone Management Plan for the purpose of regulating the development in the coastal zone. All such legislative provisions are, no doubt, helping in checking the water pollution and development activities at specific points or locations in the coastal belt but have not been very effective in preventing the over-all damage to the coastal eco-system or degradation of natural environment.

It appears that certain issues in the coastal management have either not been covered or remain unresolved in the absence of any broad national coastal policy or planning strategy.

In fact, the multiplicity of activities and varied type of development concern the coastal and marine environment and its fragility and uniqueness required the development of a special tool and technique. Since the coastal zone is not a closed system, the planning process must take into consideration the impact of development originating from outside the zone, which implies integrated planning over an area wider than individual zone. The benefits of coastal areas in various forms are also being taken by other adjoining zones. It would, therefore, be desirable to coordinate planning of coastal zones on a regional or larger geographic area basis. The planning and development of coastal areas may, therefore, be taken up at three tiers in an integrated manner.

First Tier, Coastal Regional Plans taking the larger area as identified divisions of Coastal Plains Region are required to be prepared for working out broad regional policy for the development of coastal areas. Such Coastal Regional Plans could be prepared under the provisions of State Town and Country Planning Act. The Coastal Regional Plans must be closely related to the requirement of the concerned stretch of the Coastal Zone from ecological and environmental points of view. These plans should identify clearly the areas of conservation in varying degrees and areas of protection with type of protection required.

Regional Plan should also indicate broad settlement system with major functions of each large sized urban centers, depending upon its potentials of development. The areas for future urban development and important development projects such as industrial projects, export processing zones, free ports, fishing harbors, processing plants, tourist resorts, etc., need to be identified in the Regional Plan.

Second Tier, Land Use Development Plan for each settlement, particularly urban, should be prepared within the broad frame of Coastal Regional Plan of the area. In these Land Use Plans, besides giving existing and proposed land uses, location of all proposed developmental activities irrespective of its size need to be indicated. The Plan should also give a broad frame of Development Code and the regulations for promoting as well as controlling the construction and building activities in various use zones. In fact, all the elements of planning and management should be embedded in these plans and should form part of normal system of planning and control at local level.

Third Tier at the lowest level, the Site Management Plans incorporating all the details required for execution of any project should be prepared. The Site Management Plans while emanating from regional and land use plans should indicate all the activities which are prohibited, permitted with some conditions and permissible. Such plans in letter and spirit would be like Coastal Zone Management Plans as suggested in the notification for Coastal Regulation Zone. The Site Management Plans by nomenclature itself would be detailed one and will not leave any scope of conflict between the two compatible activities. It would be advisable that for each project, whether it is for industrial location or for fishing harbor or for port activities, Site Management Plan should invariable be prepared.

7. CONCLUSIONS

Preparing development plans for the management of coastal areas at various levels is not sufficient because it would be essential to inculcate mass awareness among masses, to demonstrate that the ocean are the source of food, mineral and energy and it's role in the overall weather and climate. Information base on various aspects of coastal eco-system needs to be strengthened along with ecological mapping of the area. Development plans at various levels should indicate the protection measures from various natural hazards like flooding, cyclonic storms, rising levels of sea, etc., including typical design and form of buildings, with the participation of citizens.

REFERENCES

United States (1972) *Federal Coastal Zone Management Act*, 1972

Ministry of Environment and Forest, Government of India (1986), *Environment Protection Act*, 1986

28 | SINGRAULI REGION DEVELOPMENT PLAN

Abstract

Singrauli located on the borders of Uttar Pradesh and Madhya Pradesh, has been going through a process of fast industrial development, since 1960. Water from Rihand Lake (Govind Ballabh Pant Sagar) and power-grade coal from Singrauli coalfield have helped location of a number of Super-Thermal Power Plants and some other industries in the area, especially around the Rihand Lake. Fast pace of industrial development in the area has, however, resulted in diverse environmental challenges and development constraints which are jeopardizing a sustainable development process of the area. These challenges need to be addressed on priority basis if sustainable, environmentally clean, and safe development in the area is to take place and environment and ecology are not made a casualty of the growth process. Identification of the different problems faced by critical zones points to the need for a suitable approach to the development of these areas. This, in turn emphasizes the urgency of drawing up of the Development Plans where the development of coal mining and power sectors needs to be coordinated with other sectors of development like agriculture, forestry, and industry in the Region, so that adequate employment opportunities are made available by other sectors, in case development slows down in one sector. Singrauli Regional Development Plan drawn by Town and Country Planning Organization (TCPO) is leap in this direction for coordinated development of the region, the paper emphasizes.

1. INTRODUCTION

Located on the borders of Uttar Pradesh and Madhya Pradesh, the Singrauli area, has been going through a process of fast industrial development, since 1960. Water from Rihand Lake (Govind Ballabh Pant Sagar) and power-grade coal from Singrauli coalfield have helped location of a number of Super-Thermal Power Plants and some other industries in the area, especially around the Rihand Lake (Fig. 1). Fast pace of industrial development in the area has, however, resulted in diverse environmental problems and development constraints which are jeopardising a sustainable development process in the area. These need to be addressed to, on a priority basis if sustainable development - environmentally clean, and safe development - in the area is to take place and environment and ecology are not made a casualty of the growth process.

2. PAST DEVELOPMENT

Development of the Singrauli area began during the 1950, with the construction of two dams at Pipri and at Obra by the Department of Irrigation of Uttar Pradesh, mainly to provide water for irrigation. The main reservoir - Rihand Lake covers 458 sq km area and is one of the largest reservoirs in India. The installed capacity of its associated hydel power generating station - Rihand is 300 MW (6 turbines of 50 MW). The second reservoir, Obra, was designed mainly to act as a downstream flow regulator for the Rihand river. The installed generating capacity of the Obra Hydroelectric Plant is 100 MW (3 turbines of 33 MW).

Industries needing electric power were soon established in the vicinity of the Rihand dam. The first among them were the Hindalco Aluminium Plant and the Kanoria Chemical Plant, set up respectively, in 1962 and 1964. The latter produces chlorine, caustic soda, fertilisers and pesticides. Both Plants are located in the Renukoot area. The Uttar Pradesh State Cement Corporation began operating a cement factory near the Obra dam at Dala in 1970.

Fig. 1: Development Around Rihand Lake

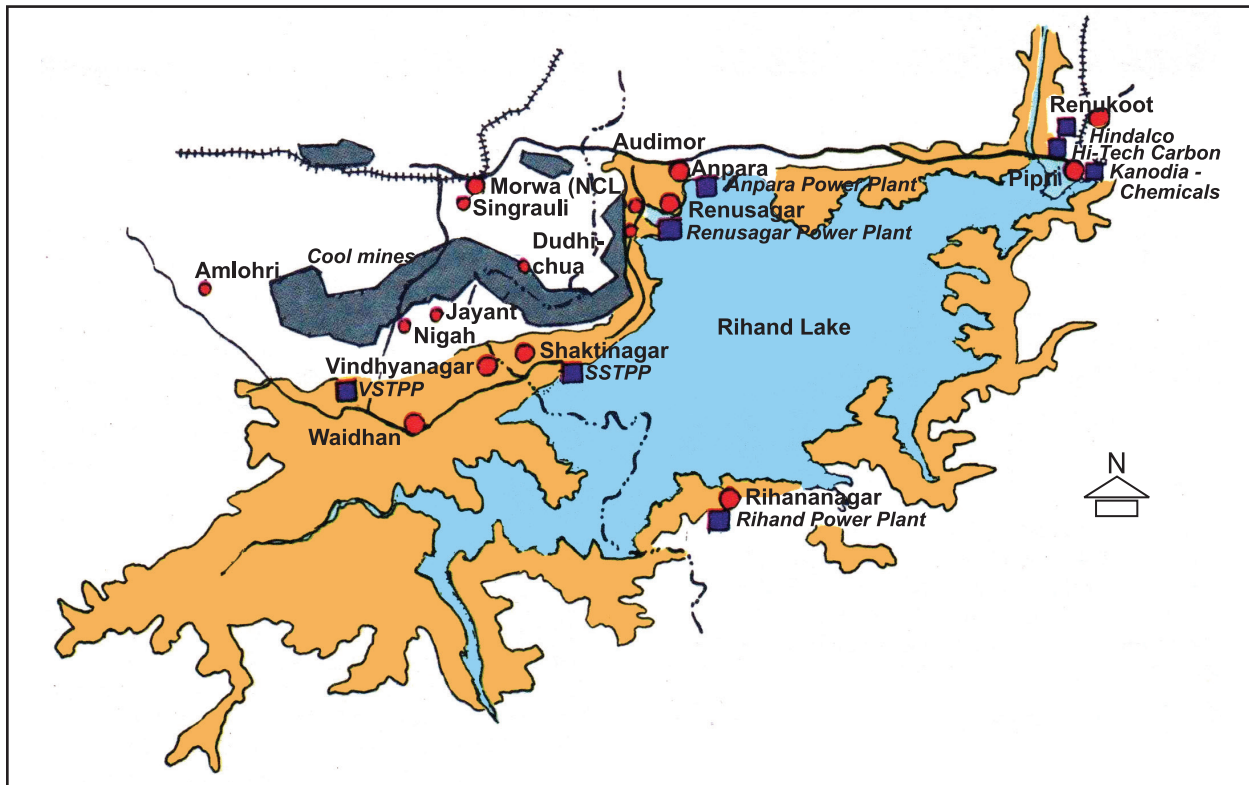


Fig. 2: Dam on Rihand River



Fig. 3: Singrauli Power Plant



As a result of large fluctuations in the discharge of the Rihand river and its tributaries, the Rihand and Obra Power Plants could not supply sufficient energy to the industries in the area. The Renusagar Thermal Plant was constructed by Renusagar Power Co. Ltd., in response to the need for a new power source for the Hindalco Aluminium Plant. Initially, a unit of 67.5 MW capacity was commissioned in September, 1967; later, units of the same capacity were commissioned in 1968, 1981, 1983 and 1984.

Two mines - Jhingurdah and Gorbi 'A' - were in operation when the area was initially developed. Due to the thickness of the coal seams, these mines were designed for open-cast operation. With the discovery of larger coal reserves, the area became an ideal location to set up power stations with sufficient bulk capacity to supply electric energy not only on a regional scale, but also on a national scale.

In 1975, the newly founded National Thermal Power Corporation (NTPC) began construction of large coal fired power generating stations around the Rihand Lake, designed to supply electricity both to the northern and western parts of the country. Between 1982 and 1984, NTPC built its first super thermal power station - Singrauli (5 x 200 MW). Two larger units of 500 MW each were added in 1986 and 1987. A second station, the Vindhyaachal Power Plant (4 x 210 MW) was commissioned between 1987 and 1989. The third one - the Rihand Power Plant (2X 500 MW) was commissioned between 1988 and 1989.

The Uttar Pradesh State Electricity Board (UPSEB) has also been a major producer of power generating capacity in the area. UPSEB installed new capacity (5 units of 50 MW and 3 units of 100 MW), at Obra between 1967 and 1975 to ease the initial supply deficits. More recently, five units of 300 MW were added at Obra, which were commissioned between 1978 and 1982. UPSEB, began operating the Anpara Power-Station, consisting of three 210 MW units. These were commissioned in 1986, 1987 and 1988.

3. PRESENT SITUATION

As of 1990, installed capacity in the Singrauli area totalled 6760 MW (636 MW thermal, 400 MW hydro). This includes UPSEB's power station at Obra and the original constructed hydro - power stations at Rihand and Obra.

For operational purposes, the expanse of the Singrauli coalfield has been divided into 12 mines. Of these, seven mines are currently under exploitation, two are in their start-up phase, and three are under preparation. The total proven and economically recoverable reserves in the 12 mines are, at present, estimated at about 2,600 million tonnes, with an annual production of approximately 23 million tonnes. The Singrauli coalfield contains an estimated 3,800 million tonnes proven reserves; 1,300 million tonnes indicated reserves and 5,700 million tonnes inferred reserves. This amounts to a total estimated reserves of 10,800 million tonnes, which are enough to meet the fuel requirements and to generate 20,000 MW for the next 130 years.

4. FUTURE DEVELOPMENT

There is a high demand for electric power in India. The reserves of the Singrauli coalfield are more than sufficient to provide fuel for several more power plants in the area. It is estimated that the area is capable of producing some 20,000 MW. Singrauli, Vindhyaachal and Rihand power-stations are sufficiently large to accommodate further expansions. There is a greater scope for locating two new Plants with 3,000 MW each in the Madhya Pradesh area on the skirts of Rihand Lake.

To sustain these additions to the generating capacity, expansion of the production capacities of the coal mines would be required. Coal production has the potential to reach 65 million tonnes annually which is about three times the current level of production, if this coal is not used to generate power on site, it will be exported for power generation to other parts of the country.

Industrial development would naturally get a boost. Hindalco has plans to increase its annual aluminium production from 150,000 to 250,000 tonnes. Hi-tech Carbon has a proposal to double its production. These expansions can be adequately supplied with power. Small scale Industries associated with power generation and coal production, explosives, gas production and various mechanical industries, are also expected to develop.

5. KEY PLANNING, DEVELOPMENT AND MANAGEMENT ISSUES

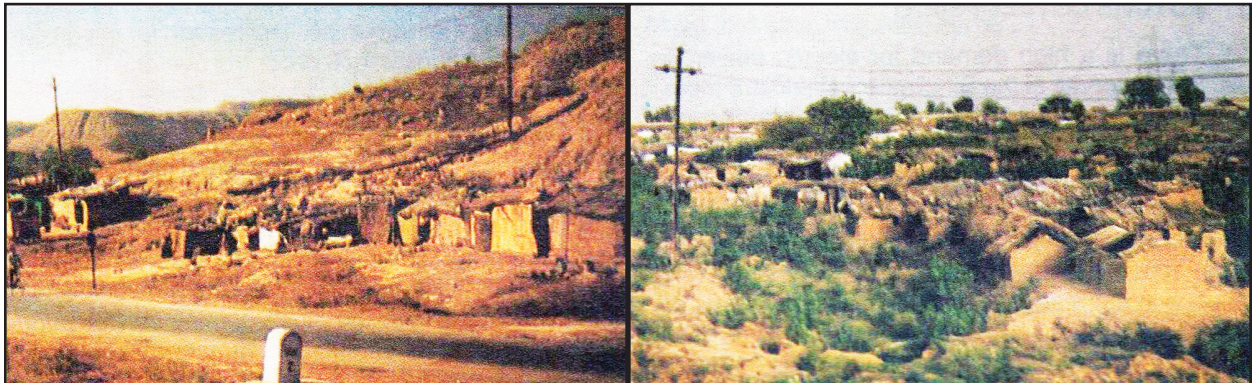
Coal mining and power generation have made the Singrauli area the nerve center of energy production in the country. In the wake of these developments, a number of project townships have been planned in the last 20 years. Industrial location in the area has been timed with the provision of urban infrastructures, but the horizon of the project authorities has been limited to the township planning; the planning exercise limited to the housing, social welfare facilities and neighbourhood shopping, required by the project workers only. A sizeable population, engaged in activities generated by the projects but not part of it, has no access to the social and physical infrastructures available in the townships. The population in the outskirts is more or less isolated from the townships. Side by side with the planned developments of the townships, slum conditions have developed in the areas immediately surrounding the townships. The reason for the growth of slum conditions is lack of control over the growth of these areas. These have created a number of environmental problems.

There is wide disparity between the basic facilities and amenities like water supply, drainage, education and medical facilities available in the project and non-project areas. The shelter problem of the non-project population has resulted in the growth of shanties and squatting by the mushrooming service population in the labour camps of contractors hired by the coal mines and the power plants.

The development of the area is of critical importance to the growth of energy sector and its high degree of industrial transformation apart, the Industrial concentrations have subjected the area to environmental stresses and have created unpleasant and harmful side-effects of upsetting the ecological balance and creating environmental pollution - air, water and land in the area. The environmental problems in the area are the outcome of inevitable resource use. Exploitation of resources have unavoidable disruptive impacts on the people and environment. It has created an inevitable "eco-health" problem. However, the environmental problems of the Region are both growth related as well as poverty related. The major planning, development and management issues faced by the area are:

- **Physical Environment:** Problems experienced are continued deforestation caused by an increasing population and development; pollution of Rihand Lake and its watershed caused by mining operations, power plants, industry and siltation aggravated by deforestation; and air pollution caused by power plants, industrial and mining operations.
- **Infrastructure and Services:** In addition to the poor regional (air, rail, road) access to the rest of India, local infrastructures and services outside of enclaves provided by major employers in the area are deficient. Local road systems, drainage, water supply, solid waste collection and disposal are inadequate. Sanitation and health care is poor and deficient.

Fig. 4: Slums around Project Townships



- **Resettlement and Rehabilitation:** An estimated 100,000 people have been resettled as a consequence of various modern sector activities. They were generally poor and landless. The resettlement and rehabilitation programs for the resettled population is inadequate.
- **Land Use Planning:** Growth is taking place within a narrow corridor on the north-side of Rihand Lake. The corridor is constrained by several mines and national forest holdings. Additional lands are being held or reserved by the mining and thermal power entities and are currently not available for development. Lack of an agreed development strategy for the area is constraining development and causing inefficient land use.
- **Slum Development:** As a result of inadequate infrastructure and services and land, some of the expanding population is illegally squatting in shanties on state or private lands and along roads and right-of-ways. This is compounded by labor camps which are disorganized and with few services.

Fig. 5: Mining of Coal at Jayant



Fig. 6: Excavation of Bina Open Cast Mine

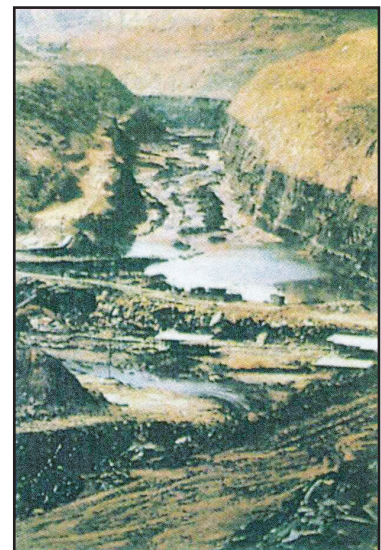


Fig. 7: Jayant Mine Labor Colony: Overburden dumps in the background and soil being severely eroded



- **Institutional Development:** The problems being faced in the area are aggravated by institutional weaknesses, including poor management, lack of adequate financial and staff resources and by unclear legal and functional jurisdiction between the numerous central and state government agencies functioning in the area. Management of the area is complicated because Singrauli located on the borders of two States - U.P. and M.P. is not adequately perceived as an Integrated Region. There is very little municipal structure and tax base is small. The Special Area Development Authorities (SADAs) in each of the two States need strengthening, especially the UP, SADA. There is the open question as to whether these organizations can effectively act as local governments for such a large area. State regulatory agencies and the Ministry of Environment are facing difficulties in effectively guiding and enforcing compliance of environmental standards. Furthermore, while progress has been made, there is no arrangement for inter-agency coordination for developing and maintaining a unified strategy and program for the development of the region, taking into account the interests of the central, state and local governments, the major employers in the area, and the area's residents.

6. NEED FOR COORDINATED DEVELOPMENT

There was / is no overall coordinated Plan for Singrauli area which could conceive of the needed improvements, developments and the long term economic viability of the area. Each entity working in area, particularly NCL and NTPC had done planning for their own projects

Fig. 8: Ash Slurry Transportation from Super Thermal Power Plant and Ash Pond



but there is little, if any, coordination either among the various entities or between two States involved. The Town and Country Planning Organisation (TCPO) prepared a Structural Plan for the project area (857 sq km) in 1987 as a consultancy project exercise on behalf of the NTPC and NCL - the two major agencies operating in the area. The main objectives of the Plan were to develop the necessary urban infrastructure, and to improve the living conditions by controlling environmental degradation and by planned urban expansion.

The development in the project areas affect a much larger area, i.e. the area intervening between the project areas and those surrounding it. It is now realised that no satisfactory development of the project areas can be achieved without general development of the entire area, leading to growth in income an employment. For achieving overall development long-term comprehensive plan frame is necessary.

The Ministry of Urban Development has been made the nodal Ministry for the purpose of ensuring coordinated development of Singrauli area in consultation with the state governments of Uttar Pradesh, Madhya Pradesh, NTPC, NCL and the Ministry of Energy and Environment and Forests. The work of preparing the comprehensive Regional Plan has been entrusted to the Town and Country Planning Organisation (TCPO).

Fig. 10: Singrauli Regions

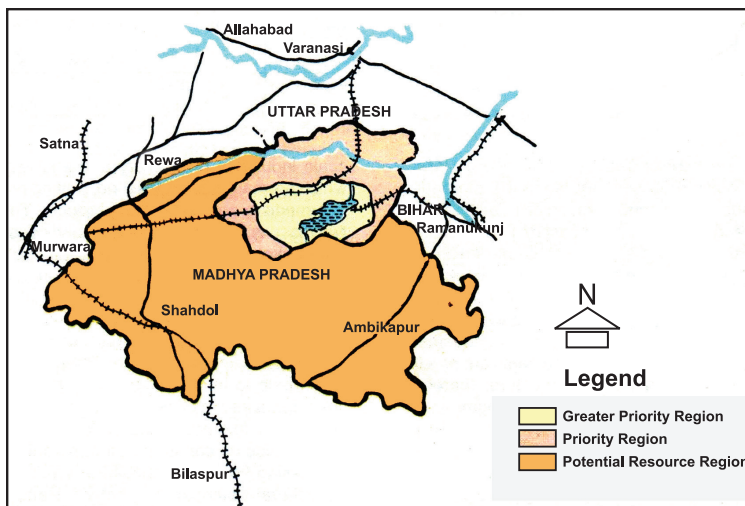


Fig. 9: Singrauli Ash Pond



TCPO demarcated three areas namely, Greater Plan Priority Region, Priority Region and Potential Resource Region (Fig. 10). It was thought to select one of the three demarcated regions for immediate planning and development purpose by giving due considerations to:

TCPO demarcated three areas namely, Greater Plan Priority Region, Priority Region and Potential Resource Region (Fig. 10). It was thought to select one of the three demarcated regions for immediate planning and development purpose by giving due considerations to:

- The physical, social and economic linkages of the area surrounding the project area;
- The economic viability of the demarcated region also the range of resources within the region; and
- The size of the region should not be so large as to render a comprehensive plan too general.

The Greater Priority Region, extending over an area of 132 sq km

Fig. 11: The Components of Singrauli Region

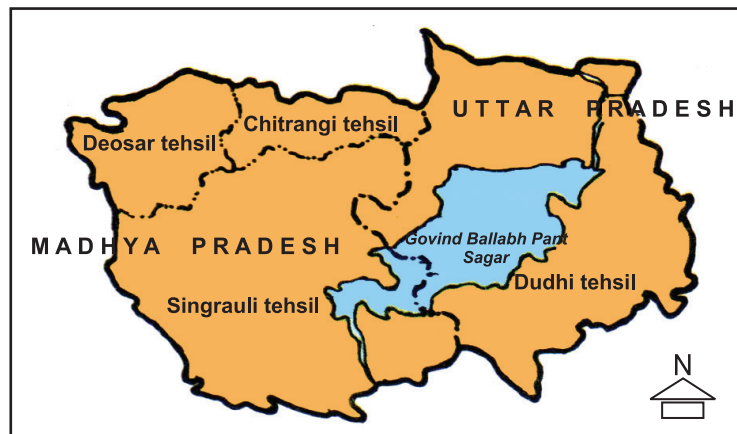


Table 1: Singrauli Planning Region and its Components

Tehsil	No. of Villages	No. of Towns	Area		Populations (1981)
			Hectares	sq km	
Chitrangi	39	-	16,917	169.17	23,795
Deosar	32	-	32,418	324.18	24,024
Singrauli	228	-	1,25,757	1257.57	1,68,676
Dudhi	102	2	92,316	923.16	1,31,085
Total of Four Tehsils G.B. Pant Sagar	401	2	2,67,408	2674.08	3,47,580
	-	-	45,775	457.75	-
Total for the Region	401	2	3,13,183	3131.83	3,47,580

comprising parts of Singrauli, Deosar and Chitrangi *tehsils* in Sindhi district of Madhya Pradesh and part of Dudhi *tehsil* in Sonbhadra district in Uttar Pradesh, was chosen, which is not so large as to render a comprehensive plan too general. The components of the Region are given in Table 1 and shown in Figure 11. Detailed Development Plan has been prepared for this Greater Priority Region.

7. THE PLAN

The preparation of Regional Development Plan for Singrauli Region is divided in two phases. The first phase which has already been completed, assesses the current state of development in the Region and its impact on various sectors; suggests approach to the development of the Region and indicates measures for such development; identifies several critical development zones and priorities for investments, specially with regard to land constraints and social infrastructure requirements; and discusses the development and evaluation of the alternative regional development concepts like *status quo*, industrial focus, industrial environment plan, environmental focus, etc.

The picture of the Singrauli Region emerging from the study of its different aspects is on an area under environmental stresses, both growth-related as well as poverty-related. Perhaps in no other region of the country, the conflict between development and environment looks to

be so sharp as in the Singrauli Region because of the concentration of industries like thermal power generation, open-cast mining, besides other industries which are prone to cause environmental damages of a more serious nature. Growth of industrial workforce and service population in the Region has led to the emergence of slums and squatter settlements on the outskirts of the planned industrial townships. As said earlier, these settlements are bereft of basic physical and social infrastructure, thereby causing environmental problems. A large number of villages were affected by land acquisition. Some of the villages which were partially acquired which were existing either with smaller agricultural holdings or with no farmland at all. The inhabitants of these villages are in an unhappy situation. Their traditional way of life has come under the influence of an industrial change without the attendant amenities. These villages are not urbanised and yet most of them have no trace of agricultural activity left. They invariably lack basic facilities and being close to the plants and mining areas are affected by pollution.

The Region presents great contrasts i.e. highly organized industrial complexes have come at a few centers while large areas depend upon primitive agricultural practices; while organised industrial economy flourishes in a few areas, most of the Region has a subsistence economy. Immense wealth is produced in the form, of energy and coal within the Region, except for the people directly involved in these efforts, most of the people of the Region have a very low per capita income. The industries established here have not attracted around them small, medium and large scale industries of auxiliary and ancillary character which normally get established, putting out a range of intermediate and consumer products. There may be two reasons for this, intermediate and consumer good are market-oriented. The Region has not developed sufficient consumer demand for intermediate and finished products giving rise to their manufacture within the Region. In the absence of such a demand, what ever demand has been there, has been fed by consumer goods imported into the Region. Those sector which help to build up consumer purchasing power have remained backward and stagnant; as for instance, an important and widely pervading sector which builds up consumer demand and the require purchasing power is agriculture. While in the Region agricultural potential is substantial and even in it present backward stage is able to meet the needs of the Region, attention paid to the development of agriculture has been scanty. Investment in the agriculture has to include not only direct inputs i.e. land, its improvements, irrigation, seeds, fertiliser, etc., but also the development of an infrastructure in the form of marketing facilities, road and railway network and service facilities to meet the needs of a growing agricultural economy. Very little, if at all, was done in this direction, with the result that 97 per cent of the cultivated area was without irrigation facilities in spite of the large resources of water available in the Region. Forest resources of the Region are higher than the country's average but forest products contribute only a very small percentage to the economy of the Region. If carefully protected and judiciously managed, it can be perpetually productive, protective and bio-aesthetic.

The planned industrial townships are equipped with modern housing, health, education, shopping and recreational facilities and have their own water supply, sewerage and solid waste collection systems while other settlements in the Region are lacking in basic facilities like transport and communication, drinking water, health, education, housing, markets, etc. Provision of these

facilities is as necessary to eco-health of the Region as the anti-pollution measures by the industrial plants.

This paradoxical situation has arisen on account of a number of factors which include planning policies and programs directed towards this Region both by the Center and by the constituent States. Firstly, the national objective has been mainly to exploit the coal resource available in the Region, without adequate consideration in regard to the manner in which the region could benefit from such exploitation. Large investments have been made in power and other industrial projects and their townships. These have been confined only to the areas which directly benefit the project, and the project does not recognise any obligation to the surrounding area and in fact are isolated from it physically, socially and economically. The problems of displaced people and disrupted economy of the concerned areas have been left to the states to resolve as best as they could, which has been very little achieved.

Therefore, in developing this Region, it will be necessary to keep in view not only the national objective of maximising production in those key sectors which serve the nation but also of increasing the benefits which such activities will confer on the Region's population itself and taking up such measures, both corrective promotional, as would help in developing those areas of activities, those aspects of infrastructure and those sectors of the regional economy which will spread the benefits of activities which have gone on so far, more uniformly, over the whole Region and build up the Region's economy within a total framework and also to mitigate the regional environmental degradation that are the unavoidable consequences of resource use. This would be the main objective of the overall strategy for development of the Singrauli Region.

7.1 A Balanced Industrial Environmental Option

The industrial climate for further agglomeration of coal-based power plant is more congenial in the Region than it would be in other virgin areas. The land involved in such plants is not rich like Gangetic plain. This would be a great advantage from the viewpoint of conservation of prime agricultural land as it generally happens that urban-industrial growth gobbles up peripheral farm land. The infrastructure for expansion of power generation capacity is available in the Region. Expansion of power capacity in the existing plants or setting up of additional plants would require additional coal to be produced from the Singrauli coalfield. In fact, the coalfield is linked to an integrated thermal power program. Increase in coal production by opening of more mines and producing more coal from the existing mines will help to create additional generating capacity, it will help build up industrial capacity in other centers and increased employment opportunities for skilled workers in specialised jobs. It will be possible to see development as a gradually expanding spread effect in the Region and then extending to the two States, their neighbouring States and, finally, the country as a whole.

Owing to the environmental parameters generally involved in modern industrial growth but more so because of the concentration of industries like thermal power plants, open cast mining, besides other industries, which are prone to cause more serious environmental damage, an important objective is the industry environment balance. This option as discussed in Phase - I

of the Study, should be further examined and studied in detail in relation to the environmental policy of the Government of India and the approach to the development of the Region in Phase - II of the Study.

8. SCOPE OF THE PROPOSED PHASE - II STUDY

The objectives of the Phase - II Study are to prepare a development strategy for the Singrauli Region on an environmentally sustainable basis, to recommend strengthening administrative and financing arrangements for the Region and for the on-going implementation, monitoring and review of the strategy, to identify and reconcile different development priorities through an open planning process that encourages the active participation of all parties (having stake and interest) in the Region's development.

The study is designed to produce three inter-related outputs. Firstly, a regional development and environmental strategy report, which will focus on economic development, environmental management and pollution abatement measures, land use planning and infrastructure and service requirements. Recommendations will include an indicative capital development program. Secondly, a report on strengthening regional administration, which will contain recommendations on strengthening local institutions and on developing coordination and administrative arrangements for the implementation, monitoring and review of the strategy. It will also consider the provision, operation and maintenance of infrastructure and services in the Region and appropriate means of financing these facilities. Thirdly, the project identification report for higher priority investments, which will contain sufficiently detailed information on high priority investments to bring them to project concept stage. The objective of this work is to speed up implementation of the strategy. In addition to these the report on agency specific Action Plans will briefly list each main agency's responsibilities under the strategy over the next two years. The aim is to facilitate implementation and monitoring of the strategy and associated infrastructure investments.

In developing the strategy, an open process is to be used which stresses both formal and informal sector consultation groups with an interest in the Region. Informal consultation with the different interest groups are to be encouraged to assist the study team in understanding the issues and to provide feed back on study progress.

In one of the three study outputs, namely, regional development and environmental study, referred to above, it was suggested that this study output will include an indicative capital development program. While investments in the Phase - I Study would largely be targeted at the non - project population living in non-authorised colonies and nearby villages, those in capital development programs, such as the regional transport system, agriculture and afforestation and energy development, are visualised in Phase - II Study.

Having determined the development strategy for the Region, the pace of regional development would be set by the development programs of the major employers and the public sector investments in the Region. There is also the need for an improved pattern of urban rural interaction, so that urban and rural settlements develop in a mutually beneficial manner and that urban development exercises a positive influence on the socio-economic

processes in the rural areas through a system of interactions and interdependence. Then there is the problem of large scale deforestation in the Region, resulting also from the fuel needs of the people. As to the quality of life in the Region, EDF and CDF findings on the environmental impact of the development in the Region, their implementation and monitoring would also be a part of Phase - II Study. These are discussed in greater detail as under:

8.1 Development Plans of Major Employers

Phase - II of the study will document as accurately as possible the future Development Plans of existing and potential major employers (basic industries). This will serve as indicator of future growth rate of the Region. Particularly critical to determine, will be the scale and timing of major investments (and associated employee levels) in power plants, industries, mines and major service employers such as colleges and hospitals. Upper and lower bound estimates for these developments will, be attempted along with estimates of the total population that would be attracted to the Region as a result of these developments. Until smaller scale service industries are attracted to the Region, the Development Plans of comparatively few employers are likely to be the major determinant of regional population and economic growth. This information could be useful to determine what level and pace of the regional population and economic growth is likely, and from that to assess what pace and scale of development is desirable from environmental, human development, public investment, and regional economic perspectives.

8.2 Public Sector Investments

Beyond documenting development proposals of the major public and private sector employers, Phase - II effort will obtain the actual expenditure of public, sector entities (National and State agencies, and Development Authorities) for each of the last five years and estimates of likely investments over the coming 3 to 5 years for these same entities. This information will be useful for relating the current level of public sector expenditure in the Region to investment and revenue generating proposals that will be developed in Phase - II

8.3 Rural and Urban Settlements

Urban and rural settlements primarily serve as the organisational framework for providing economic and social services for the people at different levels. Economic services such as markets, financial institutions, professional services, etc., provided by the settlements are part of the required infrastructure for the various economic activities to be developed in any area. Social services needed by the people may vary from community to community according to the level of social development, existing institutional structure and the occupational pattern. In all cases, however, certain basic amenities and services essentially needed for human living such as safe water supply, sanitation, housing, health and educational facilities, are necessary.

One of the important objectives of the Regional Plan, therefore, is to evolve an improved pattern of urban and rural development in the Region with a view to providing the basic economic services and community facilities required for the development of the Region.

The small and dispersed settlement pattern of the Region is likely to undergo a substantial transformation in the coming decade due to the population growth and impact of urban-industrial development in the Region. The settlements in the Region should be development in a system for the optimum channelisation of the development throughout the Region to assist the development of agricultural, industrial and tertiary sectors activities by providing appropriate socio-economic infrastructure at nodal points of various orders. In order to evolve an efficient and functional settlement system in the Region a detailed study of the settlements, including those villages which were affected by land acquisition in regard to their present population, present functions, potentiality, location and nodality is felt necessary. Such study is proposed to be taken during the Phase - II of the study.

8.4 Afforestation and Firewood

The forests in the Region have been affected by the mining and other industrial activities. During the decade 1971-81 the forest cover was reduced from 50 per cent of the total area to 35 per cent and has further declined as a result of extensive mining, industrial and urban activities. The natural forest is in retreat on almost every front. It is obviously in retreat all along the Rihand Lake, especially in the industrial area.

The most heavily forested areas in the Region at present are to the north of the Renukoot - Anpara road, on the Singrauli plateau, on the eastern bank of the Rihand Lake between Renukoot and Bijpur.

Besides the sizeable revenue earned by the government through the concessions granted for the cutting of wood or products such as bamboo or by the sale of *tendu* leaves, extracting of resins, the forest is also used by the inhabitants of the Region, particularly the local peasants, for fuel, building materials and foodstuffs.

Almost the entire population of rural areas and majority of the urban people living in rehabilitation colonies and shanty towns heat their homes and cook on wood. The effects of this kind of pressure on the forests can clearly be seen between Dibulganj and Moher, where the trees are gradually being stripped off their branches, and then die a year or two later. Gathering wood for fuel is not necessarily harmful to the forest, but it is the extent and the manner of gathering which are important. The scarcity of wood obliges people to cut green wood.

About 70 per cent people in the Region use wood for cooking. One might very well ask why wood remains the preferred fuel in the greater part of an area where so much coal is mined and so much electricity is produced. The question becomes even more urgent when conservation of the forest is taken into account. The answers may be that coal is produced by the government, which has a monopoly on its sale, and refuses to sell it to provide individuals in order to prevent the creation of a parallel market. The miners, however, receive coal for fuel, and in any case the local coal is not at all suited to domestic use. Electricity is not distributed to the homes of the vast majority of the population and is one of the most expensive means of heating. Some areas are suffering from an acute shortage of wood, and of fuel in general. This is true of the southern part of the plain of Waidhan, where the womenfolk and children have now to walk longer distances to collect wood for fuel. This growing crisis is to a great extent the consequence

of a fast population growth and in over-exploitation of slow-growing trees, so that the resource base of wood contained in forests is being destroyed.

Over-exploitation of forests for the firewood needs of the rural poor is not the only reason for deforestation. There are other activities like logging, large scale construction projects such as dams, plants, townships, roads, clearance of forests to create new agricultural land, etc., which are also responsible for gradual receding of forests. Rural firewood users are the victims and not so much the cause of destruction.

Bio-fuels supplement the wood fuel needs of the rural people but cow and buffalo dung give out a lot of smoke, causing irritation and harm to eyes and lungs besides these becoming unavailable as valuable fertilisers.

Awareness of fuel wood problem is increasing. So is interest in wood conservation. But in the absence of fuel-wood and other sources of energy the people in the area may find it difficult to manage their cooking, etc. This issue would be included as one of the items of detailed study in the Phase-II Study.

8.5 Building on the findings of the EdF Environmental Study of Singrauli Area

The Environmental Impact Study of Singrauli area, initiated by the National Thermal Power Corporation (NTPC) and being implemented under joint partnership between Electricite de France (EdF) and Charbonages de France (CdF) is now available. The findings of the study will be incorporated in the Phase - II Study.

The principal objective of the study is to identify the environmental impacts of various proposed and existing projects, with emphasis being placed on the combined effects of the power and mining projects. The study zone has been defined as a band of 15 km around the Rihand Reservoir so as to include the main industrial area, as well as most of open-cast mines under operation. The quantitative and qualitative analysis has been undertaken in the primary areas of investigation : land use, water use sediments hydrology, water quality, meteorology, air quality terrestrial and aquatic ecology and noise.

9. CONCLUSIONS

Identification of the different problems faced by critical zones points to the need for a suitable approach to the development of these areas. This, in turn emphasises the urgency of drawing up of the Development Plans where the development of coal mining and power sectors needs to be coordinated with other sectors of development like agriculture, forestry, and industry in the Region so that adequate employment opportunities are made available by other sectors, in case development slows down in one sector. The Plan also needs focus on coordinated development of facilities to be provided by the various public and private agencies operating in the area or dependent on this area.

REFERENCES

Town and Country Planning Organization, (1998) *Singrauli Regional Development Plan*

29 | TRENDS AND PATTERN OF URBANIZATION IN INDIA

Abstract

This paper observes that the existing spatial pattern of urbanization if allowed to continue during 1991-2001, urban growth would get further concentrated in the areas which are presently highly urbanized and may reach a stage where the existing carrying capacity of these areas will not be able to support such high levels of urbanization. At the same time, large areas within the country such as the eastern peninsular region, the north-eastern region, western Rajasthan, northern Bihar and eastern U.P, which are rich in resources and have developmental potentials are economically backward and are under-developed. Therefore, the paper suggests that these are the areas where resources are available for supporting a much higher level of urbanization and merit to be considered for priority development, to deflect the population from already over urbanized areas of the country.

1. INTRODUCTION

Provisional population totals for the census year 1991, show the Indian urbanisation level at about 26 per cent (25.76 % to be exact). The country occupies a rather low position with regard to the urbanisation level in the comity of nations, compared to the very high level of 97 per cent in Belgium and 53 per cent in a low-income economy like Zambia. Over the decade 1981-91, a net addition of about 58 million has been made to the 1981 figure of 159.46 million. As of 1991 census, urban population stood at 217 million. The decadal growth of 36.2 per cent over 1981-91 is lower than that of 1971-81, which was 46.1 per cent. It has declined by as much as 10 per cent. The annual exponential growth rate has declined from 3.83 per cent to 3.09 per cent. Urban Rural Growth Differential (URGD) also declined from 2.05 during 1971-81 to 1.29 during 1981-91. The level of urbanisation though not high, the scale of population makes the situation uncomfortable; for this absolute number of 217 million would require additional massive investment in social and physical infrastructures - like housing, water supply and sewerage, transportation network, medical, and educational facilities, etc., to make urban areas more liveable and efficient. The National Commission on Urbanisation estimated an investment of Rs. 3,000 to Rs. 3,500 crore per year in infrastructure in only selected growth centers and regions to achieve growth momentum.

2. TREND OF URBANISATION

Looking at the demographic facet of the urbanisation process in India, its pace of growth, (in terms of both level and scale) has accelerated over the past ninety years, 1901 to 1991. As a process of population concentration, it has resulted into (i) multiplication of points of concentration in cities and towns; and (ii) increase in the size of individual concentrations, both the processes resulting into a big increase in the urban population. The number of urban settlements has more than doubled over these ninety years, it increased from 1,827 (UAs / towns) in 1901 to 3,768 in 1991. This increase in the number of cities and towns, simultaneously with the increase in their individual size, has resulted into a more than eight-fold growth in their population the urban population increased from 25.08 million in 1901 to 217.2 million in 1991. This is projected by the Registrar General to grow more to about 278 million in 2001 (29.4 % urban component). Another projection (Task Force on Planning of Urban Development, Planning Commission, 1983) has put India's urban population at 315 to 320 million (31 to 32 %) by the year 2001, Thus, the year 1981 may be termed as the birth year of the second urban India.

The national urbanisation level increased from 10.84 per cent in 1901 to 25.76 per cent in 1991. In 2001, the level is expected to rise to a third (about 32 %) of the total population in the country. Urban population growth rates in India over the period 1901 to 1991 show that the country urbanised slowly during the first half of the present century. It has been more rapid since independence (Figure - 1). As it will be seen, the level of urbanisation is not high but its scale is tremendous.

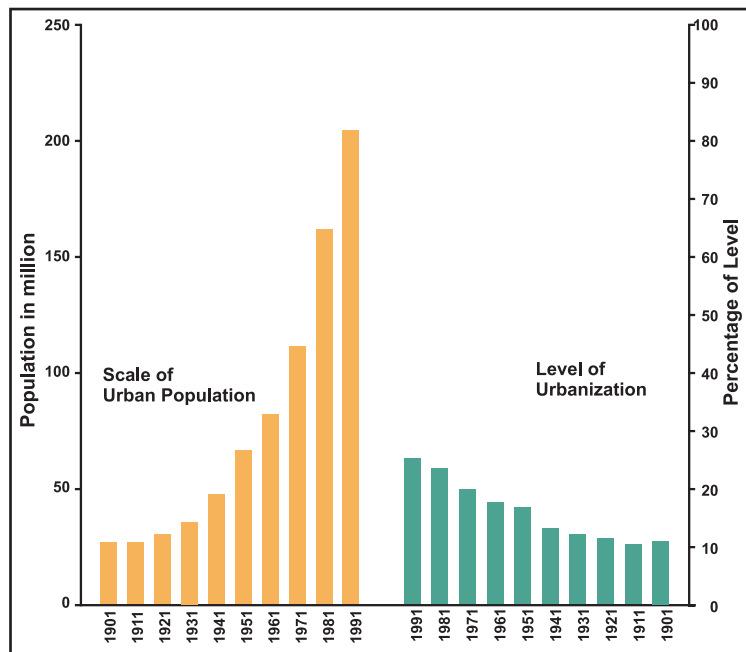
In India, though urbanisation is rapidly growing phenomenon, the number of urban settlements has not increased at the same pace. While total urban population increased

more than eight times (25 million to 217 million) between 1901 to 1991, the number of settlements has just doubled, i.e. from 1,827 in 1901 to 3,768 in 1991. This is despite the fact that the some new centers emerged as industrial townships in pursuance of the Industrial Policy Resolution of 1951 and its subsequent amendments. The inference is that existing centers are growing through both higher intensity at the core and expansion at the periphery therefore, these centers are on the one hand, in conflict with inner - city conservation and, on the other, with transfer of good agricultural land to non-agricultural uses.

The percentage of population in Class - I towns to the total urban population increased from 26 per cent to 65 per cent between 1901 and 1991 while that of Class - II towns remained almost constant around 11 per cent. The percentage share of Class - III towns has also been constant around 13 to 17 per cent. The Class - IV town's share in the total has come down from 20 per cent to 8 per cent. The most affected categories are Class - V and VI towns. The share of the urban population in case of Class - V towns has come down from 20 per cent to 3 per cent and in case of Class VI towns from 6 per cent to less than 1 per cent. Thus, from almost equal distribution of urban population amongst all classes in 1901 with Class - I leading, and Class - VI having the lowest share (6.10%); by 1951, Class - I towns had increased their share to about 45 per cent of the total urban population and Class - VI had declined (3.09%). By 1991, the share of Class - I towns has increased even further to 65 per cent and the share of Class - VI has become almost negligible. Similar is the case with Class - V towns.

Considering the growth of number of towns along with the growth of urban population in different classes of towns, Class - IV towns which contain highest number of towns are experiencing a growing trend in the number of towns. The growth could possibly be explained by the rapid movement of some towns of Class - V which are now experiencing a declining trend coupled with the fast declining percentage share of total urban population which had been very low to

Fig. 1: Level and Scale of Urban Population in India 1901-91

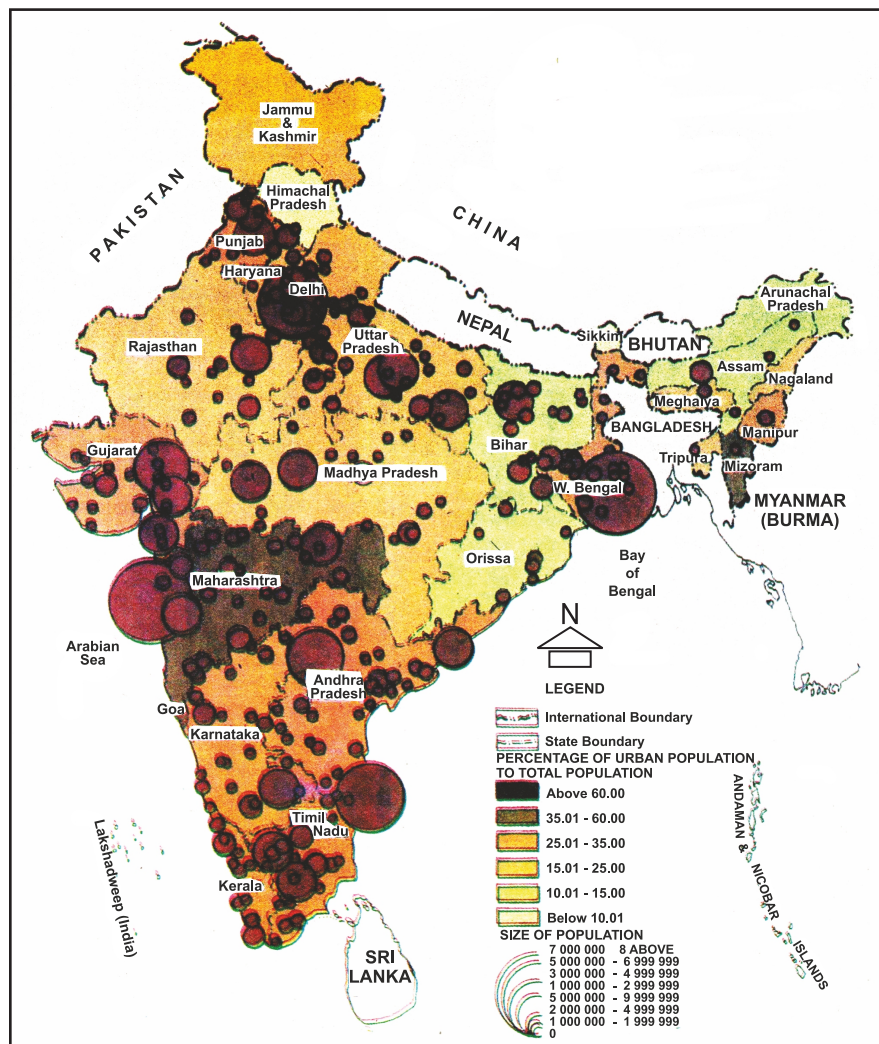


start with. Thus, a situation of a large number of Class - IV and V towns with small population base has a serious implication for employment generation and for sustaining an economic base. The consequent heavy migration which must be taking place can easily be read in the rapid growth of urban population in Class - I and Class - III towns and the increasing number of towns with constant share in urban population is indicative of mere movement of towns from lower categories, but not of very heavy migration. The Class - VI towns, on the other hand, face a dismal picture of a falling number of towns and a falling share in the urban population i.e. a situation of stagnancy.

3. PATTERN OF URBANISATION

A striking feature of the urbanisation process in the country is the considerable inter-regional and intra - regional variation in the growth of urban population as well as in the levels of urbanisation along with the uneven growth of population in towns and cities of different sizes (Fig. 2). The 23 metropolitan cities, in 1991, account for 32.5 per cent of the urban population and a mere 300

Fig. 2: Urban Growth of Population of Towns Different Sizes



cities, out of 3,768 urban settlements, account for 65 per cent of the total urban population in the country. The 300 Class - I cities have registered an increase in their share of population from 60 per cent in 1981 to 65 per cent in 1991. The remaining 35 per cent of urban population is shared by 3,468 towns / UAs belonging to lower classes.

There are also marked inter-state variations in the levels of rates of urbanisation. On top is the State of Mizoram with an urbanisation level at 46.20 per cent, followed by 41.02 per cent in Goa, 38.73 per cent in Maharashtra, 34.40 per cent in Gujarat, 34.20 per cent in Tamil Nadu, 30.90 per cent in Karnataka, 28.72 per cent in Punjab, 27.69 per cent in Manipur

and 27.39 per cent in West Bengal. In Orissa it is 13.43 percent, in Bihar 13.17 per cent, in Arunachal Pradesh 12.1 per cent, in Assam 11.08 per cent, in Sikkim 9.12 per cent and lowest in Himachal Pradesh, 8.70 per cent.

At the district level, nine districts did not have any urban population in 1991; in 93 districts, the level ranged between 5 to 10 per cent. At the other end in 16 districts in the country, the level of urbanisation was above 60 per cent. The variation in the urbanisation across the different States and the Union Territories ranges from 90 per cent to about 9 per cent. This can be explained in terms of the regional pattern of growth in general and industrial development in particular.

Table 1: Growth of Metropolitan Cities in India, 1901-1991

Name of the City	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991
1. Calcutta (UA)	1.51	1.75	1.89	2.14	3.62	4.67	5.98	7.42	9.19	10.86
2. Greater Bombay (UA)		1.02	1.25	1.27	1.69	2.97	4.15	5.97	8.23	12.56
3. Delhi (UA)						1.43	2.36	3.65	5.71	8.37
4. Madras (UA)						1.54	1.95	3.17	4.28	5.36
5. Hyderabad (UA)						1.13	1.25	1.80	2.53	4.27
6. Bangalore (UA)							1.20	1.65	2.91	4.11
7. Ahmedabad (UA)							1.21	1.74	2.51	3.27
8. Pune (UA)								1.14	1.68	2.44
9. Kanpur (UA)								1.28	1.69	2.10
10. Lucknow (UA)									1.01	1.66
11. Nagpur (UA)									1.30	1.65
12. Jaipur (UA)									1.00	1.51
13. Surat (UA)										1.51
14. Coimbatore (UA)										1.13
15. Cochin (UA)										1.13
16. Vadodra (UA)										1.11
17. Indore (UA)										1.10
18. Patna (UA)										1.09
19. Madurai (UA)										1.09
20. Bhopal										1.06
21. Visakhapatnam (UA)										1.04
22. Varanasi (UA)										1.01
23. Ludhiana										1.01

- Figures for 1991 are provisional.
- Population is from the year a town attained the status of metropolis.
- The metropolitan area of Greater Bombay, according to 1981 census comprised only the Municipal Corporation of Bombay which for the purpose of land revenue and general administration is regarded as one district. The census of 1991 identified the Greater Bombay as an urban agglomeration and included into it Thane and Kalyanpur Municipal Corporations, Ulhasnagar and Mira Bhayander Municipalities and the special town of New Bombay.

Million plus and Class - I cities have, however, continued to dominate the urban scene, accounting for about 77 per cent in Maharashtra, and 82 per cent in West Bengal, and more than two-thirds of the plan population in Gujarat, Tamil Nadu and Karnataka. If primate cities like Bombay and Calcutta are excluded, the urbanisation components would drop down to nearly 27 per cent in Maharashtra, and a bare 13.50 per cent in West Bengal. In the last four decades, growth of large cities and their share in the urbanisation component has been increasing and this is a phenomenon unlikely to be checked or reversed in the years to come.

The number of metropolitan cities has almost doubled during 1981-91 decade, i.e. from 12 in 1981 to 23 in 1991. The new additions to the metropolitan club are Surat, Coimbatore, Cochin, Vadodra, Indore, Patna, Madurai, Bhopal, Visakhapatnam, Varanasi and Ludhiana. Table - 1 gives the trend of the growth of million plus cities in India. In 1901, there was only one such city, namely, Calcutta urban agglomeration. The number of million plus cities in the country remained at two till 1941. In 1951, their number increased to five, seven in 1961, nine in 1971, 12 in 1981 and 23 in 1991. The million plus cities in 1991, account for roughly one-third of country's urban population (70.66 million) and one-twelfth of country's total population. Calcutta urban agglomeration which occupied the prime position since 1901 has been relegated to the second position in 1991 and Greater Bombay Urban Agglomeration which occupied the second position since 1901 has moved to the prime position in 1991. The Greater Bombay Urban Agglomeration consists of (i) Greater Bombay Municipal Corporation (Population : 9.9 million in 1991), (ii) Kalyan Municipal Corporation (1.01 million), (iii) Thane Municipal Corporation (0.79 million), (iv) Ulhasnagar Municipality (0.36 million), (v) New Bombay ST (0.30 million), and (vi) Mira Bhayandar Municipality (0.17 million). In case we take into account the population of the Greater Bombay Municipal Corporation which was the only unit in the previous censuses, it would have not moved to the prime position in 1991 and continued to occupy the second position among the 23 million plus cities.

The 23 metropolitan cities (Figure 3) are conveniently located in a mosaic of geographical regions in the country so that each region is served by a large city. It is important that detailed geographic and economic analysis of these metropolitan regions be initiated. Recognition should be made of the metropolitan cities with regional, national and international functions, since these cities are not wedded to their regions for their existence and perform national level functions.

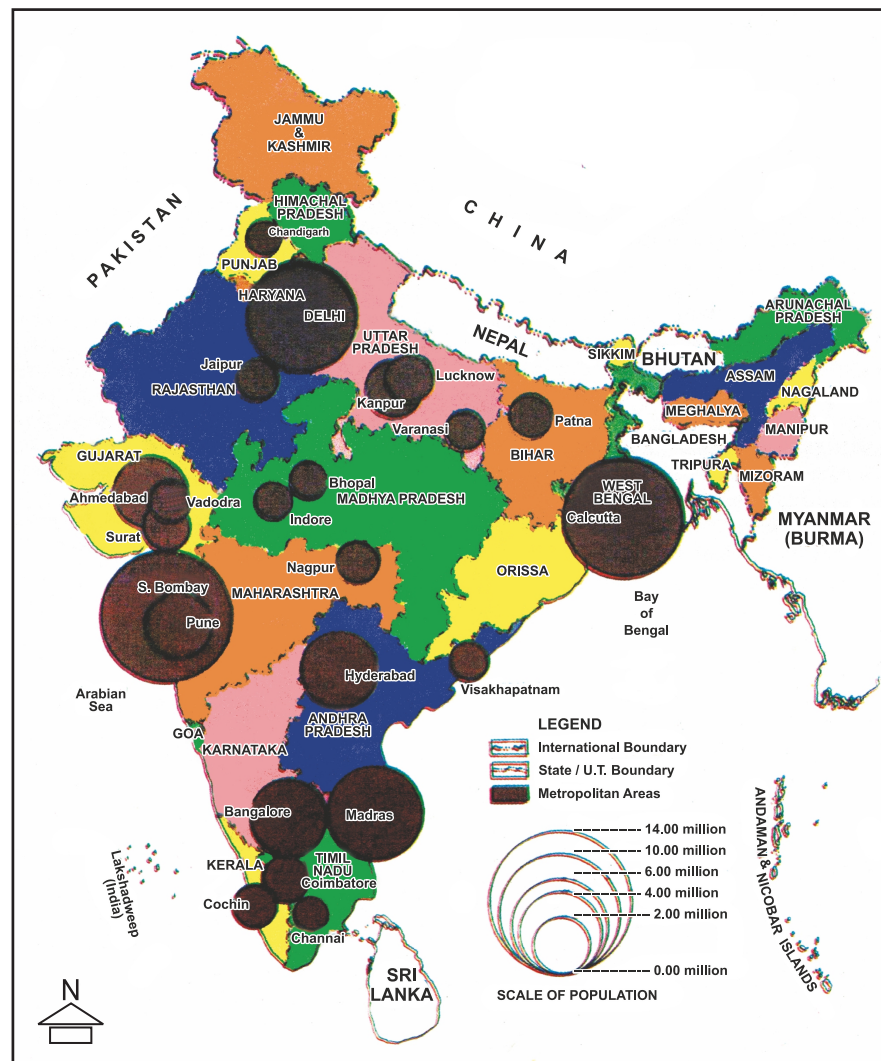
4. THE REGIONAL PATTERN OF URBAN GROWTH

With the changing economic and political status of the country, the settlement pattern also changed significantly to accommodate the growing population, its migration from rural to urban sectors in search of job opportunities and better conditions of living and as a result of industrial development, new transport and communication routes which opened up new areas and the massive efforts for the improvement of agriculture. This has resulted in excessive growth of metropolitan and other cities and large migration of population from poorly developed areas to more prosperous regions. While there is heavy urbanisation in a few tracts of the country such as Calcutta conurbation, Bombay-Ahmedabad belt, Delhi-Punjab and northern Rajasthan belt, coastal Andhra Pradesh and Tamil Nadu, Bangalore-Mysore belt and a few isolated industrial pockets, there are vast areas in the country which are devoid of urban settlements of any size leading to the extremely low levels of urbanisation of 5 to 10 per cent in these regions.

There are areas which have shown an accelerated rate of urbanisation during the last decades but these lack adequate investments in urban infrastructure. The distinct areas of high urban growth as identified by the Task Force on Planning of Urban Development (Planning Commission, 1983) are:

- Areas of rapid urban growth in agriculturally stagnant regions where there is no readily identifiable demand in urban areas except by re-definition of settlements for administrative expansion;
- Areas of rapid urbanization taking place as a result of major public investments in industry in otherwise backward areas; and
- Areas in which rapid urbanization is taking place as a result of rapid agricultural growth.

Fig. 3: Mosaic of 23 Metropolitan Cities



In the first category, there are three regions, namely, northern Bihar, southern Orissa and eastern Uttar Pradesh with levels of urbanisation around or lower than 10 percent. A significant proportion of urban growth in this area is owing to re-classification of numerous villages as towns. In eastern U.P., medium sized towns have all grown rapidly while the larger cities have all been relatively stagnant. In Bihar, there has been a large scale re-organisation of districts so that several towns have now become district headquarters. Much of the rapid rate of urban population growth in this area can, therefore, be attributed to administrative expansion which has made a significant difference to the extremely low base of urban population existing hitherto. Much of the urban population increase, has, therefore, been grown by the re-definition. The stagnation in agricultural productivity in the whole eastern region is the main cause of the increasing inequality. This stagnation over a long period of time has inhibited growing demand for goods

and services usually articulated through a network of towns. Lack of existing modes makes it difficult, on the other hand, to provide the infrastructure i.e. social as well as economic which would help to stimulate the rate of agricultural productivity growth.

The regions forming northern Orissa, eastern Madhya Pradesh, southern Bihar, southern Uttar Pradesh, exhibit very high urban population growth along with low rural population growth. They are characterised by heavy industrial investments in large public sector enterprises that is Ranchi, Dhanbad, Bokaro in southern Bihar, Durg-Bhillai and Raipur in eastern Madhya Pradesh, Rourkela, Sambalpur and the new capital city of Bhubaneshwar in Orissa; south - east Rajasthan has Kota and southern U.P. has Jhansi. Like northern Bihar and eastern U.P., these regions have also had low agricultural productivity growth, and consequently these large industrial investments have induced high rates of migration from rural areas as evidenced by the extremely low rates of rural population growth.

Western U.P., eastern Haryana, coastal Karnataka and inland eastern Madhya Pradesh have had relatively low rural population growth despite very high gains in agricultural productivity. Here urban growth is taking place because of gains in income leading to demands for agriculture-related urban services. These regions are well served by an existing network of small and medium towns which are growing quite rapidly in the wake of the green revolution. Haryana has had a shorter record of rural prosperity and also had a low initial level of urbanisation. Consequently, a large number of small towns have appeared in Haryana over the last decade.

5. CONCLUSIONS

The existing spatial pattern of urbanisation if allowed to continue during the 1991-2001, urban growth would get further concentrated in the areas which are presently highly urbanised and may reach a stage where the existing carrying capacity of those areas will not be able to support such high levels of urbanisation. At the same time, large areas within the country such as the eastern peninsular region, the north-eastern region, western Rajasthan, northern Bihar and eastern U.P, which are rich in resources and have a development potential and which badly need an urban infrastructural base, remain largely unaffected. These are the areas where resources are available for supporting a much higher level of urbanisation but due to lack of urbanisation, the area is economically backward and undeveloped.

For a directed pattern of urban growth a more deliberate policy of locating industries in the backward regions to create urban employment in these areas and for creating infrastructures for a stable economic base of the towns is required. Further, there is a need for the provision of basic infrastructures in the towns of these regions, like transport and communication, power, parcel of developed land for manufacturing and service activities, financial, administrative and other institutions, warehousing and other wholesale and retailing facilities to create secondary and tertiary employment. It is also necessary to provide a reasonable level of urban amenities like sanitation, sewerage and water supply for a good quality of urban living.

REFERENCES

Government of India (1991), *Census Hand Book* (1991)

30 | SETTLEMENT PLANNING: ISSUES AND IMPERATIVES

Abstract

The experience of last four decades shows that the field of settlement planning has not only expanded in scope but the basic premise have also changed. While the achievements of the existing practice of Master Plan approach cannot be negated, but in the process certain issues have come to the fore which if examined carefully could help in re-defining the spatial planning imperatives. The paper further states that by and large, approach followed for town planning is directed towards tackling the problem of a city rather than over viewing the gamut of total urban development perspective and policy at national and state level. Actual planning actions have been confined within the artificial boundaries of urban settlements which remained largely a localized and sporadic affair, without specifying the role of city / town in the regional context. In fact Plan for the concerned cities have been prepared first and later on city-regions are taken up for planning, which needs to be reversed, the paper suggests.

1. INTRODUCTION

Settlement planning in common parlance is taken as synonymous to town planning, which includes both urban and rural planning. Since the beginning of the twentieth century there has been a vast change in the concept and practice of town planning starting from improving of civic services including public health and sanitary conditions to the comprehensive city development plans. It is needless to emphasis that towns, where some sort of Plans are in force have resulted in orderly development and have shown better progress in the implementation of programs than those towns which do not have any kind of Plan. Some critics, however, argue that Master Plan approach generally followed for planning and development of towns and cities has not achieved the desired success in meeting the objectives. The basic reasons attributed to the non-implementation of the Plan, are resource constraints and the various push and pull factors. Hence, it will not be correct to say that there is something seriously wrong with the concept of preparation of Development / Master Plans, it is rather the implementation and enforcement of plan which is lop sided. However, to keep pace with the dynamic growth of towns and cities and to tackle with the complex problems of the urban settlement system the need is to review the existing practice of settlement planning within the overall frame of urban development to evolve more effective approach.

Since beginning, the efforts have been concentrated on the rural development than urban development. In fact, consequences of rural development have direct and indirect bearing on urban areas and vice-versa. Our towns and cities are facing a formidable challenge of growth particularly at the time when there is a critical resources crunch. Hence, it becomes all the more important to evolve a planning and development approach which is both environmentally and financially viable and sustainable. An insight in the emerging urban scenario, settlement pattern and the existing practices of town planning, development and management in the country would help in devising such an approach.

2. URBAN SCENARIO AND SETTLEMENT PATTERN

The latest 1991 Census count revealed that the total population of the country stood at 844 million, of which 217 million accounting for 25.7 percent is classified as urban population.

During 1901-91, the total population of the country increased from 238 million in 1901 to 844 million in 1991 whereas urban population increased from just 25 million to 217 million during the same period thereby registering an eight-fold increase. Similarly, the level of urbanization has also increased considerably from 10 percent in 1901 to 25.7 percent in 1991. As compared to developed countries of Europe and North America the level of urbanization in India may not sound very high but its size of urban population is just gigantic and exceeds the total population of many countries of the world. The scale and rate of urbanization in India has been very fast as compared to industrialized countries. If these trends of urban growth persist it is estimated that by the turn of the century more than 300 million people accounting for about 30-32 percent of the total population of the country would be living in urban areas i.e. almost every third Indian would be residing in towns and cities.

The urban population of 217 million is spread over in 4689 towns and cities. Following the concept of urban agglomeration, in which contiguous settlements and outgrowth are merged with core city and in fact more relevant from planning point of view, the number of urban agglomerations / towns (UAS / towns) are counted at 3768. As compared to eight-fold increase in urban population during 1901-91, the number of urban settlements has just doubled. It increased from 1827 (UAS / towns) in 1901 to 3768 in 1991 indicating that major growth of urban population has been confined to the existing urban settlements particularly larger ones.

Settlement pattern in the country is dominated by metropolitan cities having a population of one million and above. In all, there are 23 metropolitan cities which contain as much as one-third of country's urban population. The number of metropolitan cities has almost doubled during the last decade i.e. from 12 in 1981 to 23 in 1991. There has been a tremendous growth of metropolitan cities since 1901, when Calcutta came into being the first metropolitan city in the country followed by Bombay in 1911. The number increased to 5 in 1951 when Madras, Delhi and Hyderabad also jumped in to the million plus status. Bangalore and Ahmedabad joined the row of metropolitan cities in 1961, Kanpur and Pune in 1971 while Nagpur, Jaipur and Lucknow crossed the million mark in 1981. Surat, Coimbatore, Cochin, Vadodra, Indore, Patna, Madurai, Bhopal, Vishakhapatnam, Varanasi and Ludhiana are the eleven new additions which joined the metropolitan club in 1991. It is striking to note that number of metropolitan cities increased 4.6 times i.e. from 5 in 1951 to 23 in 1991 while their population increased by 13.5 times i.e. from 5.26 million to 70.6 million during the same period. If these trends continue the metropolitan growth may proceed at a progressively higher rate and it is expected that the number of metropolitan cities may go around 40 by 2001.

In India settlement pattern contains six categories classes (Table - I) which reveals that out of 3696 UAS / towns (excluding J and K) Class - I towns numbering 300 only account for as much as 65 per cent of urban population. Number of towns in class-II and class - III categories are 345 and 947 but the share of urban population contained by these towns is almost in the same range i.e. 11 and 13 percent receptively. Class - IV has the highest number of settlements 1167, but proportion of urban population contained by them is not

Table 1: Settlement Pattern Classwise (1990 - 1991) in India

Census Year	All classes	Class-I (one lakh and above)	Class-II (50,000-99,000 Pop.)	Class-III (20,000-49,999 Pop.)	Class-IV (10,000-19,999 Pop.)	Class-V (5,000-9,999 Pop.)	Class-VI (Below 5000 Pop.)
1	2	3	4	5	6	7	8
1901	1811 (100.00)	24 (26.00)	43 (11.29)	130 (15.64)	391 (20.83)	744 (20.14)	479 (6.10)
1911	1754 (100.00)	23 (27.48)	40 (10.51)	135 (16.40)	364 (19.73)	707 (19.31)	485 (6.57)
1921	1894 (100.00)	29 (29.70)	45 (10.39)	145 (15.92)	370 (18.29)	734 (18.67)	571 (7.03)
1931	2017 (100.00)	35 (31.20)	56 (11.65)	183 (16.80)	434 (18.00)	800 (17.14)	509 (5.21)
1941	2190 (100.00)	49 (38.23)	74 (11.42)	242 (16.35)	498 (15.78)	920 (15.08)	407 (3.14)
1951	2795 (100.00)	76 (44.63)	91 (9.96)	327 (15.72)	608 (13.63)	1124 (12.97)	569 (3.09)
1961	2270 (100.00)	102 (51.42)	129 (11.23)	437 (16.94)	719 (12.77)	711 (06.87)	172 (0.77)
1971	2476 (100.00)	148 (57.24)	173 (10.92)	558 (16.01)	827 (10.94)	623 (04.45)	147 (0.44)
1981	3245 (100.00)	216 (60.42)	270 (11.63)	738 (14.33)	1053 (09.54)	739 (03.58)	229 (0.50)
1991	3696 (100.00)	300 (64.89)	345 (10.96)	947 (13.33)	1167 (07.89)	740 (02.62)	197 (0.31)

- Figures relating to 1991 Census are excluding J and K State;
- Figures relating to all other census years exclude both Assam and Jammu and Kashmir;
- Figures in parenthesis show the percentage distribution of urban population in different classes of towns.

very significant which is just 8 per cent. The number of lower order of settlements 740 in Class - V and 197 in Class - VI, is quite substantial but they have meagre proportion of urban population i.e. 2.62 and 0.31 per cent. Since 1901, number of towns have gone up in the first four classes while in Class - V and VI it has gone down. The increase in number of towns in Class - I category has, however, been significant during 1901- 1991 when it increased from 24 to 300. Their share of urban population has also remained the highest in each census. Table - 1 gives number of urban agglomerations / towns by size class and percentage distribution of urban population in each Class in India during of 1901-1991. In 1901, Class-I towns accounted for 26 % of the urban population which has steadily been increasing and at the time of 1991 census their share has increased to 65 %. In Class-II towns the share of urban population remained almost constant around 11 percent while that of Class-III towns it has been around 13 to 17 per cent.

Considering the increase in number of towns along with the growth of urban population in different classes of towns it is apparent that pattern of urban settlements is dominated by Class-I

towns, including metropolitan cities. The largest share of urban population concentrated in these few settlements accompanied by excessive growth is a clear indication for the likely form and structure of settlement pattern in the foreseeable future and need to be taken seriously while evolving an approach for planning and development.

3. CHANGING PARADIGM OF PLANNING

Although, as per history, the knowledge and practice of town planning dates back to Indus Valley Civilization the town planning as a conscious and accepted government responsibility and as a specific professional discipline is of relatively recent age. In the late nineteenth and early twentieth centuries, scope of town planning was confined to the provision of civic amenities like improvement of health and sanitary conditions as part of municipal functions. Later on, only in some of the major towns, Improvement Trusts were created which dealt with town improvement schemes like housing, water supply, drainage, amenities and services etc., in certain pockets of towns. The post-partition period is the dividing line which distinctly marked the change in perspective and dimensions of town planning. Townships for refugees were developed and general re-construction and housing programs were also taken up which resulted in many fold increase in the problems of town planning.

It was the Third Five Year Plan which generated a momentum in town planning activities when urbanisation was recognised as an important aspect of the process of economic and social development and the central government made a provision for 100 per cent financial assistance for preparation of Master Plans for almost all the major cities and their surrounding areas. Actions were taken for enacting town planning legislation, setting up of Town Planning Departments in the states and union territories and augmentation of facilities in education and training in the field of town and country planning. Multi-disciplinary approach in various urban and regional planning exercises was apparently visible. In the succeeding Five Year Plans emphasis has been mainly on regional approach to pattern of urban development, integrated urban development for the improvement of infrastructural services, first in large urban centers during the Fifth Plan and subsequently in small and medium towns. Preparation of master plans, formulation of town planning schemes and undertaking other statutory functions along with central sponsored schemes have been the main activities under the canvass of settlement planning.

The practice of settlement planning in India has been in the form of Master Plan approach based on the models followed in U.K. First Master Plan for Delhi prepared by Town and Country Planning Organisation in 1961-62 is being regarded as the guide for preparation of Master Plans in the country. The concepts, measures, methodology and techniques known as Delhi Imperatives have been widely used while preparing Master Plans / Development Plans for various other towns and cities in the country. On the basis of information available for 15 states in TCPO it may be extrapolated that so far Master Plan / Development Plans for about 1100 towns / cities have been prepared under State Town Planning Acts / Improvement Acts or other relevant Acts. It is estimated that Plans for similar number of towns are in the process of preparation and in the draft stage. Some of the States also have non-statutory Plans mainly

for guidance and policy purpose as they could not be approved due to lack of appropriate legislative framework. In general, Master Plans prepared so far set the basic policies for the development of the respective city, general relation between the various land uses viz. residential, commercial, industrial, and a framework of the city structure including transport net work for a specific time period of 20-25 years. From time to time the basic policies of the Plans are further detailed out in the zonal plans specifying zoning for land uses and location of facilities and services. Zoning regulations are being used as instruments for development control along with building bye-laws, density and F.A.R. restrictions. However, zoning is not a substitute nor an alternative for the Master Plan rather it helps in achieving the goals set fourth in the Master Plan. Along with Master Plans and Zoning Plans, Town Planning Schemes and Town Improvement Schemes are also undertaken for selected parts of the city requiring development inputs.

The process of Plan implementation generally follows the examples of implementation of Master Plan for Delhi under the auspices of the Delhi Development Authority (1962) and the Calcutta Basic Development Plan drawn up by the Calcutta Metropolitan Planning Organisation in 1966 and taken up for implementation by the Calcutta Metropolitan Development Authority set up under an Act in 1970. Central schemes for Integrated Urban Development for Implementation of urban projects have also helped in implementation of city Development Plans. Most of the Plans prepared by the State Town Planning Departments could not be implemented fully except in those areas where planning and development authorities with adequate powers for planning, coordination, implantation, funding and supervising the programs of land development and disposal are created under the provision of the Act. Where there are no Development Authorities local bodies are making efforts to implement the Plans in a piece-meal fashion as they have their own problems. In a recent exercise conducted by Town and Country Planning Organisation it is observed that in many States local bodies are facing problems for implementation of Plans mainly because of weak financial position, lack of technical know-how, procedural and administrative delays In acquisition of land, lack of proper coordination among various agencies involved in implementation of Plan beside inadequate institutional support.

Emphasis of Plan implementation differs from city to city depending on needs and specific problems. For instance, Delhi Plan gave importance to land acquisition and development as well as housing with corresponding inputs in public utilities and transportation, while Calcutta Plan laid more emphasis on water supply, sewerage, drainage and transport than on land development and housing. Clacutta programs are mainly expenditure oriented while Delhi programs helped in generating fresh resources. On the pattern of Delhi and Calcutta, special Boards and Authorities for a number of cities and towns have been set up to undertake capital work for improvement, development and expansion of urban areas with specific legislative support such as Housing Boards, Water Supply and Sewerage Boards, Slum Clearance Agencies, etc. For the large mega cities like Delhi, Calcutta and Bombay, regional development authorities having jurisdiction on a wider area have also been created. As such, different agencies are responsible for the implementation of the Plan under different legislation.

The recent trends show that the private sector has also started involving in investment and maintenance of urban infrastructure particularly in the provision of housing and social and cultural services. Private sector is providing in a big way the hospitals / schools as well as housing catering mainly to the needs of upper income groups. By and large pattern of budgeting by the city Development Authorities or City Improvement Trusts is an annual exercise based on loans and funds available from the government or the resources generated by the respective agencies.

Thus, it is seen that Master Plan approach has been adopted as an instrument for settlement planning and development in the country and as a result of which the planned development in some of the towns and cities is noticeable. However, built environment and general conditions of some of the towns, and cities having Master Plans have not improved as expected as on the face of it appears that some thing has gone wrong with the woof and warp of the concept and system of Planning, but it is non-implementation of proposals of Master Plans appears to be the major cause, however, it would be better to ponder over on such issues.

4. EMERGING ISSUES

Experience during the last four decades shows that the field of settlement planning has not only expanded in scope but the basic premise have also changed. While the achievements of the existing practice of Master Plan approach cannot be negated, but in the process certain issues have come to the fore which if examined carefully could help in re-defining the spatial planning imperatives. By and large, approach followed for town planning is directed towards tackling the problem of a city rather than over viewing the gamut of total urban development perspective and policy at national and state level. Actual planning actions have been confined within the artificial boundaries of urban settlements which remained largely a localised and sporadic affair, without specifying the role of city / town in the regional context. Plan for the concerned cities have been prepared first and later on city-regions are taken up for planning following the examples of Delhi, Bombay, etc.

According, to some critics the Master Plan approach is rigid and orthodox in nature have proved to be a poor vehicle for regulating the process of urban growth, as it has often failed to visualise properly the dynamic nature of human settlements. Master Plans, basically focused on the end results rather than the process of achieving it. It laid greater stress on regulatory and restrictive measures rather than development oriented instruments for implementation with less provision for feedback and adjustment during the period of the Plan.

Plan preparation has been more or less the sole responsibility of State Town Planning Department and interaction with other government agencies and affected groups in determining objectives, needs, constraints and priorities have not been very extensive. Integration of such Plans with other concerned agencies and departments sectoral schemes / projects and programs as well as the budgeting process has also found to be weak. Present understanding of the city development process and its development imperatives mainly relate to the single criteria i.e. land allocation on the basis of certain size of population.

Norms and space standards used for guiding the development covering housing,, education, recreation, shopping, etc., are not based on empirical study of the local conditions prevalent in the concerned area or region. It is noted that most of the standards applied in the Master Plans whether it is density of population or provision of amenities and services are of higher order and generally represent utopian view. Lately, attempts have been made to orient the planning parameters according to the requirements of the financial institutions and space standards particularly for housing are based on income classification which also have not been proved very successful because of lack of reliable data. Though the efforts are generally made for catering to the needs of the plans in general show a bias towards the relatively prosperous section of the society with little focus on the needs of the urban poor or informal sector. Under the provision of the concerned acts, Plans have been prepared for a designated planning area including core city and peripheral areas but in reality urban planning became pre-occupied with a new urban order and to a large extent it neglected the problems of existing city. It is generally felt that majority of the Plans have not given well conceived program of actions for different areas in the town in a phased manner. Besides, no provision generally exists in the Master Plan for periodic review of various developmental activities to cope-up with the changing needs of the towns and cities. However, it is not correct to expect that the Master Plan is a magic wand and panacea for all the urban development problems, as it is basically a tool for the orderly development of the towns / cities.

The Plans are prepared with some conception and specific objectives by the concerned Town Planning Departments, and their implementation is invariably left to the Development Authorities / local bodies which are not deeply involved in the process and lack the real understanding of the assumptions of the Plan which results in haphazard implementation of Master Plan proposals. In this process involvement and participation of the people also get neglected due to which the plan normally fail to create the meaningful impact on the quality of life of the majority of the people. In nutshell, the land use and urban design pattern together with unrealistic planning norms and standards creates an urban pattern which becomes expensive to build and even more expensive to maintain.

5. PLANNING IMPERATIVES

Considering the emerging settlement pattern and need for the urban planning to play a positive role in the overall development of the country, the approach for settlement planning must make a shift from its emphasis on rigid land use planning and development control to take a wider view of the dynamic process of city development. Instead of having a Master Plan for the city with fixed land use frame for a specific projected population in a particular time horizon of 20-25 years, the planning approach should be flexible one, to accommodate Incremental and progressive changes with the basic premise that each unit and sub-unit of the city system would be compact and complete. Such functional unit and sub-unit may be termed as generic grid and Plan for the entire city could be like a structure Plan. Such structure Plan should give broad outline of the form and structure of the city together with major transport network and location of important activities having a bearing on the built environment of the town. Detailed Action Plans for units and sub-units may be worked out after the finalisation of the structure

Plan as and when need arise incorporating the changing situation within the broad framework of the Structure Plan.

In view of the fact that majority of the urban population is living and working in the informal sector, the Plan should make adequate provision for maximising the employment opportunities for this vital sector by earmarking sufficient land for commercial, industrial and allied functions. Along with physical and infrastructural development the Plan should make equal efforts for the socio-economic development of the town as well, so that suggested physical development could take place in harmonious and sustainable manner. Urban poor being the main target group, the Plan objective should be oriented in such a way that this group could avail of the desirable benefits from the Plan viz. modest housing and other basic facilities and utilities.

Structure of the city should help in reducing the movement of a common man to the minimum by proper planning of land use. The location of related and compatible functions in each unit / sub-unit should be planned in such a manner that it minimises the movement of the people. Multi-functions and mixed land uses should be permitted provided such uses are compatible. Work place and residential areas should be located in a walking distance thereby reducing the unnecessary movements of pedestrians and vehicles.

In view of the resource crunch, approach to town planning should treat the urban sector as a partner in urban development and not always craving for extra funds from the public exchequer as the overall budgetary provision for urban development since third Plan onwards never exceeded 2 % of total allocations.'

If the Master Plan approach is to continue it needs to be made more practical and pragmatic. All the proposals of development should be detailed out in a phased manner both spatially and temporally with a provision for periodic revision of development proposals. In order to implement the Plan proposals smoothly, efforts should be made to make them capable of generating resources on its own by taking remunerative schemes first, and ploughing back their returns in providing physical and social infrastructure as well as schemes for the urban poor, so that all the developmental activities are self sustaining and not depend totally on budgetary support. Areas for the involvement of private sector and institutional financing should also be clearly identified.

The standards for urban infrastructure and community facilities should be closely related to resource availability and socio-economic needs. Standards should not be too rigid rather they should respond to the evolving needs of the city's population and should also ensure minimum habitable environment for majority of the inhabitants.

6. CONCLUSIONS

In view of the changing dimensions of planning and increasing scope of development particularly in respect of environmental and socio-economic parameters of development the existing legislative support may not be adequate to deal with the problem effectively. Hence, it would

be advisable to modify the existing legislative framework to make it broad based. The zoning regulations and building bye-laws are the main instruments of development control. These are generally taken as restrictions to development and not as promoters of development. Zoning Regulations and Building Bye-laws are, therefore, required to be modified to make them flexible.

Since last two decades considerable awareness has been generated about the environmental protection and improvement, however in planning, efforts needs to focus on the environmental conditions of town and cities and assessing the environmental impact of various activities. The phenomenal growth of our cities have severely affected urban environment viz physical, social, economic and aesthetic, in majority of the towns and cities. As such, environmental improvement program should be taken as an integral part of the total Development Plan and all the elements having bearing on built and natural environment and the conservation should be identified clearly in the Plan along with the action programs.

In the overall Planning of town development, the urban transport has not received the due attention even though it is very crucial for the efficient functioning of urban system. Despite tremendous growth of vehicles in towns and cities area under roads has not increased proportionately and it is observed that in many large cities the area under roads is around 10 percent as against the normal standard of 20-25 percent. In total urban system, transport network serves as the base for many other sub-systems such as services and utilities, work centers, etc. While planning special efforts should be made so that an efficient transportation system could be worked out at least for the larger cities to start with.

To conclude it may be mentioned that urban planning should not be taken as an isolated activity but it should be treated as an integral part of the total urban system so that it could play a positive role in the overall development of towns / cities and the surrounding region.

REFERENCES

- United Nations Center for Human Settlements (1987), *Institutionalising Environmental Planning and Management for Settlement Development*. Environmental Guidelines For Settlement Planning and Management - Vol-I.
- Census of India (1991), Series-I India - Paper 72 of 1991, *Provisional Population Totals : Rural Urban Distribution*.
- Town and Country Planning Organisation, Government of India (1987) *Newsletter*, Vol-2, Nos.2 and 3, April-Sept. 1987.
- National Institute of Urban Affairs (1981), *The Study of Master Plan of Towns and Cities in India*.
- Report of the National Commission on Urbanisation - 1988, Vol. - II.

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TOWN PLANNING SCHEME AS A TOOL FOR PLAN IMPLEMENTATION AND PUBLIC PARTICIPATION: LEGISLATIVE FRAMEWORK

Abstract

By undertaking the comparative study of the legislative provisions of the Gujarat and Maharashtra Acts the paper observe that while in the Maharashtra, the Town Planning Scheme (TPS) does not become operative until all the appeals on the Arbitrator's valuation decisions are heard and decided by the Tribunal of Appeal. While as per Gujarat Act, the operative part of the scheme which consists of the layout and re-constitution of plots can be separately finalized by the Arbitrator as a preliminary scheme and can separately be sanctioned by government. The advantage is that as soon as the preliminary scheme is sanctioned, the execution of work can be started. The decisions on valuation matters and litigation appeals are separately dealt with, which is a better procedure for speedy implementation of the Town Planning Scheme. The paper further suggests that in order to make the TP Scheme as a self-financing instrument, it is necessary that excessive delays encountered in processing and implementation and other administrative bottlenecks should be minimized. Besides the system of land titling and registration records also needs to be improved which pose major constraints in successful implementation of TP Scheme.

1. INTRODUCTION

Of late, there has been an increasing interest and attention focussed on Town Planning Schemes (TPS) as a tool for undertaking and financing land development without taking recourse to compulsory land acquisition and involving the land owners in the process of area development. The cost of urban land acquisition is increasingly becoming prohibitive and it is very time-consuming, leading to unending litigation and high speculation in the land market. It has not been possible to get land expeditiously and at reasonable price to undertake urban development programs. The TPS approach is an alternative model for urban land development provided for in most of the State Town and Country Planning Acts. Although their contents, procedure and results vary. It has been practised in the States of Maharashtra and Gujarat for almost seven decades. The Bombay Town Planning Act, 1915 laid down the initial legal framework for the technique and this Act was replaced by the Bombay Town Planning Act, 1954 which had been subsequently superseded by the Maharashtra Regional and Town Planning Act, 1966 and is now enforced in the State of Maharashtra, although the provisions for preparation and implementation of Town Planning Schemes for achieving orderly physical development have remained a common factor of these Acts, however, 1954 and 1966 Acts have added the provisions of Development Plans and Regional Plans respectively. Under the present Act, the Town Planning Schemes are now used as one of the tools for implementing the proposals contained in the Development Plan.

2. TOWN PLANNING SCHEMES

2.1 Maharashtra Experience

The TPS is an area planning technique patterned on the concept of land re-adjustment. This alternative development vehicle has been used most extensively in the State of Gujarat and Maharashtra. In Gujarat, it is covered under the Gujarat Town Planning and Urban Development Act, 1976. Since Maharashtra State is pioneer in the field of TPS, it would be useful to discuss

the relevant provisions of the State Act. As per the provisions of the Maharashtra Regional and Town Planning Act 1966, the TPS preparation is divided into two stages; firstly, the draft scheme and the final scheme. The draft scheme is prepared by the Planning Authority and finalisation of the draft scheme is done by the Arbitrator / Assistant Director of Town Planning from Town Planning and Valuation Department.

Under the MRTPA Act, 1966; the Planning Authority publishes the declaration of intention to make the Town Planning Schemes and proceeds to frame draft proposals and discuss with the land holders and the Director of Town Planning. The area is identified and ownership of each plot, layout of roads and services, etc., are determined before the draft scheme is made and published within a period of 12 months from the date of declaration. The suggestions and objections are considered within 30 days of publication of the proposals and are modified before the scheme is submitted to the government for approval within a period of 6 months. The state government approves the scheme after consulting the Director of Town Planning.

After the scheme is approved by the state government the Arbitrators are appointed within one month from the date of approval, and the Arbitrators are required to decide all matters referred to them under the Act and then declare the award within a period of 12 months from his appointment. The values of the original and final plots are determined, cost of the scheme, compensation cost on account of allotment of land for public purposes, etc., are fixed. The decision of the Arbitrator is communicated to the parties. As regards valuation matters, the aggrieved parties may appeal to the Tribunal of Appeal, which decides the appeals within a period of 6 months. The Arbitrator is required to make corrections in the scheme record as per the decision of the Tribunal and the scheme is finally submitted to the state government for sanction, which may sanction it or make such modifications as it may consider necessary. The final scheme is published in the final gazette and the sanctioned scheme comes into effect. After the final scheme becomes operative, the lands required by the Planning Authority vests absolutely in it, free from all encumbrances and the final plots are handed over to the owners to whom they are allotted in the final scheme.

As a result of the Town Planning Schemes envisaged and implemented under the Bombay Town Planning Act, 1954 and the MRTPA Act, 1966, more than 114 schemes in Bombay, Pune, Nasik etc., have been taken up in Maharashtra.

2.2 Gujarat Experience

In the case of Gujarat where the TPS is covered under the Gujarat Town Planning and Urban Development Act, 1976 involves a three stage process, whereby local authorities reconstitute a declared area in order to provide land for community purposes (EWS, housing, roads, schools, open spaces, etc.) and to realign private plots. The entire process of draft, preliminary and final Plans, normally takes between 5 to 10 years to finalise. The local authorities and land owners are very positive regarding this land development model and the discussions with the local authorities and the land owners show that they find it cheaper, simpler and quicker than compulsory acquisition for the public sector to gain access to land. As soon as the preliminary scheme is approved by the state government the local authority takes possession of the allotted land and undertakes basic improvements. The land owners compensation or contribution for improvements / loss of land is determined during the preparation of the final scheme.

The procedures, contents are broadly similar to Maharashtra pattern, although there are excessive delays encountered in scheme processing and implementation.

2.3 Tamil Nadu Experience

In the case of Tamil Nadu, the TPS which has been re-designated as detailed Development Plan under the Town and Country Planning Act, 1971 are prepared in respect of any land within the Planning Area declared under the Act. The resolution to this effect is to be published in the district gazette after which a map is prepared which is called Map No. 2. Some of the contents of detailed Development Plan are:

- Laying out of land as building sites;
- Construction of roads, lanes streets, etc.;
- Acquisition by purchase, exchange or otherwise of any land and other immovable properties within the area;
- Redistribution of boundaries and reconstitution of plots;
- Transport facilities;
- Water supply line;
- Reservation of land for various purposes; and
- Preservation of places of archaeological interest and historic importance, natural scenic beauty and places for religious purposes.

The re-constitution of plots and re-distribution of boundaries is one of the major issues prescribed under the contents. After preparation of the Map Plan, the Local Planning Authority submits the Plan to the Director of Town and Country Planning for his consent for publication. After this, the authority publishes the consent in the District Gazette and State Gazette inviting objections and suggestions from the owners and persons interested in the Plan which was subsequently consolidated and the Plan is revised for its final approval. The Director in turn is empowered to approve the Plan as submitted or with modifications. The detailed Development Plan comes into force from the date of final approval in the official gazette. The State has been, by and large, successful in translating the detailed Development Plans so prepared into reality in a number of cases although there may be some *itches* here and there.

2.4 Experience of the other States

The other State Acts like Orissa, Manipur, Rajasthan, etc., provide for the preparation of improvement / development schemes but they do not provide for plot re-constitution schemes, as implemented in Gujarat and Maharashtra, nor there is an elaborate and efficient procedure for the appointment of valuers and arbitrators and the need for resorting to compulsory land acquisition is not obviated.

In Andhra Pradesh, the Town Planning Schemes are prepared under the Andhra Pradesh Town Planning Act, 1920 and the rules framed thereunder. The Act also provides for the municipalities to take up Town Planning Schemes for certain areas which are under process of rapid development. Elaborate procedure has been laid down for the preparation and approval of Town Planning Schemes. After the scheme is sanctioned, the state government appoints an Arbitrator to define

and demarcate the areas allotted in the scheme and do all such acts as may be required under the Act and pass necessary orders. An appeal against the orders of the Arbitrator lies to the District Judge.

In the case of Delhi, the DDA Act, 1957 provides for preparation and approval of Zonal Plans and a few Zonal Plans have been approved. The revised Master Plan for Delhi, 2001 has re-grouped the remaining areas into several zones and it may be difficult to prepare the Plans for all the areas by this time. The Delhi Act is silent with regard to the preparation and implementation of Town Planning Schemes as envisaged in Maharashtra and Gujarat and in particular the Plot Reconstitution Schemes. In fact, the Zonal Plan is a process in the preparation of Master Plans and could be called Detailed Development Plan or Comprehensive Development Plan. The DDA Act is certainly deficient with regard to the preparation of Town Planning Schemes and it could be useful to build the provisions relating to Town Planning Schemes by making suitable amendments in it. Even the concept of betterment charges envisaged in the Act and also found in most of the Improvement Trust Acts has failed to achieve its objective of generating resources, for the, simple reason that it has not been possible to prove to the satisfaction of the court that a particular improvement is directly attributed to the execution of the scheme. On the other hand, the concept of development charge which is successfully being implemented in several states has been incorporated in the Model Regional and Town Planning and Development Law. On the basis of the provisions contained in the Model law, a number of states have built the provisions relating to development charge in their State Town Planning Acts. Essentially, it is a charge levied on the carrying out of any development or any change of use of land for which permission is required. Its Jurisdiction is derived from the fact that the land values and the use values of any property appreciate in an urban area not only by the efforts of an individual owner of such property but by the cumulative efforts of the entire community as a whole and, therefore, this appreciation in value should rightly be shared with the community as a whole. It is a substantial source of revenue to help the Authority to finance programs of development for augmenting basic services like water supply, drainage, electricity, roads, parks, playgrounds, hospitals, schools, etc. It is a tried method of raising funds for undertaking large-scale development and also mopping up the unearned increment in the value of the urban properties.

3. LESSONS FROM IMPLANTATION OF TPS OF MAHARASHTRA

An analysis of the legislative framework of the various State Town Planning Acts relating to Town Planning Schemes show that Maharashtra Act is in fact the pioneer in this field, which has been followed in Gujarat and other States. It may, therefore, be worth-while to draw on the experience of the Maharashtra State with regard to Town Planning Schemes in which it has been reported that until now about 114 schemes from Bombay, Pune and Nasik have been taken up under the Bombay Town Planning Act and the Maharashtra Regional and Town Planning Act 1966. Although it is an accepted tool for effective implementation of Development Plans, certain shortcomings have been reported for which the major reasons are as follows :

- Most of the Town Planning Schemes have taken 20 to 25 years for finalisation and the delay is on account of elaborate and lengthy procedures prescribed under the Act and the schemes involve very large areas with a number of properties and owners for which lot of time is spent in measurement, demarcation by the Land Records Department;

- The compensation and betterment charges recoverable from the plot owners are reckoned from the date of intention of preparation of Town Planning Schemes which take more than 20 years to complete, thereby leaving the compensation amount to a frivolous figure. The Planning Authorities are not able to complete the work contemplated in the scheme within the expenditure allocated and the TPS does not become a self-financing mechanism in practice;
- Although it is stated that the sites reserved in the scheme vest absolutely free from all encumbrances in the Planning Authority, in practice they do not get possession due to many difficulties; and
- The Land Records Departments do not change the record with regard to ownership of plots until the possession of final plot is handed over to owners, even though they are required to change the ownership record as soon as the scheme comes into force.

4. TOWN PLANNING SCHEMES IN THE MODEL LAW

The Model Law formulated by the central Town and Country Planning Organisation and commended to the states and union territories for adoption with such changes as to suit local requirements of each state has attempted to bring about a synthesis of the provisions related to Town Planning Schemes, particularly in the case of Maharashtra and Gujarat. A separate chapter is devoted to development schemes or Town Planning Schemes, in which the contents, procedure for approval, appeal, etc., have been elaborately provided. Although, it has heavily drawn on the Maharashtra pattern, there is a major departure with regard to matters which may go in appeal. It has dispensed with the formal appointment of Arbitrators / Valuers as provided in Maharashtra Act, and the work has been entrusted to Planning and Development Authority which may appoint suitable persons to assist in this task. Another major departure is that certain matters relating to land like areas allotted for public purposes or decide the persons to whom the reconstituted plot is to be allotted or estimate the value and fix the difference between the value of the existing plots and the reconstituted plots, etc., which are of civil nature and are decided by the Planning and Development Authority lie in appeal to the authority as may be prescribed. The second appeal lies to the District Judge, other matters which are decided by the Planning and Development Authority have to go in appeal to the Tribunal of Appeal for final determination. In the case of Maharashtra, the first set of matters lie in appeal to Tribunal of Appeal and the later are only decided by the Arbitrator whose decision is final and there is no appeal. The Model Law has provided for appeal and limited it to give certain finality to endless litigation.

The following measures for expediting finalisation of Town Planning Schemes and rationalisation of TPS procedures are suggested to overcome the aforesaid difficulties and bottlenecks:

- Publication of declaration of intention in the gazette, collection of ownership record prior to publication of draft schemes should be dispensed with to avoid delays;
- Formal appointment of Arbitrator should be done away with; instead, an ex-officio appointment of a responsible officer of the Department of Town Planning would reduce time element to a great extent. There is no need for separate building regulations for each scheme;
- A permanent Tribunal of Appeal for hearing appeals would obviate the need for separate tribunals in each case of TPS and reduce the time taken in going through the process of appointment; and

- The maximum area and the maximum number of plots to be included in the TPS should be limited so that it could be brought to a stage of completion in the shortest possible time.

With regard to rationalisation of TPS procedure the following aspects need consideration :

- Specific guidelines for Arbitrators / ex-officio Town Planning Officer for reconstitution of plots should be drawn up;
- Confusion arising out of original plots could be avoided, if their measurement is introduced prior to preparation of TPS;
- Arbitrator's / ex-officio Town Planning Officer's award can be split into two parts;
 - restricted to re-constitution of plots and, the other to valuation; and
- The former can be brought into effect as soon as the draft scheme is approved and valuation could be drawn at a larger stage. At present, valuation takes most of the time. It hinders the work of the TPS. The concept of incremental contribution from plot should be replaced with recovery of actual cost of the scheme on prorata basis since it is a joint scheme. The compensation should be worked out on the basis of 10% of the monthly rent and should be delinked with the market value.

5. CONCLUSIONS

The comparative study of the legislative provisions of the Gujarat and Maharashtra Acts show that while in the Maharashtra pattern, the Town Planning Scheme (TPS) does not become operative until all the appeals on the Arbitrator's valuation decisions are heard and decided by the Tribunal of Appeal. Under the Gujarat Act, the operative part of the scheme which consists of the layout and re-constitution of plots can be separately finalised by the Arbitrator as a preliminary scheme and can separately be sanctioned by government. The advantage is that as soon as the preliminary scheme is sanctioned, the execution of work can be started. The decisions on valuation matters and litigation appeals are separately dealt with, which is a better procedure for speedy implementation of the Town Planning Scheme. This is also borne out by the discussions held with the Maharashtra State Town Planning Department, as stated earlier. Most of the suggestions for rationalisation of the scheme as also expediting their finalisation hold good in the case of Gujarat and other States. In fact, the provisions contained in the Model Law is an improvement over the Gujarat and Maharashtra Act with regard to determination of certain matters by the Planning and Development Authority and the Tribunal of Appeal.

In order to make the TP Scheme model as a self-financing mechanism in the planning and servicing of urban areas, it is necessary that excessive delays encountered in processing and implementation and other administrative bottlenecks are minimised and the system of land titling and registration records are improved which pose major constraints in successful implementation of TP Scheme, which provide a statutory basis for public participation in the planned development of the towns and cities.

REFERENCES

Maharashtra Act No. XXXVII of 1966, *The Maharashtra Regional and Town Planning Act, 1966*
Government of Gujarat, Legal Department (1976), *The Gujarat Town Planning and Urban Development Act, 1976*

32 | PLANNING AND DEVELOPMENT OF METROPOLITAN CITIES: NEED FOR METROPOLITAN DECENTRALIZATION

Abstract

The challenges of metropolitan cities cannot be resolved only by local decentralization of activities in and around metropolis but there is need for considering the decentralization of metropolitan and other centers of growth from the point of view of overall urban development strategy and settlement perspective. Containment of existing and would be metros by controlling their unrestricted growth should be a hall-mark of the metropolitan decentralization strategy. The paper however, advocates that the development of secondary cities would help in promoting more decentralized and diffused pattern of urbanization, besides preventing polarization of few metropolitan cities and stimulate rural economies. Accordingly, significant measures needs to be taken to attract the industrial and economic activities to the secondary cities by giving the incentives to the entrepreneurs and by implying the disincentives to discourage the flow of population to metropolitan areas.

1. INTRODUCTION

As in other developing countries, in India too, metropolitan cities have played an important role in transformation of the national economy even though they are suffering from myriad problems of unprecedented scale. Planning policies addressed during last four decades for tackling the problems of metropolitan cities not been very effective as these cities are growing beyond proportion and crossed the jurisdiction of spatial frame decided for the growth of these cities. In spite of the efforts made so far for the planned development of metropolitan cities, they are highly congested, under equipped, ill organised and badly managed. It appears, as if, something has gone wrong with the woof and warp of metropolitan cities and there is a need for new look in the planning and development policies and process.

So far, few metropolitan cities have only provided inlets to the migrants from far off rural areas and intermediate towns and served as demographic reservoirs as well as islands of hope for all those seeking jobs and better socio-economic life at the cost of quality of life and it is high time for the planners and policy makers to think in terms of metropolitan decentralisation in the country by creating alternate centers of growth. Reversing the trend of polarised development of metropolitan cities would also help in improving the efficiency of settlement system and balanced regional development in the country. If the trend is not changed and the giant cities like Bombay, Calcutta, Delhi, Madras, etc., are allowed to grow continuously, the situation in these cities, which are already crises ridden, may reach to a point of no return and such cities may prove to be urban monster.

2. POLICY IMPLICATIONS

In the absence of a comprehensive Urban Development Policy the development of metropolitan cities has been guided by the policies enunciated in various Five Year Plans for economic development of the country. Since the beginning, the major thrust of the policy has been restricting the growth of metropolitan cities. It was the Third Five Plan, which, while giving

due importance to the town planning activities, under-lined the need for preparation of Master Plans for important towns including metropolitan cities under centrally sponsored scheme of 100 % financial assistance. The Fourth Five Year Plan laid emphasis on prevention of further growth and decongestion and dispersal of population in large metropolitan cities like Calcutta, Bombay, etc., by taking up regional studies and development of new towns in the surrounding area for accommodating spill over population of metropolitan cities. Reiterating the similar approach, Fifth Five Year Plan also suggested the state governments to undertake legislative measures for setting up Planning and Development Authorities for the fast expanding large and metropolitan cities besides, measures for desirable and balanced spatial distribution of economic activities were suggested so as to attract the industries to new urban centers and disincentives to discourage the flow of population to the existing metropolitan cities.

As a result of the recommendations of the Task Force on Planning and Development of Small and Medium Towns and cities, Sixth Plan viewed the whole range of urban settlements having a role to play in the national development process, and, accordingly laid a greater emphasis to the provision of adequate infrastructural and other essential facilities in the small and medium towns so that they could play a comparatively large role in the urbanisation process in India and help in diverting pressure on large and metropolitan cities.

Noting with concern the large scale expansion of super metros of Bombay, Calcutta, Delhi and Madras, the Seventh Plan suggested for reorientation of the existing policies and continued its emphasis on planned and integrated development of small and medium towns so as to arrest the influx of migrants to large metropolis. It also called for a thorough re-examination of the current planning procedure of the metropolitan areas and evolving an approach suiting to the new imperatives of urban growth. Approach paper of the Eighth Plan suggests for taking measures for development of small and medium towns all over the country and strengthening their linkages with continuous rural areas so as to check the flow of unemployed from rural areas to big metropolitan centers. Paper also stress for simultaneous action for decongestion of metropolitan cities through appropriate industrial dispersal policy and promotion of more dispersed growth.

Besides, the industrial development policies of the government, have also not been in favour of encouraging the explicit growth of metropolitan cities. The industrial policy resolution of 1956, scheme of industrial backward districts and latest proposal for development of 70 industrial growth centers suggest for location of new industries away from the metropolitan and large congested cities. Recently, National Commission on Urbanisation, while suggesting a strategy for urban development laid emphasis on metropolitan containment and enlargement of net work of medium sized cities through accelerated development of next lower order urban centers.

Thus, it is crystal clear that the policies relating to metropolitan cities have from time to time asserted to restrict the growth of these cities and laid more emphasis on the development of small and medium towns so that they could arrest the flow of migration towards metropolitan areas. But, in spite of the policy interventions the population in these cities have been multiplying since the evolution of metropolitan culture.

3. METROPOLITAN GROWTH

Despite the restrictive policy, there has been a tremendous growth of metropolitan cities since the beginning of this century in terms of number, size and area. Calcutta came into being the first metropolitan city in the country in 1901 followed by Bombay in 1911. Calcutta and Bombay continued their supremacy till 1951 when Madras, Delhi and Hyderabad also jumped in to the million plus status. As against the policy of slowing down the growth of metropolitan cities the accretion of million cities, which was slow till 1951, speeded up considerably. Thereafter, Bangalore and Ahmedabad joined the row of metropolitan cities in 1951 while Kanpur and Pune crossed the million mark in 1971. Nagpur, Jaipur and Lucknow are the neo-metropolis which joined the line in 1981. Besides a total number of 12 metropolitan cities in 1981 there were 30 other cities with a population of 0.5 million and above which are in a transition stage to acquire status of metropolitan centers.

According to 1981 census the number of metropolitan cities is less than a half percent of the total urban centers in the country whereas they contain as much as of the urban population. The number of metropolitan cities increased 2.4 times i.e. from 5 in 1951 to 12 in 1981 while their population increased 8 times i.e. from 5.26 million to 42.02 million during the same period. The population of million cities increased almost at a constant decennial growth rate of 53 % during the last three decades. The growth of metros varied spatially depending upon the size, location and nature of city. During 1971-81 the growth of population in these cities varied significantly from 21.7 % in Lucknow to 76.6 % in Bangalore the fastest growing metro. Delhi, Ahmedabad, Pune and Jaipur were the other fast growing metros having more than the average growth rate of 46.3 % for total urban population in India during the same period while rest of the metros may be ascribed as moderately growing cities.

The growth of population in these cities reflects demographic explosion and is mainly a compulsive growth due to natural increase and immigration. Proportion of immigrants is steadily increasing in these cities in all the age groups and both the sex. In Bombay, Delhi and Pune almost half of the total population was cumulatively counted as migrants in 1981, while in others cities proportion of migrants population was more than one quarter of their total population.

With the expanding population base of metropolitan cities, formal and informal sectors of economy have also grown substantially. On the whole industry and manufacturing have continued to be the main activity in most of the metropolitan cities in spite of the disincentives applied to discourage the location of industry in these cities. Calcutta, Bombay and Ahmedabad are classified as mono-functional industrial centers having more than 40 % of total workers in manufacturing and industrial activities in 1981. Delhi, Madras, Bangalore, Kanpur, Pune and Jaipur are classified as bi-functional towns employing more than 60 % of total worker in industrial activities and other services. The functional classification of metropolitan centers reveal that these cities have either already achieved industry based economy or are in the process of achieving it as is evident from the large scale activities. In case of Delhi alone, in spite of policy control measures the workers in manufacturing activity increased at the fastest rate of growth of 100 % during 1971-81. In Bangalore, Hyderabad, Pune and Jaipur manufacturing workers recorded an increase of more than 60 % during the same period. Historically metropolitan cities grew as

administrative nuclei and later acquired prominence in center of trade and steadily developed the services and institutional base which ultimately helped in the development and growth of industrial activities.

If these trends persist the metropolitan growth may proceed at a progressively higher rate in foreseeable future. Projections show that by the turn of the century population of India will touch to 986 million of which about 33 % will be living in urban areas and at least one-third of urban population will be confined in the metropolitan cities. Number of metropolitan cities is expected to increase from 12 in 1981 to 20 - 22 by 1991 and around 40 by 2001. It is anticipated that Bombay, Calcutta, Delhi, Madras, Hyderabad, Ahmedabad and others large metros may become the epi-center of enormous megalopolis. Unless the trends of concentration are diverted the metros and future metros being highly generative and absorbtive are poised to grow thereby worsening the problems in metropolitan areas.

4. CHALLANGES AND CONSTRAINTS OF DEVELOPMENT OF METROPOLITAN CITIES

The phenomenal demographic growth of metropolitan cities, generally not supplemented by the strengthening of infrastructure and economic base, is the root cause of many of the urban problems faced by these cities. The ever enlarging population base has put a severe pressure on the already scant social and physical infrastructure base thereby worsening the situation and deteriorating the quality of life. A large chunk of population is residing in slums and squatter areas with sub-standard living condition. A study conducted by TCPO estimate that on an average one-third of population in metropolitan cities reside in slum and squatter settlements, while in super metros the proportion is still higher.

The problem of slumification is related to low per capita income and acute shortage of housing which is critically in short supply both quantitatively and qualitatively. In Bombay about 77 % of households are just living in one room tenements while in Calcutta almost two thirds of households live in one room units. It is estimated that about 4 million people in Bombay, 3 million in Calcutta, and 2.5 million each in Delhi and Madras do not have adequate shelter of even one room and just live in shackles, *bustees* and *jhuggies*.

Water is a basic necessity of life but there is acute shortage of water supply in most of the metropolitan cities. In Calcutta one-fourth of population consume unfiltered water from hand pumps and tube wells and the remaining get some kind of protected supply. In case of Bombay as against a demand of 1185 MLD only 820 MLD is available while in Madras the condition is still worse, where about 7 lakh urban poor do not have any access to potable water supply. As regards sewerage, large proportion of population is not served by proper sewerage system in metropolitan cities. In some cities like Calcutta and Bombay existing sewerage systems are age old and are being overused and overburdened. The condition of refuse collection is also not better. For instance in Madras out of 4.6 lakh of solid waste only 0.6 lakh tonnes is converted into compost annually and the rest is just dumped, on the outskirts of the city which creates unhygienic conditions.

The population of vehicles are increasing more than human population and the area under roads has not increased in the same proportion which has resulted into large scale traffic and

transportation congestion. About 30 % of total vehicles in the country are registered in 12 metropolitan cities. For instance Delhi has just one percent of country's population but contains 10 % of its vehicle. In the last two decades city's human population has grown 130 % and the vehicle population by 1300 %. The mass transportation systems are overcrowded, congested and are under operation beyond their capacities. The public transport system in the city centers literally crawls at a speed of 6 - 10 km / hour during peak hours. Traffic jams and bottlenecks are the common scenes affecting the mobility severely. Transport system is deficient, passenger transport services are grossly inadequate in relation to demand and do not meet the higher per capita trip rate and longer trip length because of the vast expansion of these cities. On the one hand city transport service consumes about 25 % of total energy of the city in terms of oil, while on the other it causes air pollution to a large extent. With this traffic hazards commuting in these cities has become nightmare and traffic chaos besides causing delays also take a heavy toll of human life.

The metropolitan cities by providing wide choices for workers, employers and consumers attract large number of people for jobs and glamorous modern materialistic life but at the cost of degradation and pollution of living environment. The sheer number of people and scarcity of infrastructural services have direct impact on the environmental quality in these metropolitan cities. High density of population tends to consume every conceivable green land and open spaces thereby disturbing the mass and space relationship and city's eco-system in particular. The huge quantity of waste generated by these cities cause air, water and land pollution. Vast industrial areas with tall chimneys belching smoke and mending streams of auto vehicles emitting fumes are mainly responsible for air pollution. It is estimated that about 60 % of atmosphere pollution is caused by vehicle exhaust. Industries are discharging their effluents into water-body causing water pollution. The unauthorised areas and proliferation of slums, *bustees* and shanty towns within the city spoil the built environment and deteriorate the quality of life.

Due to paucity of developed land, large metros are sprawling into agricultural land. It is estimated that in the last few decades about 75,000 hectares of good agricultural land has been converted for urbanisation in the country and substantial part of it has been consumed by the metropolitan cities, misuse, abuse and non-confirming use of lands are the major problems which come in the way of proper planning and control of land use development. Most of the metropolitan areas are over urbanised and the intensity of development has almost outpaced the supply of developed land.

The continuous expansion of metros both horizontally and vertically have not only overburdened and out-stretched the existing service but pose a severe problem for their management. In super metros like Delhi, Calcutta and Bombay service infrastructure designed for a few lakh of people have to cater to the needs of millions thereby putting stress and strain on the limited resources of the local administration. Many of the agencies created for the balanced development and efficient management of metropolitan cities have overlapping functions and jurisdictions and not helped much in solving the urban problems.

In the last three decades lot of money has been pumped into larger cities particularly in super metros but results are not very effective in relieving these cities from crises. Many of

the metropolitan cities have grown more demographically and physically without adequate augmentation of economic base. Leaving these cities on their own fate will mean abandoning of a large population to state of chronic distress, hence efforts need to be made to strengthen the economic base of these cities and dispersal of certain activities to the cities and towns of second order.

5. PLANNING EFFORTS

Efforts have been made by the state governments and metropolitan planning and development agencies to promote orderly development and check unrestricted growth of metropolitan cities. Initially planning efforts for metropolitan development confined to the piece-meal schemes for improvement and development of certain areas within metropolis were later on broad based by encouraging the preparation of Development Plans, suggesting the spatial frame for the development of the whole town. Now, the main thrust is on preparation of Metropolitan Regional Development Plan incorporating proposals for containment of population in the metropolis and dispersal of population and activities in the surrounding towns. Piece-meal schemes taken up earlier in the metropolitan cities had obviously limited scope for improving the living conditions and physical environment in certain selected pockets, and not of entire city.

Taking a comprehensive view of the city Master Plans / Development Plan have been prepared for all the metropolitan cities providing necessary guidelines for regulating land use, control of development and expansion of these cities. To give legal backing to the Master Plans and to implement them smoothly necessary legislation have also been enacted by the concerned State Government and Metropolitan Planning and Development Authorities like DDA, BMRD CMDA, MMDA, etc. During seventies it was observed that in spite of the Master Plan approach adopted for the development, the living conditions of the city continued to be substandard for majority of the people residing in the city and urban problems persisted as population grew beyond projections unrestrictedly. Realising the inadequacy of Master Plan approach in achieving the desired objectives of metropolitan planning and development, planners adopted the strategy of Metropolitan Region Development Plan taking metropolis and its surrounding area as one large Planning Region like National Capital Region; Bombay Metropolitan Region, Madras Metropolitan Area; Calcutta Metropolitan District; etc.

So far, planning efforts for the metropolitan cities have been mainly improving the physical environment and controlling their growth by adopting an approach from center to outward i.e. point to whole. Such planning efforts and approach followed for development of metropolitan cities have not been very successful, as these cities have been seen in isolation of its hinterland and region and not as part of a broad urban development strategy.

The poly-nodal / poly-centric concept followed for dispersal of activities in various metropolitan cities and measures suggested for development of satellite and priority towns around metropolis for housing overspill of population, and for checking the streams of migrants to metropolis have not helped in drawing off the pressure of on metropolitan cities and the congestion in the metropolitan area continue. After the migrants from the rural areas concentrate into metropolitan cities, the planning efforts are made to decentralise them in and around metropolis,

which clearly indicates that the planning efforts have so far been curative and not preventive in nature.

It is increasingly being felt that metropolitan problems cannot be solved only by local decentralisation of activities in and around metropolis but there is need for considering the decentralisation of metropolitan and other centers of growth from the point of view of overall urban development strategy and settlement perspective.

6. NEED FOR DECENTRALISATION

In spite of the suggestive policy for controlling the growth of metropolitan cities, they are growing at a rapid rate and planning efforts made for solving their problems have either been ineffective or slow to produce the desired results. Attempts for dispersal of activities within these cities have not been very successful in relieving the congestion in the central areas and universally tried approach of developing new towns / ring town or priority towns just at the boarder of mother city have not helped much as a barrier to check the migration from going to metropolitan cities. It appears planning and development of metropolitan cities have been treated as a fate *accompli* where more attention has been given for curing the emergent disease by taking short term and adhoc measures rather than investigating the cause of disease and taking long term measures.

Approach for metropolitan decentralisation followed, so far, directed towards tackling the problems of singular city, rather than considering them as a part of total urban development perspective and policy. Hence, strategy for development of metropolitan centers and large cities should be worked out in relation to total human settlement perspective at national and regional level with main focus on development of alternate centers of growth to realise the concept of metropolitan decentralisation.

For operationalizing the concept of metropolitan decentralisation it would be necessary to reverse the approach of 'point to whole' to 'whole to point' by formulating a broad policy framework for urbanisation and urban development under which the development strategy should be worked out for various types of settlements. Taking into consideration the existing population distribution pattern, transport and communication lines, availability of resources and their potentials and propensity of existing urban settlements, estimates of population projection, policy for industrial, agriculture and energy development, etc., a broad policy for urbanisation and urban development should be framed. Within the broad, framework of the national policy on urban development, regional urbanisation pattern and urban settlement system should be detailed out further along with the role and function of each settlement at various levels. The major thrust should be on the controlled expansion of existing as well as likely metropolitan areas; development of secondary cities as alternate center of growth so as to act as real counter magnets to metropolitan cities; strengthening of small and medium towns as service and support centers to the rural hinterland and reconstruction of village structure and rural areas.

Major share of the various five year plans allocation has gone for the development of rural areas in terms of providing basic infrastructure and services under community development programs - IRDP and other development programs. Still a lot more need to be done in transforming the rural

structure and creation of additional employment opportunities in non-traditional areas. Unless additional jobs are created in the villages in the agro-industrial areas the unemployed rural folk will leave the country and crowd in the cities particularly metropolitan areas. The approach paper of the Eighth Five Plan has rightly laid emphasis on rural development, and generation of employment and suggested for decentralised planning approach. As part of the metropolitan decentralisation strategy, taking district as a viable unit of planning a District Development Plan should be prepared incorporating the proposal both for rural and urban areas so that majority of the population could be contained in villages.

7. CONCLUSIONS

Containment of existing and would be metros by controlling their unrestricted growth should be an hall-mark of the metropolitan decentralisation strategy. In fact, the development of secondary cities would help in promoting more decentralised and diffused pattern of urbanisation, preventing polarisation of few metropolitan cities and stimulate rural economies. Accordingly, significant measures needs to be taken to attract the industrial and economic activities to the secondary cities by giving the incentives to the entrepreneurs and by implying the dis-incentives to discourage the flow of population to metropolitan area.

Yet another fact of metropolitan decentralisation, small and medium towns should be strengthened as service and support center to rural hinterland. The centrally sponsored scheme of Integrated Development of Small and Medium Towns (IDSMT) was launched in the Sixth Five Year Plan with the twin objectives of improving the infrastructural base in these towns and checking the migration towards metropolitan and large cities. The scheme continued during Seventh Five Year Plan and has also been extended in the Eighth Plan with some refinement. Various evaluation studies indicate that IDSMT scheme has helped considerably strengthening the physical infrastructural base and creation of additional jobs in the towns covered under the scheme. Regarding checking of migration to large cities under IDSMT scheme there are no success stories to tell because of the fact that the coverage of the town is hardly 10 %. Considering the size and character of small and medium towns, they will have to play important role in development of linkages between urban and rural areas and to function as service and market centers to the rural hinterland. Hence, strengthening of small and medium towns as well as market towns either as a centrally sponsored scheme or under State sector scheme should be taken up more vigorously which will ultimately help achieving the objective of metropolitan decentralisation.

33 | PROFESSIONAL REQUIREMENTS OF SPATIAL PLANNING TOWARDS 2001

Abstract

Spatial Planning though recognized as significant, has yet been found, wanting proper recognition. Emphasis however is mounting. Institutional and Legal changes are being recommended by various Committees and Task Forces, to meet the future demands. Present strength of physical planners is grossly inadequate. There is inadequacy of information as well as of the strength of spatial planners; which hinders their proper estimation for future requirements. Nevertheless using different methods for different levels of deployment of planners the total strength of spatial planners have been estimated to 7000, by the turn of the century, in the paper for effectuating and actuating the spatial planning in a proper way. However, the important aspect to be attended at once is the deployment of spatial planners in proper strength at appropriate levels.

1. INTRODUCTION

Every activity, planned or carried out, has spatial dimensions. Inter-relationships of spatial dimensions of activities have become more complex with their increase giving rise to the conflicts over use of the scarce space. The conflicts have led to the increasing awareness of the concept of appropriate use of space which means the application of spatial planning.

Most of the conflicts among various activities are found in human settlements whether rural or urban. Rural settlements as are small, do not pronounce the need to spatial planning prominently. Urban settlements, on the contrary, owe their healthy living and functioning to spatial planning or town planning. The better is the application of town planning, the more efficient is the urban center. Intensity of application increases with the increase in the size of the settlements. Spatial planning is equally important at district, regional, state or national levels as the sphere of spatial dimension of regional activities is larger with more inter-relationships. Spatial dimension at regional level has so far remained neglected and the sectoral investment was never given spatial appraisal involving its spatial impact assessment.

As a matter of fact, not all the urban settlements have come under the umbrella of spatial planning process. This is probably the reason for concentration of activities in a few cities where the planning process has been developed. This indicates the occurrences of the serious gaps in spatial planning at settlement level as well as at regional level. In fact, there appears to be few cities where the planning process has been developed. This indicates the occurrence of the serious gaps in spatial planning at settlement level as well as at regional level. In fact, there appears to be no concern for spatial planning at national level. National Commission on Urbanisation (NCU) observes "lack of spatial concern in the national planning process has resulted in a spontaneous pattern of urbanisation". This has led to distorted settlement pattern and primacy of large cities.

The gaps observed in spatial planning have been primarily because of lack of initiatives at decision making level and of course because of lack of institutional and legal support and non-involvement of existing spatial planning Organisations / Departments to the fullest extent. The NCU also recommends strengthening of institutional and legal support besides recommending growth inputs in second order cities and small and medium towns; and integration of sectoral

and spatial planning, through impact assessment of every investment. Preparation of various Spatial Plans is also recommended in the Commission's Report.

The report of the Committee of Ministers on "Shortage of Town Planning Personnel" noted, in 1966, that the planning (spatial) must be performed in a two-fold manner, namely: (i) the determination of policies and socio - economic strategic; and (ii) preparation and carrying through of a Plan for the use and development of land in conformity with the activities.

The committee evidently puts emphasis on the coordinated functioning of policies and spatial planning. Machinery for such coordination / integration does not exist in India.

Economic policies at national level are formulated by the Planning Commission which does not have mechanism for considering spatial aspects of the policies. It recognises the need of making urban development to support economic development, yet the Housing and Urban Development Division of Planning Commission among 27 divisions, is the smallest one managed by just three Officers.

The Ministry of Urban Development at National Level also does not accord much priority to coordinated spatial planning approach and generally deals with Centrally Sponsored Schemes like IDSMT, EIUS, UBS, etc. Even the Planning Commission does not obtain its opinion on various projects, having spatial dimensions. This is true for other Ministries too. Large scale irrigation projects are cleared without assessing the spatial impact of the same in the region. Ministry of Industries selected, about 100 industrial growth centers without actively involving the Ministry of Urban Development. The NCU also remarks that "the importance of urban development in the Ministry has been diluted by assigning to it, responsibilities, of public works, and printing and stationery". The Ministry of Urban Development does not have jurisdiction over villages which are fallen under Ministry of Agriculture. The Ministry of Agriculture, however does not deal with spatial planning and development of villages.

The Central Town and Country Planning Organisation (TCPO) the apex body in the field of Urban and Regional Planning is the technical arm of the central Ministry of Urban Development. However, primarily the status of the organisation as a subordinate office, does not allow it to provide the much needed spatial policies and their assessment. Task Force on Housing and Urban Development in the Planning Commission in 1983 recommended reorientation of TCPO to be a strong technical arm of the Ministry of Urban Development assuming major role in formulating and guiding the spatial planning in the country. The NCU also recommended to raise the status of Chief Planner of TCPO to the level of Director General of CSIR.

At State level there are State Planning Boards / Commissions which can be placed at par with the central counterpart as far as spatial planning is concerned. Almost every State though, has Town and Country Planning Departments, (TCPD), yet these too have limited functions and powers. Their jurisdiction clash with those of Housing Boards and other State level organisations. The NCU observed that the special purpose agencies in some States like Tribal Development Authority, National Land Use Board, etc., do not employ physical planners. General lack of coordination is also noted by NCU. At district level, too there is no agency involved in district spatial planning. District Planning and Development Council does not have physical planners.

Not all the urban settlements are governed by spatial plans, and villages have not at all been considered from view point of spatial planning. In fact legal provisions are not provided by most

of the States for formulating Regional Plan to make effective the spatial aspects. However, the status of Maharashtra, Gujarat, Tamilnadu, and Madhya Pradesh, have legislations to frame Regional Plans. The Model Town and Regional Planning and Development Law, prepared by TCPO, for adoption by the state governments also provides for preparation of Regional Plans. In general, however, there are serious gaps observed in the legal and institutional set up for spatial planning. Recommendations to revamp the institutional set-up made by various Committees are:

- Impact assessment of every sectoral project in the Planning Commission which needs strengthening of Housing and Urban Development Division by creating Spatial Planning Division deploying spatial planners be explored. State Planning Boards / Commissions should also be re-structured on similar lines;
- Integrate sectoral outlays with spatial planning;
- Establishment of high power organisation, in the form of National and State Urbanisation Councils, to formulate guidelines and coordinate and monitor the activities of the concerned agencies, and organisation at central state and district levels;
- Central Ministry of Urban Development to be nodal agency for urban planning and development and for coordinating actions in the matter of major investment, and decisions having major spatial implications;
- Re-orientation and development of central TCPO as strong technical arm of the Ministry of Urban Development, with its multi-disciplinary character by giving it higher status. NCU, however, prefers TCPO to be placed Under Urbanisation council. Similarly State TCPD's should be under State Urbanisation Council. Various concerned departments should come under one Ministry;
- Encourage urban research and training;
- Establish Sub-regional Planning and Development Boards;
- Enact suitable laws to prepare Regional Plans at regional and district levels;
- Apart from metropolitan cities, urban development be conceived in regional context;
- Formulate centrally sponsored schemes to strengthen State Town and Country Planning Departments (TCPDs);
- Strengthen local bodies in Class-I cities for physical planning needs at local level. Small and Medium Towns should be looked after by State TCPD's;
- Create strong Urban and Regional information System at center and states levels;
- Create Town Planning Cell headed by Town Planner of the rank of Joint Secretary in Economic Ministries dealing with industries, agriculture, forestry, environment, mining, power, transport, etc., both at central and state levels (Task Force ITPI); and
- Chief Executive Officer of Urban Development Authorities should be a Town Planner.

In spite of all these recommendations, not much is being done to promote the spatial planning. A report of the Task Force on Professional Matters set up by the Institute of Town Planners, India (ITPI) even noted in 1986, the gradual decline in the role of the Town Planners (spatial planners) in the country. The report explains three way decline which are:

- Management of the urban development by people who do not have the required capabilities, training, experience or foresight;

- Deliberate disassociation of Planners who have been trained for the purpose from the formulation and implementation of policies and programs concerning urban development; and
- Lack of necessary authority and responsibility to town planner to manage urban development and urban growth.

The committee of Ministers noted that the Town Planner not only has to prepare the Plan but also has to enforce it. Hence, town planners must be given adequate powers if necessary, by statute, "Without necessary authority for enforcement as well as for coordination, the role of Town Planner would become ineffective and his advice would not receive serious consideration". These remarks, however, could not attract much consideration in the administrative set up. This has resulted in the stagnation of spatial planning bodies like TCPO, State TCPD's; etc.

There are about 1200 spatial planners registered with ITPI. However, active members are stated to be only 900. Considering only, urban population which is somewhere close to 200 million now, one million persons have only 4-5 Spatial Planners. Keeping in view the necessities of district planning and spatial planning at regional level, the number becomes still smaller. It is possible that all the spatial planners are not the member of ITPI, the number in any case would not exceed 2500 i.e. twice the number of registered town planners with ITPI. This is close to the requirement projected by the Committee of Ministers (in 1966), by 1975 (Table 1).

Table 1: Requirement of Town Planners in the Country by 1975

Field of Deployment		No.
1.	State and Local Town Planning Departments.	1300
2.	Central Town & Country Planning Organization	75
3.	Public Sector Undertakings	100
4.	Regional Planning Agencies	150
5.	School of Planning	50
6.	Urban Research Units	50
7.	Consultative practice	400
		2125
	Say	2100

Some of the problems of State Town and Country Planning Departments also remain the same as enunciated by the Committee of Ministers. Important among these, are deficiencies in service conditions, such as lack of prospects for future betterment, and administrative drawbacks leading to dissatisfaction among technical people.

The strength and status of Town Planners at present, is in bad shape while urban population and spatial requirements are increasing. As per 1981 census there are 3949 urban centers as against 2699 in 1961 and 3119 in 1971.

The Committee of Ministers on Town Planning personnel has not taken into consideration the deployment of spatial planners, at various levels. For instance, it did not give any thought to effectuate spatial planning at the levels, where sectoral planning is given shape i.e. Planning Commission and Planning Boards. Other Ministries with spatial dimension of their development works like, transport, agriculture, mining, industries, etc., were also not given consideration by the committee. Even deployment with the Development Authorities (DDA) was not accounted for. Development Authorities employ substantial number of spatial planners. Also no representation of spatial planners was sought in District Development Councils.

Nonetheless, the report of the Committee of Ministers sought appropriate status and power for Physical Planners considering situation of the time where the profession of town and country

planning was establishing itself. However, the modes of calculating the number of town planners in certain cases seem in right direction even today (Table 2).

Table 2: Mode of Estimating Town and Country Planners by the Committee of Ministers on Shortage of Town Planning Personnel

Level		Mode
1.	At central level (Town and Country Planning Organization)	- Assuming five at least in each state at the headquarter
2.	At state level	- Six for inter-state regional plans.
3.	For regional Planning Agencies	- Three for every district
4.	At District level	- Three for every district
5.	At Municipal level	- Three for every corporation,
		One for every Class-I city.
		One each in 50% of class-11 towns.
6.	Schools of Planning	- Six for each School
7.	For Research	- Consideration of increase in Research.
8.	In Public Sector Under-taking	- One in each Public Undertaking.
9.	In consultative practice	- Tentative assumption keeping in view increase in activities.

Currently the efforts are being made on one side for integrating spatial and sectoral planning whereas on the other hand the urban population is on the increase. By 2001 it is expected somewhere around 350 millions, with about 70% of it in Class - I, cities, (Table 3). Number of

Table 3: Projections on Urban Population in India (in Millions)

Year 1991	Methods		Remark	
	Registrar General Census	Planning Commission	Rakesh Mohan 1985	World Bank
	1	2	3	4
Total	230.15	235.7	234 - 236	-
In metropolitan cities	-	66.5 (28.21)	-	-
In Class - I Cities	-	35.7 (36.36)	-	-
In Class - II Towns 2001	-	28.3 (12.00)	-	-
Total	326.04	333.6	315 - 320	353.00
In metropolitan cities	-	97.4 (29.19)	-	-
In Class - I Cities	-	133.5 (40.00)	-	-
In Class - II Towns	-	39.5 (11.84)	-	-

Note: Figurer in brackets are the percentages of total.

- Sources:*
1. Report of the Expert Committee on population projections, office of the Registrar General, Census of India, New Delhi (hundred)
 2. Task Force Report on Housing and Urban Development, Planning Commission, Government of India, 1983.
 3. World Development, Report World Bank 1984
 4. Rakesh Mohan, 1985

metropolitan cities might go up to 23 in 1991 and 40 in 2001. Concentrating trends in the urbanisation is likely to continue with more and more number of million plus cities (Table 4).

At least four cities i.e., Calcutta, Bombay, Madras and Delhi will cross 10 million mark by 2001. Number of Corporations have gone up to 73 (in 1989) and of Development Authorities up to 100. Requirement of spatial planners therefore, is going to be quite large if the settlement system is to be kept in order.

For assessing the demands of spatial planners following levels are identified considering present set-up and recommendations of various Committee / Task Forces. (except the recommendations which have not found favours for putting into practice).

1. Central Government Level:
 - Planning Commission;
 - Town and Country Planning Organization;
 - Other Ministries with investment outlays for urban areas.
2. Research in Urban and Regional Planning.
3. State level:
 - Planning Board;
 - Town and Country Planning Departments; and
 - Other Ministries with investments outlays for urban areas.
4. Regional Level:
 - Inter-state regions; and
 - Intra-state regions.
5. Local level:
 - Metropolitan areas;
 - Corporation;
 - Class - I cities; and
 - Class - II towns.
6. District Level.
7. Planning Schools.
8. Public Sector Undertakings.
9. Consultative work.

Table 4: Number of Metropolitan Class - I and Class - II Urban Centers in India.

Year	Metropolitan	Class - I	Class - II	Remarks
1961	6	107	139	Actual
1971	9	150	219	Actual
1981	12	225	319	Actual
1991	23	312	360	Projected
2001	40	400	460	Projected

Before going into assessment it is worthwhile to look at the present rate of output of qualified town planners in the country. At present there are nine institutions offering post-graduation in

Table 5: Annual Intake of Urban and Regional Planning Courses in various Schools / Institutions

School/Institutions	Name of the course	Duration (months)	Intake	Likely output
School of Planning and Architecture, New Delhi	Urban Planning	18	30	30
	Regional Planning	18	13	13
IIT Kharagpur	Master of City Planning	18	8	8
	Master of Regional	18	8	8
University of Roorkee	Master of Urban and Rural Planning	18	10	10
Government College of Engineering, Pune	M. E., Town & Country Planning	18	26	26
Center for Environmental Planning and Technology, Ahmedabad.	Urban & Regional Planning	18	25	25
Guru Nanak Dev University, Amritsar	Master of City and Regional Planning	18	15	15
Anna University, Madras	Master of Town & Country Planning.	18	20	20
University of Mysore, Mysore	Master of Urban and Regional Planning	24	16	16
Institute of Town Planners, India.	Associateship Examination of ITPI, India.	24	16	16
Total	12 Courses			176

Source: CRDT, Institute of Town Planners, India.

Urban and Regional Planning with maximum annual output of 176 Planners (Table 5). School of Planning and Architecture, New Delhi has started Bachelor's course in Physical Planning from the current year. Since no output is not likely to come before four years the annual output has not been included in the estimation. Besides specialised courses like transportation, environment planning, etc., have very few seats and hence are not included for estimating annual output, (Table 5).

2. REQUIREMENT OF SPATIAL PLANNERS AT CENTRAL LEVEL

2.1 Planning Commission

Planning Commission is the highest body in the field of Planning but its main orientation has been towards Sectoral Planning without any input whatsoever of spatial planning. Its Housing and Urban Development Division therefore, needs to be strengthened by deploying Physical Planners at appropriate levels. As spatial planning involves all sectors of investment, it at least requires, three Spatial Planners by 1991 and five by 2001 at senior level for proper coordination of spatial and economic planning.

2.2 Town and Country Planning Organisation (TCPO)

TCPO has been responsible for establishing the profession of Urban and Regional Planning in India and forms an apex body in the field. It's strengthening has been recommended by almost every

Committee / Task Force (including NCU) but it remains the sole neglected body. It has 13 Spatial Planners in 1966 and the Committee of Ministers projected its requirement to 75 by 1975 but today it has hardly 40 Urban and Regional Planners, in 8 Physical Planning divisions considering administrative problems and scope of expansion, therefore, minimum requirement of 50 Spatial Planners are projected by 1991 and 75 by 2001.

2.3 Other Ministries with investment outlays for urban areas

There are certain Ministries at central level whose implementation of programs has wider spatial implications at urban and regional levels. These ministries are viz. agriculture, transport, mining, environment and forest, energy and industries, etc. Each of these ministries should have at least one spatial planner at senior level by 1991 and 3 by 2001. Considering these seven ministries the requirement comes as 7 by 1991 and 21 by 2001.

3. REQUIREMENT OF SPATIAL PLANNERS IN URBAN RESEARCH

Following the necessity of having a research organisation at central level, National Institute of Urban Affairs (NIUA) was established. NIUA has been involving in the field of urban research under Ministry of Urban Development. Report of the Committee of Ministers estimated 50 town planners for research purposes by 1975. In fact as the things stand today, not more than 50 persons are deployed for research at national level including all institutions like Institute of Public Administration, Institutes of Local Self Government and others. There is likelihood in the increase in the number of 50. As of 1991 is concerned the number can remain as 50 where as for 2001 this requirement might go up to 100.

4. REQUIREMENT OF SPATIAL PLANNERS AT STATE LEVEL

4.1 Planning Boards / Commissions

As recommended for National Planning Commission on Urbanization (NCV), 5 qualified town planners are estimated to be required in every State for Planning Boards by 2001. By 1991, the requirement is put at three for each State. For 25 States the requirement of spatial planners in 1991 would be 75, and by 2001, the total 125 spatial planners would be required in State Planning Boards.

4.2 State Town and Country Planning Departments

Town Planning is a State subject and, hence in the promotion of spatial planning role of State TCPD's is very significant. The report of the Committee of Ministers observed that "a well staffed and equipped Town and Country Planning Department is required to advise the state governments in all matters concerning urban and regional development in the state, to prepare a comprehensive State Physical Plan, and to direct and promote town planning activities in the State in accordance with the law". The Committee also recommended five spatial planners for each TCPDs at the Headquarters (Table 6A and 6B). However, it is felt that every specialised activity like transport, building bye-laws, environment, etc., must have at least three spatial planners at the headquarters. There could be 7-8 such specialised job. So on an average by 2001 every state headquarters should have 24 urban and regional planners. For 25 states the requirement would be 600. For 1991 half of it can be considered.

Table 6A: Requirements of Town Planners at State, District, Metropolitan and Local Town Planning Departments

Name of the State	State	District		Corporation		Class - I		Class - II		Total	ECSG
	No.	No.	NTP	No.	NTP	No.	NTP	No.	NTP	NTP	
Andhra Pradesh	5	20	60	1	3	10	10	9	5	83	30
Assam	5	11	33	-	-	1	1	2	1	40	40*
Bihar	5	17	51	1	3	6	6	7	4	69	62
Gujarat	5	17	51	1	3	5	5	9	5	69	135
Jammu & Kashmir	5	9	27	-	-	2	2	-	-	34	19**
Kerala	5	9	27	2	6	2	2	5	3	43	43**
Madhya Pradesh	5	43	129	3	9	3	3	6	3	149	140*
Madras	5	13	39	1	3	8	8	10	10	65	65**
Maharashtra	5	26	78	4	12	8	8	15	8	111	168
Mysore	5	19	57	2	6	4	4	9	5	77	100
Orissa	5	13	39	-	-	1	1	3	2	47	47
Punjab Haryana	10	19	57	-	-	5	5	12	6	78	99
Rajasthan	5	26	78	-	-	6	6	4	2	91	91**
Uttar Pradesh	5	54	162	5	15	12	12	18	9	203	60
West Bengal	5	16	48	1	3	11	11	19	10	80	50
Nagaland	5	3	9	-	-	-	-	-	-	7	7
All States	85	315	945	21	63	84	84	137	73	1250	1187

* Confirmed by State Town Planner in the meeting held at Delhi on 18.7.66.

** No replies received from the State Governments, and therefore taken as confirming to committee's estimates.

NTP = Number of Town Planners

ECSG = Estimates communicated by State Governments.

I = District

II = Corporation

III = Class I

IV = Class II

Table 6B: Requirements of Town Planners at State, District, Metropolitan and Local Town Planning Departments

Name of the State	State	District		Corporation		Class - I		Class - II		Total
	No.	No.	NTP	No.	NTP	No.	NTP	No.	NTP	NTP
Union Territories Andaman Nicobar	3	-	-	-	-	-	-	-	-	3
Himachal Pradesh	3	6	12	-	-	-	-	-	-	15
Manipur	3	-	-	-	-	-	-	1	1	4
Tripura	3	-	-	-	-	-	-	1	1	4
Goa, Daman, Diu	3	2	2	-	-	-	-	-	-	5

Name of the State	State	District		Corporation		Class - I		Class - II		Total
	No.	No.	NTP	No.	NTP	No.	NTP	No.	NTP	NTP
Pondicherry	3	-	-	-	-	-	-	-	-	3
Delhi	2	-	-	1	3	4	1	-	-	6
Chandigarh	3	-	-	-	-	-	-	-	-	3
NEFA	-	5	5	-	-	-	-	-	-	6
Lakshadweep Minicoy	1	-	-	-	-	-	-	-	-	1
Total Union Territories	25	13	19	1	3	1	1	2	2	50
All India	110	328	964	22	66	85	85	139	75	1300

There are six Union Territories (UT) besides Delhi, which is considered as metropolitan city. The requirement of each UT can be put at half of the requirement of the each state. So UT's would be requiring 72 (12x6) spatial planners by 2001, half of it can be considered for 1991. Thus, the total requirement of spatial planners in state / UTs Town and Country Planning Department at the headquarters would be to the tune of 672 for 2001 and 336 for 1991.

4.3 Other State Level Ministries with Investment Outlays for Urban Areas

At least one Spatial Planner is estimated to be required in each such Ministry as explained in case of central level. The requirement for each State then would be 7 by 2001. For all the States the requirement would amount to 175, no provision is kept for 1991 as it does not seem feasible, because unless Central Ministries adopt the provision of deployment of spatial planners, states will not follow suit.

5. REQUIREMENT OF SPATIAL PLANNERS AT REGIONAL LEVEL

Not all the States have mechanism for preparing Regional Plans. Nevertheless, the emphasis on spatial planning at regional level is increasing and hence requirement of spatial planners for regional spatial planning and their enforcement would be increasing.

There could be two types of Plans i.e. inter - state and intra - state. It is difficult to assess the number of such Plans. However, for Inter-state Plans the number of Macro Planning Region as identified by TCPO can be taken as a measure. There are 36 such divisions. Taking at least 6 planners for each Regional Plan (this was the norm adopted by the Committee of Ministers in 1966), the requirement therefore, would be of 216 personnel for Inter-State plans.

Assessment of Intra-State Plans is also not easy to estimate / calculate. However, adopting conservative estimate by 2001 at least 2 Intra-State Regional Plans can be considered for each State and one for each UT. Number of such plans thus comes as 57. Keeping 5 spatial planner for each Plan the number of planners works out to 285. Thus, total requirement at regional level would be of 501 by 2001. 40 % of these planners (i.e. 200) can be kept for 1991.

6. REQUIREMENT OF SPATIAL PLANNERS AT LOCAL LEVEL

Planning of metropolitan areas is different from the planning of regions or other urban areas. Requirement of spatial planners, would therefore be different in these areas. These areas are mostly planned and developed by Development Authorities. As a matter of fact certain

non-metropolitan areas, too have Development Authorities but those small centers can not be compared with metropolitan areas. This is one of the reasons as to why the estimation at local level is not made considering Development Authorities as a level.

For metropolitan areas, therefore, the number of spatial planners is estimated according to the total urban population in metropolitan areas. Considering practicality and present deployment of planners in metropolitan areas 1.5 planner is estimated to be required for one lakh of metropolitan population. By 1991 the requirement of spatial planners for a population of 66.5 million would be 997.5. Similarly by 2001, 97.4 million metropolitan population would require to be served by 1461 spatial planners.

6.1 Municipal Corporation Level

Municipal Corporation, in strict sense is the urban management body. Every Corporation besides management does works, of urban development, urban renewal, slum improvement, network spread and provision of amenities and facilities. For these aspect the Corporations require services of qualified town planners. The Committee of Ministers adopted a norm of three spatial planners, for each corporation. With Increasing complexity this, norm, however seems to be inadequate. By 2001, every corporation may require on an average 5 planners and the total requirement for 73 Corporations would, be as 365. The norm of three planners per Corporation can easily be considered for 1991 as strength of planners is recommended by the Committee of Ministers by 1975 in fact, stands valid for 1990-91 as well.

6.2 Class - I Cities

Besides metropolitan areas there were 213 Class - I cities in India. Many of them have Corporations. In fact only 152 Class - I cities have Municipalities. At municipality level each of 152 Class - I, cities might require one spatial planner for planning and development. Majority of their planning works would be done by local offices of TCPD's.

The number of Class - I cities is expected as 312 by 1991 and 400 by 2001 (Table 4). Number of Corporations might go up to 80 by 1991 and 100 by 2001. Non Corporation cities and municipal cities thus would be 232 by 1991 and 300 by 2001. Each of these municipal cities thus would require one spatial planner, each.

6.3 Class - II Towns

As gathered from the data of number of municipalities (1770, besides corporation) all Class - II towns have municipal bodies. All of them, however may not afford the services of one spatial planner, each, but by 2001, 50 % of them are likely to have one physical planner. Number of such towns is projected as 360 for 1991 out of 230 by 2001. Majority of planning works of these towns, and of the remaining towns, would be looked after by the local offices of TCPD's.

7. REQUIREMENT OF PHYSICAL PLANNERS AT DISTRICT LEVEL

There has been emphasis and need for initiating national planning process at district level. Many exercises have already been done and various, names, have been given for district planning agencies, the most recent one being the Planning and Development Council. These councils do not have provision of spatial planners. In fact in each district there will be need of one spatial

planner in the council. This need is likely to be fulfilled by 2001. Hence taking 439 district (1985) the total requirement for district councils would be 439.

Town and Country Planning Departments also have their strategic district level offices, in each district which at present seem poorly equipped in the matters of manpower. Estimating in a very conservative way there is a requirement of one planner for every two urban settlements in case of urban areas, and one planner for every two *tehsils* for meeting the requirement of regional planning. On an average we can consider 7.5 tensile and 9 urban settlements per district requiring 8 spatial planner for each district. This requirement for the whole country would come as 3512. As district level offices are already existing and some planner are engaged, 50 % of the requirement can be kept for 1991 i.e. 1756. Thus, the total requirement of spatial planner at district level would be 1756 for 1991 and 2195 for 2001.

8. REQUIREMENT OF SPATIAL PLANNERS IN PLANNING SCHOOLS

There are 95 spatial planners involved in eight Planning Schools through out the country (Table - 7) producing 176 Spatial Planners annually. These schools are meeting the present requirements. If we consider that every state employs 5-6 new spatial planners every year, then, by 2001, 4000-5000 additional spatial planners are required needing at least the increase by another 300 planners in the annual output. To meet this demand with conservative estimates, other 100 spatial planners are required in the Planning Schools. This necessitates opening up of new Planning Schools.

Table 7: Spatial Planners in Planning Schools

School / Institute		Number of Spatial Planners
1.	School of Planning & Architecture, New Delhi.	20
2.	IIT Kharagpur, Department of Architecture & Regional Planning	12
3.	University of Roorkee Department of Architecture & Planning.	15
4.	Government College of Engineering Pune, Town Planning Department.	14
5.	Center for Environmental Planning, and Technology, Ahmedabad	11
6.	Guru Nanak Dev University, Guru Ramdas Post-Graduate School of Planning, Amritsar	5
7.	Anna University, Madras School of Architecture and Planning.	8
8.	University of Mysore Institute of Development Studies	10
Total		95

9. REQUIREMENT OF SPATIAL PLANNERS IN PUBLIC SECTOR UNDERTAKINGS

No exact statement is available on the Public Sector Undertaking's employment or likely to employ spatial planners. Committee of Ministers anticipated 50 undertakings, each employing two spatial planners by 1975. At present the situation could be similar to projections for 1975. BY 2001, at the most, the number of such undertakings might go up to 75 each, employing 2 spatial planners each. Requirement of spatial planners for this purpose thus, would be 150 by 2001.

10. REQUIREMENT OF SPATIAL PLANNERS IN CONSULTATIVE PRACTICE

Consultative practice is heavily biased in favour of architecture. For estimating the requirement of spatial planners, therefore, no specific base is available. The Committee of Ministers estimated 400 spatial planners in the profession by 1975. It can however, be assumed that the consultative practice in planning is possible in large metropolitan cities like Delhi, Bombay, Calcutta, and Madras and in other one or two cities. Supposing every city has 10 firms employing 5 spatial planners each, each city would require needs 50 spatial planners in practice. For six cities it comes as 300 which can be considered for 1991. By 2001 it can be assumed that out of 40 metropolitan cities at least 10 would be large enough to support consultative practice. Their requirement by 2001 thus, would be of 500 spatial planners.

Table 8: Requirement of Spatial Planners for 2001

Level	As recommended by the Committee of Ministers up to 1975	Requirement	Requirement by 2001 (Cumulative Including 1991 figures)	Remarks
Central Level				
• Planning Commission	-	3	5	
• Town and Country Planning Organization	75	50	75	
• Other Ministries with outlay for Urban Areas	-	7	21	
Research	50	50	100	
State Level	-	75	125	
• Planning Board	125	336	675	
• Town and Country Planning Department	-	-	175	
• Other Ministries with investment outlays for urban areas	150	200	501	
Regional Level				
Local Level				
• Metropolitan areas	-	997	1161	Committee recommended 5 for each Department
• Corporation	66	221	365	
• Other Class - I cities	85	232	300	
• Class - II towns	75	180	230	
District Level	945	1756	2195	
Planning Schools	50	95	200	
Public Sector Undertakings	100	100	150	
Consultative Practice	400	300	500	
Total	2121*	4602	7075	

11. CONCLUSIONS

Spatial Planning though recognised as significant, has yet been found wanting proper recognition. Emphasis however is mounting. Institutional and Legal changes are being recommended by various Committees and Task Forces. However, with ever increasing level of urbanization, the sphere of spatial planning activities will also increase many fold, therefore in order to meet the future demands, important aspect to be attended at once is the deployment of spatial planners in proper strength at proper levels. Present strength of physical planners is grossly inadequate. There is inadequacy of information as well as on the strength of spatial planners; which hinders their proper estimation for future requirements. Nevertheless using different methods for different levels of deployment of planners, the total strength of 7000 spatial planners (Table - 8) would be required by the turn of the century for effectuating and actuating the spatial planning in a proper way.

REFERENCES

- Ministry of Works and Housing and Urban development Govt. of India (1966). *Report of the Committee of Ministers on shortage of Town Planning Personnel*.
- Center for, Research. Documentation and Training Institute, of Town Planers, India (1990). *Directory of the Institute of Urban and Regional Planning Education in India*,
- Planning Commission, Govt. of India (1983). *Report of the Task Force on Housing and Urban Development*.
- National Commission on Urbanisation, Ministry of Urban Development, Govt. of India, 1988.
- National Institute of Urban Affairs, (1989). *Report on Upgrading Municipal services: Norms and Financial implications*.
- Registrar General, Census of India, New Delhi (undated). *Report of the Expert Committee on Population Projections*.
- World Bank (1989) World Development Report.
- Institute of Town Planners, India (1988) *Role Of Physical Planners in District Planning*, Proceedings of Annual General Body Meeting.
- Nath V. (1989), *Urbanisation and Urban Development in India: some policy issues* International Journal of Urban and Regional Research, Vol. 13, 1989 pp. 257-289.
- Town and Country Planning Organisation, Ministry of Urban Development, Govt. of India (1983) *Regional Planning Efforts in India*.
- Institute of Town Planners, India (ITPI), (1988). *Report and Recommendations of 37th Annual Town & Country Planning Seminar Managing Development at National, State and Local Levels in the Context, of 8th Five Year Plan*.
- Town Planners, Institute of Town Planners India (1986). *Report of the Task Force Professional Matters - Urban Development*.

34 | URBAN DEVELOPMENT MANAGEMENT: ISSUES AND OPTIONS

Abstract

Due to over increasing urban population many issues related with urban development management, has emerged which can be broadly categorized as of planning and development; socio-economic; political and administrative. Each category has various dimensions and one can dwell upon them in any length. In the paper these issues have been described, however the paper observes that due to poor status of urban development management, these issues cannot be resolved instantly. The author is of the view that in the times to come, progress has to be made through, multi-pronged approach covering all aspects, because urbanization is not isolated and singular phenomenon, as it concerns with every aspect of our life.

1. INTRODUCTION

India has been experiencing a very rapid growth of urban population since independence. It grew from 62.44 million in 1951 to 160 million in 1981. Urbanization level was 17.62 % in 1951 which rose to 23.74 % in 1981. During the same period the number of urban centers grew from 2844 to 3248. Projected figures for 2001 for urban population are 350 million, in nearly 4500 settlements taking urbanization level to about 30 %.

The very fact, that the number of urban settlements did not increase as the numerical strength of urban population, proves the excessive growth of existing settlements. This growth further distorted the inherited settlement pattern dominated by 'primate cities' by creating more metropolitan cities. As of today 12 metropolitan cities account for 27 % and 216 Class-I cities 60 % of the urban population.

Efforts for development of urban centers, though continued since the beginning of the plan period, yet were intensified since third and fourth five year plans. More resources were being invested in metropolitan cities. It was, however, realized that the metropolitan cities were growing out of proportion whereas small and medium towns were either stagnating or keeping very slow growth, at times lower than the natural growth indicating the out migration of population. This migration of rural surplus labor and educated mass was heading towards the big and metropolitan cities mainly for better economic fortunes. This trend in shift of population retarded growth of smaller centers. By the beginning of Fifth Plan it became almost certain that to restrict the unprecedented expansion of large, cities, provision of growth impetus was necessary in small and medium towns.

Since the beginning of Sixth Five Year Plan the objective was to contain the growth of large and metropolitan cities byway of creating alternate substitutes in small and medium towns. The National Commission on Urbanization (NCU), has also followed this policy by specially recommending more investment in selected small and medium towns to keep away the low skilled rural migration from metropolitan and large cities.

Follow-ups of above policy, however have not yielded desired results. Urban India has gone deeper and deeper into crises. Polarization trend of urban population is continuing and is expected to continue. Estimates show that by the turn of the century the metropolitan cities will double their number and the category of Class-I cities is expected to house 200 to 250 million people nearly 70 % of total urban population of 350 million in 300 to 400 cities. The situation compels one to brood that:

- The policy as being followed does not seem to have any draw back;
- There are inadequate efforts in following the policy; and
- Development efforts are lacking in proper management.

The trend of urbanization as enunciated above gives an indication of involvement of more than one factor in the management of urban development. Briefly, these are covered in broad three categories, viz., planning and development, socio-economic, administrative and political. To ease out the hurdles of the adopted policy in near future, particularly in the Eighth Plan (as well as in the Ninth Plan) it is necessary to identify them specifically.

2. PLANNING AND DEVELOPMENT ISSUES

Planning and development of urban centers is entrusted to State agencies as it being a State subject. However, existence of Central Urban Development Ministry, Central Town and Country Planning Organization (TCPO) and sponsoring of many urban development programs by Central Government prove the importance of the subject. The importance is sometimes negated by the state governments by either not following centrally adopted policies or having varying policies in different states. The result is the lack of integrated settlement planning policies throughout the country. As a matter of fact there is no national settlement policy. Urban areas lack in hierarchical order putting pressure on large size urban centers. Rural areas are not integrated with urban planning practices. Regional planning remains mostly on papers, Development efforts are made fruit-less under such circumstances. Therefore, adoption of integrated settlement planning approach at national and state levels is essential for proper urban development management.

There are numerous other planning and development issues being faced by urban development management. Many states do not have proper legislations to carryout planned development activities, bye laws are either missing or have become obsolete in present day environment. Wherever the planning activities are being followed, these are too rigid to leave space for new requirements and new technologies, this situation actually under estimate the technological developments. In certain centers the multiplicity of agencies further aggravate the plight of development works.

In the present system there is no proper urban development land policy under which judicious allocation of land can be made to different uses. Besides proper urban information system is required to monitor and assess development at certain intervals.

As a matter of fact the urban development is accorded the least priority in comparison to other development activities, due to which the Town and Country Planning Departments have

been made very weak since their inception. At the town level, town planner has to work under many pressures including administrative and political. This results in substantial non - planning interferences in planning activities which not only mars present day development management but creates problems for future development management as well. State level departments dealing with developmental activities at times neglect the town planning advises, rendered by the planners.

The town planning profession also has in-built problems, for example a particular project of small town goes to head of the department for approval. It is correct that proper level of expertise should go into the project but unnecessary delays should be avoided which generally occurs.

Another problem is greater expectations on returns from the developmental activities of urban areas which are never fulfilled. This failure results in many of the problems like least priority to the profession and weak town planning departments, etc. Realisation must be created in the minds of people that by the way of developing urban areas we are providing / developing resources required for economic development which bear fruits after a slightly long gestation period. For in-stance proper infrastructure provided to people would generate better environment and better working force for the future.

3. ECONOMIC AND SOCIAL ISSUES

Other important group of factors hindering proper management is the economic ones, closely accompanied by social factors. First amongst these is the magnitude of the urban population itself. It is difficult to manage the ever increasing population into urban areas. Migration contributes the most to this increase. Flows are mainly from rural areas, thickened by flows from small urban centers. Destination is always large and metropolitan cities. One estimate puts the migrants in million plus cities as 30 to 60 % of total population.

How the population increase has marred the urban development and management is beautifully described by E.F.N. Ribeiro, Chief Planner, TCPO. He says that 'the growth of cities and towns has been more rapid and the process of planning which allocates the land use rather slow. The result is haphazard and uneven pace and level of urbanisation'. One report by TCPO on urban land use and density patterns concludes that 25 % of urban population lives in high density areas (250 to 1000 per hectare).

Excessive growth of population through migration adds to many other problems. Resources become scarce. More and more population start living in slums. Presently about 30 % urban population is housed in slums. 50 to 70 % of this population are migrants. Urban poverty goes on increasing. More pressure is, then put on scarce resources. NCU reports, as 27.7 % of urban population below poverty line. And as per survey of National Institute of Urban Affairs (NIUA), 1987, 60 % of the population above poverty line was suffering from some form of environmental degradation as population below poverty line. It means 90 % of urban population is affected by low level of family income and unhealthy living conditions. This is the greatest target (hindrance) for achieving a liveable urban environment. How can one go for management

without development prospects? From such magnitude of population in poverty arena, participation in development activities is not expected which again goes against the justifiable development management. Poverty also makes the desire for better environment creating more challenges for planners.

Traditionally, the urban development management has been the task of local bodies, their success need no explanation. Main reason for this is the weak financial position. Explanations could be various. But major obvious one is the urban poverty itself. There is no base for taxation and levies. Rather, whatever, the local bodies get from external resources is utilized in maintaining the staff and existing infra-structure. Creation of Development Authorities under direct control of the States to make capital investments, has further weakened the local bodies. On the top of this the local bodies are found in the grip of political and administrative tangles.

Investment, of whatever extent, in the urban areas is sectoral and each sector is independent of others without giving credentials to spatial aspect. Besides creating problems for urban development management, the sectoral investment benefits little to the population of particular settlement. Studies have shown that location of industries in tribal belts and backward areas have not benefited the local people.

Industrial location, however, is an important element in providing economic base to the urban centers. Industrial development needs infrastructure for itself and for the population it employs. In this process the urban development is given a fillip. But if the infrastructure for the population is not created, which generally happens, the industrial location can create problems for urban development management. Concentration of more industries in already “grown urban centers”, too, adds to management problems.

Informal sector is an important sector of urban economy. This sector as unorganized, is unpredictable regarding its requirements, spatial demands, locations and financial involvements, etc. It poses risks as far as development is concerned. But because it adds substantially to the urban economy it has to be dealt with carefully. Better is to recognise various activities under informal sector and then meet their requirements. This would fetch income as well, for the local body. Unorganized informal sector is hazardous for urban environment.

Inter urban transport and communication gaps too add to development problems. A town near the large city would grow faster because of its location on transport corridor towards larger city. Towns around Delhi have grown faster than other towns slightly away because these were off the important links. Study group on Strategy of Urban Development (1981) too found tremendous growth along main high ways and in areas where electricity is easily available. Comparatively low growth of Madras city observed rapid growth of adjoining area of Chengalpattu District. Poor links, therefore, lead to distorted urban growth and makes urban management rather difficult.

4. ADMINISTRATIVE AND POLITICAL ISSUES

As stated earlier, as per constitution urban development is a State subject, leaving the advisory functions to the Central Government. The situation has led to the lack of political motivation to some extent at the center to solve the urban problems. Many centrally sponsored projects trail to successful execution with great difficulties. This could be one of the reason why central government hesitate to invest big sums in urban areas. Output of the investment is negated when no state governments follows the program after the Central Government tends to leave it with respective state government. The fate of Integrated Urban Development Programme (IUDP) faced the same situation. Central government, therefore, while planning urban investment should keep aside the idea of making the local bodies / state government agencies, to pool their resources to continue the centrally sponsored schemes / programs. The best resort, for the central government is to exert more in the affairs of urban development.

Other major issue under administrative and political head is the lack of coordination and understanding between local bodies and administrators. Continuous tussle leads to supersession of local bodies. This tussle is also visible within some bodies e.g. Development Authorities, over many planning issues. By virtue of our administrative set up, the bureaucratic decisions over rule the technical advises generating environment of frustration and dejection among the technocrats. Prolonged situation force them to succumb to such decisions and to become careless about the real problems of urban development and management which is their subject of specialisation, the crises, thus, deepens.

5. CONCLUSIONS

The ever increasing urban growth has raised many issues related with urban development management, as explained above these are broadly categorised as of planning and development, socio-economic, political and administrative. Each category has various dimensions and one can dwell upon them in any length. The paper however, has described them briefly but, these issues cannot be solved immediately. In times to come, progress however has to be made. Multi-pronged approach is needed covering all aspects, as urbanisation is not isolated and singular phenomenon, it concerns and implicate every aspect of our life. Requirement of development management is, therefore, very demanding.

REFERENCES

- Government of India (1974), *Fifth Five Year Plan (1974-1979)*.
Government of India (1981), *1981 Census of India*.
TCPO (1983), *Urban Land Use and Density Pattern in India*.

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POLICY OPTIONS FOR PLANNING AND DEVELOPMENT OF SETTLEMENTS AND SHELTER TOWARDS 21ST CENTURY

Abstract

The paper observes that the process of planning for settlement and shelter still remains to be geared up to meet the pressing requirements. Efforts of course have been put in, but in a disjointed manner. Physical and Economic Plans are not integrated. Planning activities in general have so far been taken up, on an ad hoc basis, while the challenges, on the other hand have been intensifying. Urban planning is seen requiring broader approach with regional perspective. Population needs to be controlled and growth needs to be channelized. Shelter is becoming scarce due to more and more required of households, besides, the existing infrastructure is also experiencing more pressure. The need, therefore, is to adopt multiplicity of policy options in an integrated way so that by the turn of the century we are able to stand on a more stable footing and have least possible problems / challenges, the paper advocates.

1. INTRODUCTION

Indian urbanization process so far is characterized by lopsided growth of urban settlements with large and metropolitan cities growing beyond expectations. As per 1981 census, about 160 million population lives in urban areas, of which about 42 million (27 %) live in 12 cities with one million and plus population. More than 60 % of urban population lives in 216 Class - I cities, leaving 40 % population in other 3029 urban settlements.

There have been various reasons put forth for this pattern of growth, even though efforts were put on through various Five Year Plans, and Town and Country Planning Departments were created in each State for orderly and planned development of our towns and cities as a result of the initiatives of central Town and Country Planning Organisations. About 1000 Master Plans have been prepared but most of these have not been fully implemented. Large percentage of these plans could not get even legal sanctity. In general most of these plans could not be implemented mainly due to:

- Lack of adequate legal backing;
- Over-ambitious nature of the Plans themselves, underestimating the economic and socio-cultural norms and values, of the existing towns;
- Lack of incorporation of financial and investment plans in the Master Plans, which led to non-integration of the Economic and Spatial Plans;
- The Plans also lacked regional perspective which have been exercising impact on urban development; and
- Lack of resources at the national level for the urban development sector.

The desired results of settlements planning could not be achieved because there was / is no settlements policy framed by Planning Commission or Economic Planners which could fit into the economic or regional or spatial planning frame. Spatial economy is very much related with location and the location has to be in some settlement; hence, settlement policy could very well be adjusted with economic policies. Attempts of course were made but in a disjointed manner

e.g. policy of location of industries in backward areas though effected local / national settlement pattern but was never thought of as its integral part. Economic planners though cannot be spared from the charge of avoiding integration of settlement planning process, yet it was lack of push from physical planners which seems more pronounced, whatever could be the reason.

Physical planning process also suffered from lack of in depth insight practicality in the, approach. Though, there were difficulties of lack of technical personnel, yet whatever plans were prepared those never reflected such shortage. The shortage they reflected was of impractical approach to plan preparation. After survey of analysis, the future demands were estimated and a future land use plan was prepared but no plan suggested as to how it is to be implemented and, what priorities were to be followed. It did not give any investment / fiscal plan which could be fitted into, government budgeting. This factor led to the process of withdrawal of legal backing to Plans and put them into financial problems, and the settlement planning process, as it remained disintegrated,

The Task Force of Government of India on Small and Medium Towns and Cities also states that the planning practice at various levels so far has been characterized by dichotomy of efforts, as if different dimensions of development are unrelated to each other. Unfortunately, the perspectives of both the physical and economic planners tend to bypass any approach to the integrated planning and development of a system of human settlements. This practice led to an unimportant place accorded to physical planning in the forums of National and State Planning Commissions. They seem to belong only to a relatively minor sector of social planning viz., urban development, rather than being essential part of a multi-disciplinary team to provide the all important spatial and regional dimensions.

If this trend of settlement planning continues, the move towards 21st century may not be that smooth. Projections estimate about 300-400 million urban population, with the number of million plus cities expected to be doubled. Every third urbanite will be living in these cities. Urbanisation level is expected to be above 30 % and number of Class - I cities in general is expected to be 300-400, accommodating two-thirds of total urban population. It will not be a rational distribution of urban population, and would lead to an unbalanced settlement pattern.

The share of rural population, on the other hand, will be decreasing and so would be the number of rural settlements, as many would be merged with urban agglomerations and many would become urban by definition. At present, we have varying approaches to rural settlements changing from plan to plan. But future rural settlements would be more economically viable units with mechanization and commercialization of agriculture and hence would require greater integration with urban settlement planning.

Shelter at present is not at all set on any firm footing. Present shortage is estimated at 24 million units. Thirty to sixty per cent of the urban population lives in sub-standard houses and about 40-50 million urbanites live in slums. Households living in sub-standard houses range between 12 million to 13 million in urban areas, 37-70 million in rural areas. Future housing shortage is likely to remain. It is estimated that by 2001 the slum population is to reach between 100 to 125 million. Housing shortage is estimated at 40 million units by 2001, of which 10 million will be in urban areas and 30 million in the rural areas. To meet the housing demand is another challenging task in settlement planning. The need, therefore, is of multiplicity of policy options.

Policy options, therefore are very much related to the type of problems we face, specially:

- The existing settlement system is not following any desired hierarchical order;
- There has not been sufficient efforts to integrate growth of rural and urban settlements;
- Population growth in general is high. It is unexpectedly higher in larger urban centers, moderately higher in middle order settlements and marginally higher in small and medium towns;
- Mobility in the population is lopsided. Major stream is towards larger urban centers. Origin of this stream is mainly in rural and small urban centers;
- All settlements lack basic infrastructure, including housing. It is felt more in larger urban settlements;
- Large part of the population lives in substandard housing conditions. In urban areas the percentage of this population varies from 30 to 60 %. Of 160 million urban population (1981 census) 40 to 50 million still live in slums;
- Economic activities have tendency to be concentrated locationally. This concentration trigger the growth process which is not met with the development of infrastructure facilities;
- Physical planning is found lacking in incorporating economic perspectives and investment plans, rendering physical plans unimplementable. This is the main reason why town planning and regulatory activities have not reached all settlements despite establishment of Town and Country Planning Departments in each state / union territory;
- There is an uniformity in selecting agencies for carrying out developmental activities;
- Local bodies are found lacking in disposing of whatever duties they are assigned because their financial position is invariably weak;
- Settlement and shelter planning activities are handicapped by lack of funds, least priority, lack of adequate research and innovation programs and lack of adequate technical personnel; and
- Environment in urban areas is threatened by many types of pollution. Increasing traffic, concentration of industrial activities, congestion, lack of proper sewerage and drainage, etc., are the main causes of environmental pollution.

The above problems require not one but multiplicity of policies in a coordinated way, if we desire to have a better scenario by the turn of the century. Following policy options are recommended which needs to be pursued continuously and must be framed by the turn of the century.

2. NATIONAL SETTLEMENT POLICY

Distorted settlement pattern and their highly unequal growth patterns caused by migratory population require a long term settlement policy, considering both urban as well as rural settlements. Rural - urban continuum does exist and as such simply evolving urbanization policies will not help. The process has to start from the smallest rural settlement going up to the metropolitan cities in a hierarchical order. The Study Group on Strategies of Urban Development also stressed the need of such a policy, indicating the continuity of present distorted trend if no policy is adopted at the national level.

National policy becomes more important in face of the influence zones of larger settlements cutting across many administrative boundaries. The desired policy should have elements of organised and restricted growth of larger and metropolitan cities, growth impetus to small and

medium towns and development of countryside in terms of providing diversified employment opportunities and service facilities at local points. These focal points with small and medium towns will help in absorbing surplus agricultural labour and will reduce pressure on metropolitan cities. Development priorities of towns / cities thus should be fixed accordingly. The scheme of Integrated Development of Small and Medium Town, and Integrated Rural Development Program are steps towards this policy. Policy, nonetheless should be spelt out clearly. The 23rd Congress of international Society of City and Regional Planners (ISoCaRP), recently concluded, also indicated this policy option for better planning of settlements.

The process of plan preparation for individual settlements should be guided by explicit direction in the Settlement Policy. Physical planners will have to contribute and should be required to comply with regional and national economic plans. Physical plans themselves should suggest ways of implementation. Sequential priority of development works and investment / fiscal plans should compulsorily be incorporated in the Development / Master Plans to make them implementable.

3. POPULATION POLICY

Every activity, including settlement planning and provision of shelter, revolves around population. Its distribution and growth patterns are more related to these aspects. It is, therefore, pertinent to have guided and controlled growth and movements of population. At the present rate the number of Class - I towns / cities are likely to be between 300-400 by the turn of the Century. These will accommodate 200-250 million population. Total estimated urban population will be around 300-400 million. So, nearly 2/3 of the urban population will live in these cities. 12 metropolitan cities are likely to be doubled. It means unless we have strict population policy we will be leading ourselves into more serious troubles related to planning and shelter. Effective population policy will have to be related to economic policies, but would also require measures and controls on the actual growth as well. Mobility with restrictions has to be guided particularly towards metropolitan cities. In Delhi about 60,000 families are added every year which are to be provided with housing. In general terms, migration should be guided; it should particularly be on a restricted scale in the metropolitan cities.

4. REGIONAL PLANNING

As stated earlier, the settlements form a continuum order, irrespective of their hierarchical size. Urban centers cannot be planned in isolation. These cannot actually thrive if planned in separation from country-side. Further, the surrounding countryside and the urban settlement amidst it are functionally related and are to be considered together. If urban centers alone keep on thriving, it will be at the cost of exploited rural areas. The exploited rural areas will one day become parasites for the urban centers and their economy and environment will be seriously affected. Regional perspective in planning thus remains the option as it recognizes different sizes of settlements and their inter-relationships and inter-dependence. Considering city in regional perspective will relieve the city from various unwanted burdens and development of region along with the city, will generate economic activities in the region which again will provide relief to the city from massive immigration. Even making country-wide economic region will tend to develop balanced economic pattern and thereafter a balanced settlement pattern which will ease many planning and development problems. Backward regions, throwing surplus population outward, if developed, would tempt this outgoing population to stay there.

The concept of Urban Region, of course, is well accepted in settlement planning literature. In India, the acceptance of metro-region is the acceptance of urban region concept. The emergence of National Capital Region (NCR) and Bombay Metropolitan Development Authority (BMRDA) for metropolitan Planning is welcome step in this direction but were accepted only after city planning could not cope up with the increasing pressure on the city and region was not developed to accept the urban pressure. Hence, the concept of Regional Planning is to be accepted in settlement planning to ease the pressure of housing in metropolitan and big cities. Regional planning will help in rational distribution of population, and checking excessive growth of big cities.

5. IDENTIFICATION OF UNIFORM PLANNING AND DEVELOPMENT AGENCIES.

The constitutional arrangements make settlement planning and development state subject. This arrangement has resulted in many types of agencies in the field having no uniform pattern. The difference is more pronounced in case of developmental agencies. Each state has a Town and Country Planning Department but with varying degree of powers and functions. In the planning exercise they use different standards, norms and different approaches. Development agencies vary within a state itself. Big cities have Development Authorities to execute the projects whereas in small and medium towns these are either done by PWD or by the local bodies themselves. PWD takes execution charge and works at will as per their own priorities which results either in dropping of the projects or considerable delay in the execution. This problem of development agencies exists in most of the states. These agencies also isolate the particular city from other cities / towns and from countryside as these fall out of their jurisdiction. The need, therefore, is to have uniformity in Town and Country Planning Departments and Development Authorities Agencies in each state. Central department like TCPO can work as coordinating agency.

State departments are also not well-equipped with technical personnel. This is one of the reasons why small and medium towns have not been covered for preparing plans, etc. Local bodies also lack technical personnel. In nutshell, efforts should be made to bring all settlements within the planning process.

6. INTEGRATION OF INDUSTRIAL AND SETTLEMENT POLICY.

Industrial development, particularly its locational aspect, is very much related to the growth of settlements. Wherever these are located, the growth itself picks up, but the provision of infrastructure is never commensurate with the growth. So, as a policy, first, the industries should be located in the areas / settlements needing boost to their economic growth and, secondly along with the industrial expansion necessary infrastructure should also be provided to have planned and orderly settlements. Industrial location also provides economic boost to rural area; so, these too be provided with necessary infrastructural facilities like linkages to the industrial establishments, etc.

The policy of industrial location and urbanisation was linked together as long back as in Third Five Year Plan and is still being followed. Many townships have come up in backward areas. The report of the Study Group on the Strategy of Urban development also reiterates this policy. The report rather laments that despite the importance of locational policies to the pattern of urbanisation the industrial policy hitherto has largely been divorced from urban planning considerations. The report further states that industrial location and provision of urban infrastructure being inter-related, be made part of regional or sub-regional plans.

7. RATIONAL HOUSING POLICY

Shelter is next to food and clothing among the requirements of human beings, yet, so far, it has not been possible to provide proper shelter to every family. It is estimated that at present housing shortage runs to about 24 million units and is expected to go up to 40 million units by 2001. Shortage is more in rural areas but is more pronounced in urban areas. The difference is qualitative, as urban housing is supposedly better than rural housing and hence financially more difficult to be provided for.

Whatever is the qualitative aspect, the fact is that there is shortage of housing stock. The startling fact is that there is no proper record of housing stock as many agencies are involved and these are not even coordinated by any central agency. The need, therefore, is of a proper housing policy which not only tracks the development but also provides means to develop it. At present, about 90 % of the houses are constructed in private sector which shows how little the public sector, participation is in this very important aspect of development of housing. The Housing Policy therefore should attempt to pool the resources if we want to reduce or fill the gap completely by 2001.

Recently, government has come out with a draft Housing Policy which seems to be a leap forward in the direction of making provision. It is understood that the draft makes provision of making arrangements for more and more finances for the housing sector.

In making available houses to more families in urban areas, the rental values and the conditions of letting out and hiring of houses play significant roles. These are governed by Rent Control Act, which so far has not been able to rationalise the rental housing. Modifications thus, are necessary in the Act too, so that neither the landlord nor the tenant is deprived of their due rights.

Necessity is also there of still more stringent and rational land policy to make maximum land available for housing at reasonable rates. Land, of course, is an economic asset but housing is a social obligation of the government. Land policy, therefore, should strive for eradication of speculation in land market which to a great extent, will bring down the prices.

8. RAPID MASS TRANSIT SYSTEM

Transportation routes are termed as arteries of a city. If traffic does not flow smoothly in these arteries the city life will be shattered. In case of Indian metropolitan cities the traffic and transportation problems are on the increase. Principles of speed, safety and time are not being followed. On the other hand, with the growth of cities the number of trips and traffic volume are increasing. Two solutions have to go side by side to solve these problems:

- Introduction of Rapid Mass Transit System; and
- Discouraging the undesired trips within the city by a proper Land Use Plans.

The first one is an essential necessity and is mainly a financial and technological achievements, which ought to be sought; as no other system can solve the traffic problems in the metros. Steps are already on in this direction. Metro railways in Calcutta and announcement of introduction of above surface railway in Delhi are the examples.

The second solution is a planning exercise and should be attempted by planners. Principle of work and living place togetherness is to be followed which is not new to any planner. Shopping centers should also be placed near the residential areas. Concept of multi-nucleicity may also be advisable to follow. Ownership and use of private vehicles needs to be discouraged.

9. POLLUTION CONTROL

Technological advancement has made urban life smoother but polluted. Awareness has risen against increasing pollution in the urban environment. Pollutants of all kinds like noise, smoke, chemical discharges, etc., should be discouraged. Pollution control policy could be made possible with the help of technology, law and planning. Planners add to the policy by making such plans which minimise smoke and noise pollution near residential areas. Technology can also help in designing such vehicles which release less smoke and other pollutant. Law will help in declaring use of defective vehicles illegal. If present rate of pollution continues it will be difficult to stay in metropolitan cities. A concerted effort, therefore, is necessary involving above measures.

10. STRONGER LOCAL BODIES

Local bodies play a very significant role in urban development and management. These are, however, the agencies which are either tagged for inefficiency or found lacking in proper financial base to maintain and manage the urban centers. This fact is more or less appears to be true. But it is being increasingly felt that these bodies should be encouraged and strengthened to play a more constructive role in urban management and development. These bodies are elected ones and closer to people, specifically when people's participation is becoming more and more important. Hence, participation of these bodies in planning, management and maintenance of urban areas should be encouraged as a policy matter. Their financial and technical capabilities should be strengthened by way of allowing them to levy more taxes, providing more grants and loans and availing of services of technocrats.

11. CONCLUSIONS

As a matter of policy the authorities concerned with urban development should always emphasise on use of the new techniques in planning, focusing towards making our process of planning more flexible and adaptable which is not so at present. New researches should be encouraged to make the process more ingenious.

In fact the process of planning for settlement and shelter still remains to be geared up to meet the pressing requirements. Efforts of course have been put in but in a disjointed manner. Physical and Economic Plans are not integrated. Planning activities in general have so far been taken up on an ad hoc basis, while problems on the other hand have been intensifying.

Urban planning is seen requiring broader approach with regional perspective. Population needs to be controlled and growth needs to be also channelised. Shelter is becoming scarce for more and more households. Other infrastructure is being put under more pressure. The need, therefore, is to adopt multiplicity of policy options in an integrated way so that by the turn of the century we are able to stand on a more stable footing and have least possible problems / challenges.

List of 50 Papers Considered for Publication in Volume - II

Sl. No.	Content Number	Journal / Technical Papers / Souvenir		Title of The Paper		Authors
		Source	Details			
1	2	3	4	5	6	
1	1	Journal	1 / 3, 2004	Master Plan of Auroville Universal Township	D. S. Meshram	
2	2	Journal	1 / 2, 2004	Emerging Challenges and Approaches in Urban Planning and Development	D. S. Meshram	
3	-	Journal	1 / 1, 2004	Planning Profession and Education: Challenges Ahead	D. S. Meshram	
4	3	Technical Paper	52 nd NTCPCConference 19-21 December, 2003, Shimla	Planning and Development of Hill Areas: Issues and Options	D. S. Meshram	
5	-	Souvenir	52 nd NTCPCConference 19-21 December, 2003, Shimla	Planning of Hill Areas, in India	D. S. Meshram	
6	-	Journal	21 / 1(184), 2003	Book Review: A Quest for Dream Cities	D. S. Meshram	
7	4	Technical Paper	51 st NTCPCConference 27-29 December, Chandigarh, 2002	Urban and Regional Planning Reforms and UDPFI Guidelines	D. S. Meshram	
8	-	Souvenir	51 st NTCPCConference 27-29 December, 2002, Chandigarh	Urban Development Plan Formulation and Implementation Guidelines: Some Issues	D. S. Meshram	
9	5	Souvenir	50 th NTCPC Conference 27-29 April, 2002 Nasik	Implementation of Development Plans for Good Governance	D. S. Meshram	
10	6	Technical Paper	49 th NTCPCConference 5-7 February, 2001, Hyderabad	Preparation of Urban Maps through Remote Sensing for Sustainable Development	D. S. Meshram	
11	7	Technical Paper	49 th NTCPCConference 5-7 February, 2001, Hyderabad	Information Technology for Urban Planning and Development	D. S. Meshram and M.L. Chotani	
12	8	Souvenir	49 th NTCPCConference 5-7 February, 2001, Hyderabad	TCPO from URIS to Urban Observatory	D. S. Meshram	
13	9	Journal	17 / 2(176), 1998	Strengthening Urban Infrastructure under IDSMT	D. S. Meshram	
14	10	Technical Paper	47 th NTCPC Conference 29-31 December, 1998 Bhubaneswar	Effects of Inadequacies of Infrastructure and Services on Urban Planning and Development	D. S. Meshram and M.L. Chotani	
15	-	Souvenir	47 th NTCPC Conference 29-31 December, 1998 Bhubaneswar	Strengthening Infrastructure in Small and Medium Towns	D. S. Meshram	

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1	2	3	4	5	6
16	11	Technical Paper	46 th NTCP Conference 29-31 December, 1997, Mysore	Urban Development Planning: Agenda for Action	D. S. Meshram and M.L. Chotani
17	12	Souvenir	46 th NTCP Conference 29-31 December, 1997, Mysore	Town and Country Planning Legislation in the Golden Jubilee Year of India's Independence	D. S. Meshram and R.P. Bansal
18	13	Technical Paper	45 th NTCP Conference, 19-22 December, 1966: Thiruvananthapuram	Development Management of Capital Cities	D. S. Meshram and M.L. Chotani
19	14	Technical Paper	44 th NTCP Conference, 31 January - 1 February, 1996 New Delhi	Rural Urban Interface in the Context of the 73rd and 74th Constitution Amendments: An Overview	D. S. Meshram and R.P. Bansal
20	15	Technical Paper	44 th NTCP Conference, 31 January - 1 February, 1996 New Delhi	Rural Development Planning in Retrospect and Prospect	D. S. Meshram and M.L. Chotani
21	16	Souvenir	44 th NTCP Conference, 31 January - 1 February, 1996 New Delhi	Rural Planning and Development: Issues and Strategies	D. S. Meshram and Abdul Qaiyum
22	17	Journal	14 / 1 and 2(164-165), 1995	Interface between Planning Education and Industry	D. S. Meshram
23	18	Journal	13. / 3 and 4(161-162), 1995	Conservation of Manmade Heritage: Some Legal Aspects	D. S. Meshram and R. P. Bansal
24	19	Technical Paper	43 rd NTCP Conference January 30 - February 3, 1995 Hyderabad	Emerging Paradigms of District Planning in the Context of 74th Constitution Amendment Act	D. S. Meshram and M.L. Chotani
25	20	Souvenir	43 rd NTCP Conference January 30 - February 3, 1995 Hyderabad	Planning Legislation in the Context of 73rd and 74th Constitution Amendments: Some Thoughts	D. S. Meshram and R. P. Bansal
26	-	Journal	13 / 2(160), 1994	Parvita Chhetar Vikas Aayojna (Hindi edition)	D. S. Meshram and R. P. Bansal
27	-	Journal	13 / 1(159), 1994	Savindhan 74th Sansodhan Adhiniam (Hindi Edition)	D. S. Meshram
28	21	Journal	12 / 4(158), 1994	Application of Remote Sensing Technique as a Tool for Preparation of Urban Maps for Sustainable Environment	D. S. Meshram
29	22	Journal	12 / 3(157), 1994	Constitution 74th Amendment Act, 1992 and Role of Development Authorities, and Town Planning Departments	D. S. Meshram

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31	-	Souvenir	42 nd NTCP Conference 3-5 January, 1994 Coimbatore	Hill Area Planning and Development: Emerging Issues	D. S. Meshram and R.P. Bansal
32	24	Journal	12 / 2(156), 1993	MRTS for Delhi: Need to Super Impose Proposals of DDA, NCRPB and RITES	D. S. Meshram
33	-	Journal	12 / 1(155), 1993	Legal Provisions for Public Participation in Urban Planning Process with Reference to 74th Amendment Act, 1992	D. S. Meshram and R. P. Bansal
34	25	Journal	11 / 4(154), 1993	Town and Country Planning Legislation: Some Basic Issues	D. S. Meshram and R. P. Bansal
35	26	Technical Paper	41 st NTCP Conference 1-3 February, 1993, Goa	Development and Management of Coastal Areas: Legal and Operational Issues	D. S. Meshram and R.P. Bansal
36	27	Souvenir	41 st NTCP Conference 1-3 February, 1993, Goa	Planning and Development of Coastal Areas	D. S. Meshram and M.L. Chotani
37	28	Journal	11 / 2(152), 1992	Singrauli Regional Development Plan	D. S. Meshram and Abdul Qaiyum
38	29	Journal	10 / 4(150), 1992	Trends and Pattern of Urbanization in India	D. S. Meshram and Abdul Qaiyum
39	30	Technical Paper	40 th NTCP Conference 15-17 January 1992, Pune	Settlement Planning: Issues and Imperatives	D. S. Meshram and M.L. Chotani
40	31	Souvenir	40 th NTCP Conference 15-17 January 1992, Pune	Town Planning Scheme as a Tool for Plan Implementation and Public Participation: Legislative Framework	D. S. Meshram and R.P. Bansal
41	32	Technical Paper	39 th NTCP Conference 8-10 January 1991, Calcutta	Planning and Development of Metropolitan Cities: Need for Metropolitan Decentralization	D. S. Meshram M.L. Chotani

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		Source	Details		
1	2	3	4	5	6
42	-	Souvenir	39 th NTCP Conference 8-10 January 1991, Calcutta	Municipal Structural Reforms in the Context of Metropolitan Decentralization: A Case Study of Calcutta Corporation	D. S. Meshram and R.P. Bansal
43	33	Journal	8 / 3(142), 1990	Professional Requirements of Spatial Planning towards 2001	D. S. Meshram and Shamsher Singh
44	-	Souvenir	38 th NTCP Conference 25-27 April, 1990, Roorkee	Requirements of Spatial Planning Professionals by 2001	D. S. Meshram and Shamsher Singh
45	-	Journal	6 / 4(134), 1988	Settlement Planning Towards 21st Century: Policy Options	D. S. Meshram and Shamsher Singh
46	34	Souvenir	37 th NTCP Conference 28-30 December 1988, New Delhi	Urban Development Management: Issue and Options	D. S. Meshram and Shamsher Singh
47	35	Technical Paper	36 th NTCP Conference 6-9 January 1988, Bhubaneswar	Policy Options for Planning and Development of Settlements and Shelter Towards 21st Century	D. S. Meshram and Shamsher Singh
48	-	Souvenir	36 th NTCP Conference 6-9 January 1988, Bhubaneswar	Planning of Settlements and Shelter	D. S. Meshram and Shamsher Singh
49	-	Souvenir	35 th NTCP Conference February 5-8, 1987, Madras	Integrated Development Small and Medium Towns	D. S. Meshram
50	-	Technical Paper	35 th NTCP Conference February 5-8, 1987, Madras	Provision of Infrastructure under IDSMT	D. S. Meshram

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About Dr. Swati Meshram



Born in Chandigarh - 'The City Beautiful', Dr. Swati Meshram, earned her Bachelor in Architecture (B. Arch.) from School of Planning and Architecture, New Delhi; Master of Environmental Planning (MEP) from Arizona State University, United States; and Ph. D. in Regional Planning from University of Mysore, Karnataka. She also acquired other professional qualifications like Executive Leadership Certificate (ELC) from Cornell University; Leadership in Energy and Environmental Design (LEED AP); as well as Community Real Estate Development Certificate

from Florida Institute of Government of USA.

Dr. Swati Meshram is a member of American Institute of Certified Planner (AICP), and Fellow of Institute of Town Planners, India. She has more than 15 years of experience in Planning and Development. She was Associate Director of Social Media; Vice President of Operations, and Executive Director of 'Save the Water' TM, Plantation, Florida.

Dr. Swati Meshram started her career in USA as GIS technician in Logan Simpson Design Group Tempe, Florida; Associate Planner with Ivey Planning Group, Florida; Associate Planner in Mellgren Planning Group, Davie, Florida; followed by Senior Planner, City of Coconut Creek, Florida; and then switched over to City of Buena Park, California, currently working as Planning Manager.

A creative and keen planning leader, Dr. Swati Meshram is skilled at leading teams in all facets of long range planning and zoning code administration, she empowers others to excel and develops tools to assist with job functions. She is an exceptional partner that collaborates with other governmental agencies and private developers to deliver on project objectives. She also has experience in identifying and garnering significant grants; a skilled contract negotiator and leader with extensive background identifying and working with a variety of consultants, and stake holders.

Dr. Swati Meshram, actively participates in the activities of Institute of Town Planners, India and has contributed many papers in ITPI, Journal, and has also presented papers in Annual Town and Country Planners, Conferences of ITPI.