CHAPTER VI: INTEGRATED METROPOLITAN SPATIAL PLANNING AND SERVICE DELIVERY ON GOVERNANCE FRAMEWORK

6.0. Overview of the Chapter

This chapter discusses integrated metropolitan spatial planning and service delivery on governance framework. Mainly focuses on spatial planning and development, evolution of city planning in India, urban planning in Bangalore - review of master plans, structure plans and interim plans. Followed by service delivery framework, water supply delivery in Bangalore, issues of spatial planning, integrated service delivery for effective implementation water supply services.

6.1. Spatial Planning and Development

In 1976, the Vancouver Declaration on Human Settlements, adopted at the United Nations Conference on Human Settlements (also known as the Habitat I Conference), identified the central role of spatial planning for future urban development, stating that:

“…It is the responsibility of Governments to prepare spatial strategy plans and adopt human settlement policies to guide the socio-economic development efforts. Such policies must be an essential component of an overall development strategy, linking and harmonizing them with policies on industrialization, agriculture, social welfare, and environmental and cultural preservation so that each supports the other in a progressive improvement in well-being of all mankind. A human settlement policy must seek harmonious integration or coordination of a wide variety of components, including, for example, population growth and distribution, employment, shelter, land use, infrastructure and services. Governments must create mechanisms and institutions to develop and implement such a policy.”

As defined by the European Conference of Ministers Responsible for Regional/Spatial Planning (CEMAT), “Spatial planning refers to the methods used by the public sector to influence the distribution of people and activities in spaces at various scales as well as the location of the various infrastructures, recreation and nature areas” 40 “New Urban Planning is a means of negotiating where and how development happens. It is about planning with all sectors of the community with a stake in the place – not only
governments, but also private sector organisations, voluntary agencies and civil society. New Urban Planning fosters voluntary collaboration amongst all these actors. Planning that responds to and works with, not manages or directs, the initiatives of non-governmental actors, will produce better outcomes. This is a departure from the notion that planning is the impartial arbiter of public interest.” (Farmer et al, 2006)41

Space, as the environment, is a not a ‘free’ good but a valuable but limited resource. People and even planners often don’t take into account that ‘space and places’ are not ‘neutral’ objects. Space and places have their own characteristics, logics and values, as well natural as manmade. Space is not ‘a container’ but a dynamic social construct, a becoming (Healey, Hiller 2008)42. In most countries present spatial planning is mainly ‘control-based’, using traditional bureaucratic instruments: legal land use plans, rules, prescriptions and bylaws defining ‘what can and what cannot’. Possibly these instruments were meant (by planners) to create a more sustainable and qualitative world but in fact they only function as a way to ensure spatial legal certainty and the equal treatment of people. There is nothing wrong with these objectives but they are different from ‘our’ goals. Indeed spatial planning and design attempt the realisation of a ‘better space’. It is or should be a pro-active and implementation oriented activity focusing on ‘what should be’ and ‘what can’. This means that there is a need for a shift from ‘regulation’ towards an active sustainable development based upon visioning, action and coproduction and based upon ethical principles equity and social justice (Van den Broeck et al 2010)43.
The Global Report argues that future urban planning must take place within an understanding of the factors shaping 21st-century cities, including:

- the environmental challenges of climate change and cities’ excessive dependence on fossil fuel-powered cars;
- the demographic challenges of rapid urbanization, rapid growth of small- and medium-sized towns and an expanding youth population in developing nations, and, in developed nations, the challenges of shrinking cities, ageing and the increasing multicultural composition of cities;
- the economic challenges of uncertain future growth and fundamental doubts about market-led approaches that the current global financial crisis have engendered, as well as increasing informality in urban activities;
- increasing socio-spatial challenges, especially social and spatial inequalities, urban sprawl and unplanned peri-urbanization; and
- the challenges and opportunities of increasing democratization of decision-making as well as increasing awareness of social and economic rights among ordinary people.


Spatial planning is concerned with “the problem of coordination or integration of the spatial dimension of sectoral policies through a territorially-based strategy” (Cullingworth and Nadin, 2006: 91). More complex than simple land-use regulation, it addresses the tensions and contradictions among sectoral policies, for example for conflicts between economic development, environmental and social cohesion policies. The key role of spatial planning is to promote a more rational arrangement of activities and to reconcile competing policy goals. The scope of spatial planning differs greatly from one country to another, but most share a number of similarities. In almost all countries, spatial planning is concerned with identifying long- or medium-term objectives and strategies for territories, dealing with land use and physical development as a distinct sector of government activity, and coordinating sectoral policies such as transport, agriculture and environment. Spatial planning is critical for delivering economic, social and environmental benefits (box 7) by creating more stable and predictable conditions for investment and development, by securing community benefits from development, and by promoting prudent use of land and natural resources for development.
Box 7: The benefits of spatial planning

**Economic benefits:**
- Providing more stability and confidence for investment;
- Identifying land in appropriate locations to meet the need for economic development;
- Ensuring that land for development is well placed in relation to the transport network and the labour force;
- Promoting environmental quality in both urban and rural areas, which can then create more favourable conditions for investment and development;
- Identifying development that meets the needs of local communities;
- Promoting regeneration and renewal;
- Making decisions in a more efficient and consistent way.

**Social benefits:**
- Considering the needs of the local communities in policy development;
- Improving accessibility when considering the location of new development;
- Supporting the provision of local facilities where they are lacking;
- Promoting the re-use of vacant and derelict land, particularly where it has a negative impact on quality of life and economic development potential; and
- Aiding the creation and maintenance of pleasant, healthy and safe environments.

**Environmental benefits:**
- Promoting regeneration and the appropriate use of land, buildings and infrastructure;
- Promoting the use of previously developed (“brownfield”) land and minimizing development on “greenfield” land;
- Conserving important environmental, historic and cultural assets;
- Addressing potential environmental risks (e.g. flooding, air quality);
- Protecting and enhancing areas for recreation and natural heritage;
- Promoting access to developments by all modes of transport (e.g. walking, cycling and public transport), not just by car;
- Encouraging energy efficiency in the layout and design of development.

**Source:** Spatial Planning - Key Instrument for Development and Effective Governance with Special Reference to Countries in Transition, United Nations, New York and Geneva, 2008
6.2. Evaluation of City Planning in India

The city planning has always been of chief concern since times immemorial. The evidence of city planning has been unearthed in the ruins of cities in China, India, Egypt, Asia Minor, the Mediterranean world, and South and Central America. The concept of town planning is not new to India; from prehistoric Mohenjo Daro, to the imperial city of New Delhi, to Corbusier's Chandigarh, India, The ancient towns such as Pataliputra, Nalanda and Varanasi were built according to well conceived plans. Modern town planning is, however, of recent origin based on western theories and models. Thus we have the ‘Garden City’ model of Ebeneezer Howard (1898), the ‘organic’ concept of a town propounded by Patrick Geddes (1915), the ‘Concentric-Zone’ theory of Ernest Burgess (1925), the ‘Sector Theory’ of Homer Hoyt (1939) and the ‘Multiple-Nuclei’ model propounded by Chauncey Harris and Edward Ullman (1945). The first Town Planning Act was enacted in the United Kingdom in 1909 with the aim of providing “the home healthy, the house beautiful. The town pleasant, the city dignified and the suburb salubrious”. This ideal could never be achieved. Based on the experience of unbalanced development leading to congestion in London and the surrounding areas, and following the recommendations of three Commissions, a new Town and Country Planning Act was enacted in 1947. The concept of Town Planning underwent a complete change and came to include the ‘country’. And then began the preparation of Land Use Plans which subsequently became Development Plans.

The simplest definition of urban planning is that it is the organization of all elements of a town or other urban environment. Spatial planning for cities has “traditionally been concerned with the allocation of land for various uses, the control of development and the installation of infrastructure” (Rakodi, 1993)44. Urban planning may be defined as the process by which the use of land in towns and cities is regulated in the public interest45. The concept of Master Plan is derived from the U.K Town and Country Planning Act of 1947. In India, a Model Town and Regional Planning and Development Law drafted by the Central Town and Country Planning Organization in 1950s served as the basis for enactment of Town and Country Planning Acts by the state governments. During the Third Five Year Plan period (1961-66), the Central Government provided financial
assistance to the state governments to set up Town Planning Departments for preparation of Comprehensive Master Plans for fast growing cities. Since then, the process of preparing Master Plans gathered momentum and by now, over a thousand Master Plans have been prepared across the country (Meshram 2006).^46^ 

Basically, a Master Plan aims at regulating the use of land and promoting the development of an urban area with a view to achieve the maximum benefit for the people. The preparation of the Plan is a statutory process and its scope is defined under the Town and Country Planning Act of each state. Broadly, it includes allocation of land for various uses such as residential, commercial, industrial, recreational, public etc and proposals for development of the city during the plan period, which is usually long-term, ranging from 10-20 years, keeping in view the projected demographic growth.

6.3. Urban Planning in Bangalore

6.3.1. Spatial Planning from colonial period

Bangalore has been an inhabited town since at least 1537. Its importance grew slowly and inconsistently over the years, as various local and regional leaders controlled the area, culminating with the powerful Tipu Sultan.^47^ Events during the subsequent British colonial era left lasting impacts on and help explain aspects of the geography, culture and economics of the Bangalore as it exists today. Even before the defeat of Tipu Sultan, on May 4, 1799, Bangalore was a focal point of British presence in Southern India. In fact, British troops camped around Ulsoor Lake in what is now central Bangalore, training for their decisive attack on the sultan's forces in nearby Srirangapattana.^48^ After the battle, new permanent military barracks were built just outside Bangalore, solidifying Britain's long-term commitment to the growth and stability of the city.^49^ 

As a consequence of the colonial presence, Bangalore developed as nearly two separate cities: the Cantonment (also known as Civil and Military Station, or C & M) where most British and other Westerners lived and carried out business (administered under colonial rule); and the so-called Old City, where Indians lived, under civic control. Consequently, the city was divided across the North-South axis between an older West and a newer East.
There is still some evidence of this division; for example, somewhat redundant main markets and main railway stations in each of the areas are still in use today. A map of the city as it existed in 1924 is included in Map 7.

Map 7: Bangalore in 1924

Source: Murray's Handbook for Travellers, 1924

The division of the city was more than purely spatial: efforts were undertaken to prevent the intermingling of ideas and population between the two areas. Socially, Westerners were dissuaded from visiting areas outside the Cantonment; lower-class Indians were deterred by both the British as well as conservative elders from visiting the Cantonment except in the pursuit of employment or education. The contrast in styles between the...
East and West of the city was strikingly evident: the old city epitomized the very worst in city planning, and nourished disease and death.” However, in the British controlled areas, the street was not simply what was left after houses were set up, but the vital arteries of the city, built for wheeled vehicles and speed striking contrast to the old city area.

Bangalore offers a fascinating case study of the various facets of planned and unplanned growth of an Indian metropolitan city. Founded by Kempe Gowda in the 16th century, as a pete (market) to begin with, in what came to be known as the City area, and a Cantonment established by the British in the 19th century, Bangalore developed as a bipolar city till the middle of the 20th century. Being a growing city, Bangalore has gone through several stages of planned development. As early as in 1889 a committee was constituted for the development of extension. Leading to development of extensions such as Seshadripuram, Chamarajpet, Basavanagudi and Malleswaram. Many more extension such as Fraser Town, Richmond Town, Sankarapuram and V.V. Puram were formed in the first quarter of 20th century. As Ravindra points out, these extensions were formed with provision of open spaces, Civic amenities and regular roads. However, lack of comprehensive approach led to irregular developments in between these extensions.

To address these issues of comprehensive growth of the city, the City Improvement Trust Board was constituted in 1945. The CITB, as an agency for formulating schemes provided nearly 64656 developed plots for residential uses (1945-1976), apart from earmarking areas for civic amenities. Further, in the context of the merger of two cities and the establishment of number of industries leading to very high growth rate in population during the 1940s, a committee was set up in 1952 under the Chairmanship of N. Madhava Rau to formulate comprehensive programmes to preempt chaotic development of the city. The Development Plan including land use proposals prepared by the Committee were followed by the CITB to a certain extent. However, not all proposal were implemented due to legal backing to enforce the plan.

The Bangalore metropolitan Planning Board was setup by the Government to prepare a Master plan for the metropolitan region. The Board prepared an Outline Development Plan (ODP). The Karnataka Town and Country Planning Act, 1961 (KTCP ACT) that
provides a framework for urban planning was adopted in 1961. The planning authority constituted under the KTCP Act, adopted the ODP prepared by the Committee. This ODP, which was approved by the Government in 1972, represented the first step towards a Development Plan for Bangalore

The ODP, prepared for a 15 year period between 1961-1976, covered an area of 500 sq.km. Out of this, 220 sq.km inclusive of already built up area of 114 sq.km was proposed for development as conurbation area and the remaining area of 280 sq.km was designated as rural tract to preserve its rural characteristics. Zoning regulation was formed to implement the plan proposals. Due to delays in Preparation of Comprehensive Development Plan (CDP), the ODP remained in force till 1984. However, due to the growth of the city beyond the Conurbation area as well as the outlined utility of ODP, the plan proposal could be strictly enforced. Ravindra points out the large scale unauthorized development with CITB drawing up its schemes beyond the conurbation area and the Municipal Corporation issuing licenses violating land use and zoning regulation and poor coordination between various agencies such as Planning Authority, the CITB, Bangalore City Corporation, Bangalore Water Supply and Sewerage Board etc.

6.3.2. 1972-2007—Four Master Plans

The planning process in Bangalore is governed primarily by the Karnataka Town and Country Planning Act of 1961 (KTCP Act) but two other statutes, viz, Karnataka Municipal Corporation Act 1964, and Bangalore Development Authority Act, 1976 also have important provisions relating to planning. The KTCP Act required the preparation of an Outline Development Plan (ODP) as an interim measure until a Comprehensive Development Plan (CDP) was ready to replace it. Accordingly, an ODP was prepared by the Bangalore City Planning Authority set up in 1967 and published in 1972. This interim Plan was in force for as long as 12 years when the CDP was published in 1984. In the meantime, the Bangalore Development Authority (BDA) was created in 1976 and was designated the Planning Authority for the Bangalore Metropolitan Area.

The ODP was prepared for an area of 500 sq km of which 265 sq km was the conurbation or the area earmarked for development and the remaining 235 sq km constituted the rural
tract. Under the CDP, the planning area was enlarged to 1279 sq km of which the
conurbation area was 440 sq km while 839 sq km constituted the ‘green belt’ (table 6).

The CDP was revised after a gap of 12 years and the revised CDP while retaining the total
planning area of 1279 sq km, increased the conurbation to 500 sq km and reduced the size
of the green belt proportionately. Taking into account the rapid socio-economic changes,
the government decided to review the CDP and bring out a new plan to suit the
requirements of the 21st century. The BDA appointed a French Consulting company, SCE
to prepare a draft Master Plan. After an elaborate exercise, the SCE submitted the draft
plan in 2004 which was approved by the government with some modifications in 2007.

During the period of 25 years-between the first ODP of 1972 and the Master Plan of 2007,
the metropolitan area of Bangalore increased from 500 sq km to 1300 sq km and the
population rose from 1.7 million to 6 million, resulting in an aerial expansion of 800 sq
km and an addition of 4.3 million people. What is the impact of this kind of growth on the
city and its people? To what extent have the Plans helped shape the growth of the city?

Bangalore is, in many respects, the newest of India’s five largest cities. Delhi is an ancient
Indian capital. Kolkata, Mumbai and Chennai, once Calcutta, Bombay and Madras
respectively, were important ports in the 18th century and had all grown large by the start
of the 20th century. In 1901, when Mumbai and Kolkata both had close to a million
residents and Chennai had 500,000 people, there were only 160,000 people in the larger
urban agglomeration of Bangalore55. The city does have pre-modern history. It was
allegedly laid out in the 16th century, and was an object of conflict between the British
and Haidar Ali in the 1700s, but the city’s rise to importance is a 20th century
phenomenon.
Table 6: Scope of Development Plans for the Bangalore Metropolitan Area

<table>
<thead>
<tr>
<th>Development Plan</th>
<th>Area under the plan (square kilometers)</th>
<th>Total Local Planning Area (sqkm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conurbation Area</td>
<td>Green Belt</td>
</tr>
<tr>
<td>ODP -1968</td>
<td>220</td>
<td>280</td>
</tr>
<tr>
<td>CDP-1984</td>
<td>439.30</td>
<td>839.70</td>
</tr>
<tr>
<td>CDP-1995</td>
<td>564.60</td>
<td>714.40</td>
</tr>
<tr>
<td>Master Plan -2015</td>
<td>786.40</td>
<td>455.00</td>
</tr>
</tbody>
</table>


(* Area under Bangalore Mysore Infrastructure Corridor Planning Authority)

6.3.3. Land-use Changes Bangalore with respect to Built-up and non-built-up area from 1992 to 2006

The spatial analysis was performed at the landscape level extending beyond the Greater Bangalore’s administrative boundary. The classified images for land-use in 1992, 2000 and 2006 are shown in maps 8. The extent of land-use during 1992, 2000 and 2006 comprised built-up with 142.54 sq. km, 186.42 sq. km and 301.27 sq. km respectively. Similarly, the extent of non-built-up area comprising open land, vegetation and water bodies were 1449.35 sq. km, 1405.42 sq. km and 1291.58 sq. km during 1992, 2000 and 2006 respectively. The land-use change analysis was carried out based on the differences in temporal land-uses. During 1992 to 2000, it is observed that the extent of built-up area has increased by 30.8 percent, while the built-up area increased by 61.61 percent during 2000 to 2006 (table 7). The extent of increase in built-up area depicts only the magnitude of change and does not suggest the pattern of this transition. Analysing the probable land-use change from various non-built-up classes to built-up the cross-tabulation for the classified images were performed. It was noted that during 1992 to 2000, the land-use change from open land into vegetation was significant as the data corresponded to different seasons. The major land-use that contributed to the increase of built-up area was
by the open land-use class. Similarly, during 2000 to 2006, the vegetation was the major land-use that was lost (by almost 180 sq. km) due to conversions into built-up areas.

**Table 7: Extent of land use change among built –up and non built-up area in Bangalore**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Built-up area</td>
<td>142.54</td>
<td>186.42</td>
<td>301.27</td>
<td>+30.78</td>
<td>+61.61</td>
</tr>
<tr>
<td>Non Built-up area</td>
<td>1449.35</td>
<td>1405.47</td>
<td>1291.58</td>
<td>-03.03</td>
<td>-08.10</td>
</tr>
</tbody>
</table>

Source: Sudhir H.S
Map 8: Land-use classification - Bangalore (Landsat TM 1992), (Landsat ETM+ 2000) & (IRS LISS-III 2006)
6.3.4. Land use pattern and analysis
The term land use is generally adapted to mean man’s activities, which are directly related
to the use of land as resource. Land use therefore defined as an activity or development
which occupies land for a specific usage purpose. The land use pattern and its continuous
change over the years (Period: 1961 to 2001) are given in Map 9 and Appendix II-2.17
along with the proposed lands use over the years in 1972 to 2015 Map 10 & Appendix II-
2.18.

6.3.4.1. Outline Development Plan (ODP) and Comprehensive Development Plan
(CDP) - 1984
In these plans, standard classification of land use such as the residential, commercial, etc
have been adopted with varying intensities of development based on the zones A, B,C. the
central areas of the city comprised of the old city areas and the newly forming central
business district MG road. The FAR for development in the central areas were maintained
at higher level compared to the Peripheral areas. The lowest FAR was seen at the
Agricultural zone (Green Belt). High rise development began to follow the regulations.
The rate of motorization being low and prevalence of the non motorized transport such as
bicycles, tongas as well as public transportation were not explicit goals to be considered in
the plan. The discussion on urbanization and energy are completely ignored.
Environmental discussion centres on the maintenance of the parks and open spaces and
reservation of parks on private and public lands. The lakes and tanks are not discussed for
the water management or ecological aspects.

6.3.4.2. CDP 1995 for a plan period ending 2011
Between 1985 and 1995, Bangalore witnessed tremendous growth and Land development
driven by speculation and growth in the economy lead to vast tracts of land being
dedicated for industrial and residential development. Though the proposals for the ring
roads, circular rail, use of existing rail systems were envisaged, implementation of the
same were not carried out on the ground. The dependence on the private vehicles and
increase in private vehicles coupled with poor management of traffic on the roads had led
to parking issues, congestion and traffic accidents. BDA as development authority
intended to prepare layouts and distribute sites/plots for housing. Land for development was required to be within the conurbation area.

In response to the immediate issues, the Revised CDP proposed a series of measures. In continuation to the zonal approach in form of Rings, the RCDP planners had decreased the FAR in the centre and spread the higher intensity of development. Though, the FAR was lower in the periphery, BDA and private developers went ahead in making layouts with densities of less than 100 persons per acre. This led to dependence on private transport/vehicular usage. Wide spread and sporadic development of private layouts added in the periphery facilitated by fragmented administration bodies (CMCs, TMCs, Gram Panchayats) led to poor infrastructure development, encroachments and indiscriminate development of land often leading to the decrease in green cover, destroying the tanks and water bodies ecosystem. Adequate conservation measures were not proposed for the tanks and valleys either in the land use maps or regulations. As the percentage of commercial land use allocation and its physical development are not guided adequately, led to widespread commercialization of residential areas. All corridors and roads were impacted by commercial land uses and parking issues. To allow for balanced development, vast open spaces are created by acquiring the lands as regional parks.

**Energy** - As the city structure is radial and the with increased trip lengths increasing, coupled with lack of public transport has led to increase in private vehicles (CTTS 2007). The high intensity land uses were moved to the periphery as the IT, ITES, BT and industrial complexes came up.

### 6.3.4.3. Revised Master Plan 2015

Between the year 1995 and 2005, growth was sustained at 3.25 % annual basis. The city witnessed a demand of 12.0 sq.km of land consumption on yearly basis. Increased motorization, flooding of low lying areas, congestion on the roads, increased fuel costs, shortage of water, shortage of housing and low open space to population were observed as the key points in addition to the poor overall development and deteriorating quality of life.

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**Land use** - The revised master plan lays emphasis on high intensity development by providing higher FAR in central areas and along areas where trunk infrastructure can be extended or where it already exists. The plan breaks away from the zones of A, B, C and recognizes ground realities, demand and supply parameters. The concepts of Mixed Land use with intention of creating work-live environment in new areas and in the existing areas to improve the economic efficiency.

The concept of structure plan lays emphasis on the strategy of integration of land use with the transport offering various options of the Metro, Mono Rail and Commuter Rail System centered on connecting all parts of the city and node development. Non-Motorized form of transport is not adequately found in the plan documents as it envisages all transport to come under the urban transport agency to be formed by the Government.

**Environment** - The city is situated on a ridge delineating four watersheds, viz. Hebbal, Koramangala, Challaghatta and Vrishabhavathri watersheds and has a network of drains, valleys and tanks as part of the drainage system. In 1961, the number of lakes and tanks in the city stood at 262. Official figures for the current number of lakes and tanks vary from 117 to 81, but recent satellite imagery (dated 2003) gives a different picture altogether, showing only 33 lakes visible out of which only about 18 are clearly delineated. The important parks are listed in the Vision document - Master Plan 2015, like, Lalbagh Botanical Garden, Cubbon Park, Bannerghatta National Park, Dhanvantarivana and 365 parks maintained by the Department of Horticulture. The BDA had made mandatory for not less than 15% area be earmarked for Park and open spaces in newly formed layouts.

With remote sensing and advances in understanding the ecological aspects of the lakes and tanks, the RMP 2015 highlights the connections between the tanks in form of valleys and drains along with interconnected lake series. The areas around the tank and tanks are declared non buildable zone allowing for creation of open space as well communicating the strategic intent for protecting the physical environment.

The RMP 2015 establishes a green and blue network for the city and provides opportunity for implementation and further strengthening the network. At the project level, recycling of water is encouraged and has become mandatory.

**Energy conservation** - The RMP 2015 makes the strategic trust of encouraging the public transportation in multi modal manner. A separate and detailed plan for covering transport
issues are covered in the comprehensive traffic and transportation plan. Though the energy is itself addressed through sectoral plans by the respective departments, the vision document envisages power sufficiency through plan and management as well as slew of conservation methods.
Map 9: Existing Land Use 2003 of Bangalore Local Planning Area
Map 10: Proposed Land Use - RMP 2015
Apart from that within Bangalore Metropolitan Region we have Interim Master Plans for the LPAs

6.3.5. Interim Master Plans

The BMRDA had undertaken preparation of Interim Master Plans for the Local Planning Areas of Anekal, Magadi, Hosakote, Nelamangala, Kanakapura and BIAAPA and some of them are approved by the Government. The details are given in table 8.

Table 8: Interim Master Plan in BMR

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<tbody>
<tr>
<td>1.</td>
<td>Anekal</td>
<td>402.30</td>
<td>0.19</td>
<td>1.08</td>
<td>2021</td>
</tr>
<tr>
<td>2.</td>
<td>Magadi</td>
<td>501.52</td>
<td>0.13</td>
<td>0.43</td>
<td>2021</td>
</tr>
<tr>
<td>3.</td>
<td>Hoskote</td>
<td>535.00</td>
<td>0.23</td>
<td>0.33</td>
<td>2021</td>
</tr>
<tr>
<td>4.</td>
<td>Nelamangala</td>
<td>735.00</td>
<td>0.24</td>
<td>0.50</td>
<td>2021</td>
</tr>
<tr>
<td>5.</td>
<td>Kanakapura</td>
<td>412.78</td>
<td>0.17</td>
<td>1.12</td>
<td>2021</td>
</tr>
<tr>
<td>6.</td>
<td>BIAAPA</td>
<td>792.00</td>
<td>0.41</td>
<td>1.50</td>
<td>2021</td>
</tr>
</tbody>
</table>

Source: BMRDA

6.3.5.1. The Interim Master Plan of Anekal Local Planning Area (LPA)

The plan has prepared in the year 2007 for the planning objectives is to achieve a self sustained settlement which would act effectively as a counter magnet to Bangalore city, thereby decongesting the core. The Local Planning Area is about 402.30 sq. km with the existing population of 0.19 million. The IMP is prepared for the planning origin of 2021 a projected population of 1.08 million.

6.3.5.2. Interim Master Plan for Magadi LPA

The vision of interim master plan is “Economic development of the region needs to adapt to local conditions and integrate with socio-economic growth of the existing residents. The development should be linked to integrate the infrastructure in rural and urban areas, giving adequate space for the resident population as stakeholders in the
development process. The LPA consists of 501.52 sq.km, population of 0.13 million (2001) and projected population of 0.43 million for the planning origin of 2021.

6.3.5.3. Interim Master Plan for Hosakote LPA
The Interim Master Plan for Hosakote LPA consists of 535.00 sq.km, population of 0.23 million (2001) and projected population of 0.33 million for the planning origin of 2021.

6.3.5.4. Interim Master Plan for Nelamangala LPA
To integrate the development strategies of BMA and BMR to change the landscape of investment opportunities of BMR, so that the development is appropriately managed in BMA and successfully promoted in BMR. The IMP has adopted the overall vision of the Structure Plan 2011 of BMR. The Interim Master Plan for Nelamangala LPA consists of 735.00 sq.km, population of 0.24 million (2001) and projected population of 0.50 million for the planning origin of 2021.

6.3.5.5. Interim Master Plan for Kanakapura LPA
Improvement of economic conditions and quality of life in the LPA for creating around 2 lakh jobs due to industrial development in the LPA (excluding the Sathanur Township) out of which 40000 persons will be employed from the existing population of the LPA. The Interim Master Plan for Kanakapura LPA consists of 412.78 sq.km, population of 0.17 million (2001) and projected population of 1.12 million for the planning origin of 2021.

6.3.5.6. Interim Master Plan for BIAAPA
Utilizing the opportunity to harness and transform the ribbon and associated unplanned accretion growth into planned and focused nodal center. Considering three towns (Doddaballapur, Devanahalli and Vijayapura) as not only the growth centers influenced by the airport related activities, but also as containment centers of the excess population from the Bangalore Metropolitan Area. The Interim Master Plan for BIAAPA LPA consists of 792.00 sq.km, population of 0.41 million (2001) and projected population of 1.50 million for the planning origin of 2021.
6.4. City Development Plan-JNNURM

This City Development Plan (CDP), prepared for the city of Bangalore in 2006, is a prerequisite for availing financial assistance under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). The area covered under CDP is 1351.1 sq.km and includes BBMP, BDA and BIAAPA. The CDP has estimated the population as 99.68 lakh for the BBMP and non-BBMP area in 2021.

With the vision of retain its pre-eminent position as a City of the future, the City shall enable and empower its citizens with:

- Growth opportunities to promote innovation and economic prosperity;
- A clean and green environment;
- High-quality infrastructure for transport and communication;
- Wide-ranging services aimed at improving the quality of life for all;
- Conservation of its heritage and diverse culture; and
- Responsive and efficient governance.”

An analysis of the various plans operational in the region reflect not only contrary development strategies as in the BMR SP 2011 and the RMP 2015 but also a certain level inherent contradictions, and a lack of coordination and acceptance of the overall policy framework laid out by the BMR SP 2011. Rationalizing these contradictions emerged as the main objective of the BMR RSP 2031.

6.5. Structure Plan 2011 – BMR

In 1997, the Government of Karnataka through Karnataka Urban Infrastructure Development and Finance Corporation Limited (KUIDFC) initiated ‘Preparation of Bangalore Structure Plan 2011’. While considering the BMR, this plan focuses on the immediate environs of the region and located the BMR with its area of 8005 sq kms within the South Karnataka Region (SKR)⁵⁸ which is proposed to be co-terminus with the state divisional administrative boundaries.

The BMR Structure Plan 2011 visualized the BMR and the SKR as strategically and spatially a seamless continuum through the preparation of the integrated BMR and SKR Development Strategy. In the later stages the integrated BMR & SKR Development Strategy Report was split into two separate but strategically inter-locking plans. It was that the SKR Concept Plan was essentially a strategic guidance plan to
which local governments would be encouraged to comply with when formulating their respective district structure plans. In that respect, the planning process for any district in SKR has to be within the framework of SKR Spatial Concept Plan, prepared simultaneously with the previous structure plan. This in turn demands the structure plan of BMR to be in line with the SKR Concept Plan which will avoid policy contradictions within the same region. Though not a statutory plan, the SKR acts as a guide for statutory District Structure Plans in the region.

NUTP has brought the need for integrating urban transport with land-use planning. A recent study has analysed this issue in four cities of India and brought challenges and its implications and case study of TPS is given in (box 8 & 9).

**Box 8: Integrated City Making: Transport and Land-Use Planning**

Integrated City Making was a research study on integration of transport and land-use planning in Mumbai, Kolkata, Delhi and Bangalore. Each of the cities studied by the Urban Age is seeking to integrate land-use and transport planning to secure a more integrated and efficient form of urban development, but all face systematic and behavioral challenges: Rapid urban growth has overtaken the planning process, resulting in reactive and often outdated plans; Enforcement is weak and the planning profession is seen as lacking capacity, leading to loss of credibility; Land-use and transport planning are conducted as separate exercises, leading to new development without transport, and transport infrastructure that fails to further cities long term visions and Responsibility for land-use and transport planning is fragmented between different agencies and different tiers of government, despite recent constitutional changes aimed at rationalizing local government structures. Some implications for future policy development include: Creating a single transport authority and, where possible, integrating this with land-use planning; Ensure implementation through balancing enforcement and negotiation; Create incentives for better integration through funding and political systems; and use urban design for better cities. Through harnessing the dynamism of urban development in India, city leaders can make a difference. With organizational reforms, and the creation of new governance structures that recognize cities role, they can put their cities at the forefront of sustainable growth.

*Source: Urban Age, 2008*. 
Box 9: Town Planning Scheme in Gujarat

The TPS is a two-stage process with the two stages defined in the Gujarat Town Planning and Urban Development Act (GTPUDA) 1976 as a macro-planning stage and a micro planning stage. The Development Authority draws up a statutory, decadal development plan (DP) for the city showing where it is expected to expand into the surrounding countryside. In these new expansion areas, which are usually mosaics of agricultural plots, a network of major roads and routes for trunk infrastructure is also drawn up. In the second stage, the expansion area is divided into a number of smaller areas usually between 1 and 2 sq. km each. The Development Authority takes up each of these smaller areas for the development of a TPS, which is a detailed land reconstitution, infrastructure development, and financing proposal rolled into one.

In Ahmedabad, the Sardar Patel Ring Road was developed in 2002, using the TPS. The proposed ring road is about 76 km long and 60 m wide. Typically, the right of way (RoW) for such roads is appropriated using the land acquisition method. The Ahmedabad Urban Development Authority (AUDA) has used a combination of minimal land acquisition and extensive use of the TPS mechanism. Under the latter, the AUDA proposed reconstitution of the land belonging to affected landowners and assured final plots in rectangular shape near the RoW of the ring road. Only 13.1 km of the total was acquired by the conventional land acquisition method where the TPS could not be declared, namely areas designated as ‘agricultural’ in the Master Plan. Land in an approximately 1 km-wide belt along the Ring Road was reorganised, creating this road. The AUDA spent Rs 130 crore from its own resources for development and obtained a loan of Rs 100 crores from a consortium of six nationalised banks. Out of the total land acquired, 60 per cent was returned to the landowners, 20 to 30 per cent used for the development of public amenities like roads, schools and gardens, and the rest sold as separate plots. Since the land value appreciated, the AUDA earned about Rs 600 crores from the sale of plots.


6.6. Service Delivery Framework

Service delivery is the cornerstone of city governance and includes access to water, trash collection, solid waste disposal, wastewater collection and treatment, and electricity connection. The reliability, quality and cost efficiency of equitable services to all areas of the city — wealthy and poor — is the primary responsibility of local government, and is the most tangible result for which the community will hold their elected officials accountable. This is particularly true as more countries decentralize
With decentralization, the responsibility of closing the gap in service provision among the poor and the wealthy falls to city governments, and this gap is large.

For some services, such as public safety, citizens may want their government to be the service provider. For most services, however, the private and NGO sectors—including user groups and citizen associations—offer advantages of experience, technology and skill. Mechanisms for involving the private sector:

- Contracting out for services, when the ends are more important than the means. If private firms (and NGOs) compete to deliver services and are rewarded appropriately for the results delivered, they are motivated to devise cost-saving technologies.
- Corporatization, when government wants the technical expertise of the private sector to improve management, but wants to maintain overall responsibility.
- Leasing and concessions, when the government is looking for the private sector to take on more financial responsibility and risk. Usually, this means a longer term commitment, from 5 to 10 years for leases and 15 to 20 years for concessions.
- Privatization, when the market is well-developed and the regulatory framework can ensure that fair pricing and adequate levels of coverage will be maintained.

Three broad institutional frameworks are discernible in states in India with regard to water supply and sewerage services. First are the states where the entire system is with a department or a parastatal of the State Government; second, where the ULBs themselves handle the entire activity and, third, as in some large cities, where exclusive water supply and sewerage boards have been set up for the city. Irrespective of the institutional framework, the failure of the public sector to provide adequate service delivery have been ascribed to public monopoly, organizational inefficiency, technical flaws in the form of high leakages, lack of preventive maintenance, unaccounted water as well as over staffing and lack of autonomy. City planning function has not been handed over to ULBs in many states. These state level organizations are often not accountable to ULBs. Though 74th CAA expects that major civic functions should be transferred to ULBs many small and medium sized ULBs are not in position to manage water supply, sanitation and town planning
functions. The Government of Orissa plans to set up a corporatised entity for delivery of water supply and sewerage services in Bhubaneswar city and Greater Hyderabad Municipal Corporation using mobile phones to improve governance (Box 10 and 11).

**Box 10: Transforming Public Health Engineering Organization into a Corporatized entity for in Bhubaneswar**

Under the 74th Constitutional Amendment, the Government of Orissa (GOO) is required to transfer water supply and sewerage services (WSS) to ULBs. At present, the WSS services are provided by the State Public Health Engineering Organization (PHEO). PHEO has been functioning as an arm of State Government in providing WSS services to the public across 103 ULBs covering a population of 56 lakh. In case of Bhubaneswar, Government of Orissa has decided that the assets, liabilities, rights, claims, proceeding etc. of the PHEO circle providing the services to the city would be transferred to the Bhubaneswar Municipal Corporation (BMC). Then PHEO would create a new Corporatised Entity (CE) for WSS services in the city. This CE would be given a management contract by BMC to operate and maintain the WSS services in the city. This contract for CE will include setting service standards, operations cost, subsidy, measurable performance standards, etc. Thus the CE will be able to provide efficient WSS services but be accountable to BMC.

**Source: Personal discussions with Indo-US FIRE Project representatives, 2008.**
The Off-Site Real Time Monitoring (OSRT) system is a unique but simple mobile-based IT initiative by Greater Hyderabad Municipal Corporation (GHMC) to improve the delivery of public services. It uses a combination of Global Positioning System (GPS) and Global Packet Radio Services (GPRS) technologies through cell phones. Online monitoring of solid waste management, maintaining parks and street lights is being done through OSRT. The technology allows cell phones to capture real time images of workers at public sites under inspection with the date and time of the picture as well as the stamp of latitude and longitude alongside the image, superimposed on a Google map layer. The images are instantly transmitted to a central server, and immediately available in the public domain allowing citizen monitoring.

In solid waste management, the attendance of workers has gone up from 85 per cent to 98 per cent, and dumper bin lifting for transporting to transfer stations has increased from 76 per cent to 98 per cent. Citizens’ complaints through SMS go straight to the concerned officer and the ward Corporater. On rectifying the fault, the status is uploaded and the report is posted online. All complaints have to be attended to within 48 hours, and there has been a significant reduction in customer grievances. Penalties for violations are deducted at source from the amount due to the contractor to whom the work has been outsourced.

The building permissions programme was brought under OSRT in November, 2010. Of the 1000 applications received since then, 95 per cent have been disposed of. Permissions for buildings up to 15 meters height (ground floor plus 4 floors, except multi-storey buildings) are given within 4 days. Up to 80 per cent of the applications are in this category. Real time images are taken every 15 days at different stages of construction to check for compliance with sanctioned plans.

The Corporation has invested Rs 48 lakh on the software package and Rs 15 lakh on cell phones. GHMC also pays Rs 2 lakh per month as rental charges for GPRS connectivity. The Corporation’s role has been in providing the enabling infrastructure including cell phones. It charges monthly rentals for use of the cell phones by private contractors engaged in sanitation services. To date, Rs 24 lakh has been recovered from contractors’ bills by way of rentals. GHMC has also collected Rs 27 lakh as fines for shortage in attendance, non lifting of dumper bins and un-swept roads.


**6.6.1. Water Supply Delivery in Bangalore**

To establish the Service delivery framework has been chosen water supply Service Level Benchmarks within the Bangalore Metropolitan Region. Bangalore Water Supply and Sewerage Board (BWSSB) and Karnataka Urban Water Supply and Drainage Board are nodal agencies for providing water supply and management of sewerage system within the BMR.

*History of Bangalore Water Supply* - The first piped filter water supply was started in the year 1896 from Hesaraghatta lake built across River Arkavathi. Prior to the year 1896 unfiltered water was being supplied to the Bangalore in the Karanjee system from a number of tanks such as Dharmambundi, Sampangi, Sankey, Ulsoor etc. Sri. Seshadri Iyer the Dewan of erstwhile Mysore Province thought of providing water supply to Bangalore through a source of perennial character by building a reservoir across river Arkavathi which could store three years supply to the city.

In accordance with the above, the first scheme of protected water supply called ‘Chamarajendra Water Works’ was undertaken in the year 1894, the source of supply being Hessaraghatta Lake on the Arkavathy River. The population was 180000 in 1891 and tank was designed to supply to a population of 250000 with a 57 LPCD with a population increase of 16% per decade, it was then anticipated that the infrastructure would be sufficient to meet the city’s needs for 3 decades since then.

The Hesaraghatta Lake is situated at a distance of 18kms to the North –West of the city. Raw water is drawn from the reservoir viz. 42" dia Hume pipe to the soladevanahally pumping station by gravity and from there through 3 nos. of CI Ppplines (i.e. two to CJF and other to the HMT Factory) water is pumped against an Head of 115 mts to 131 mts. The raw water received at Combined Jewel Filters (CJF) Malleswaram was treated and then supplied to the consumers. However the anticipated population of 250000 was attained by 1922 itself. The inadequacy of supply which had begun to be felt from 1918 became acute by 1925, when Hessarghatta Lake went almost dry for year and a new source had to be thought of by that time.

Chamaraja Sagar Reservoir (Thippagondana Hally) with the drying up of Hessaraghatta Lake in the year 1925, the situation demanded urgent remedial measures for which the Government constituted a committee under the Chairmanship of Sir.M.
Visveswaraiah in the year 1926. After detailed investigation of all possible sources of supply including the rivers Cauvery and Hemavathy etc. The Visveswaraiah Committee recommended the construction of a reservoir on river Arkavathy by building S.S.M. Dam at T.G. Halli 28 kms away from the city downstream of Hessaraghatta Lake to impound 2364 Mcft in the first stage and 3038 Mcft later in subsequent stages.

In Bangalore, three Citizen Report Cards were prepared through a civil society initiative of Public Affairs Centre in 1994, 1999, and 2003. The first report card gave very low ratings to all the major service providers of the city, creating a sense of shame in the process. However, it did not make an immediate impact; only a few of the providers acknowledged their problems and took corrective action. The second report card showed that partial improvement had occurred in some services, probably due to the actions taken by their providers and the pressure from civil society. The third report card that followed after four years revealed substantial improvement in almost all the service providers. There was not only a significant increase in citizen satisfaction with the services, but also some decline in corruption.

According to 2003 Citizen Report Card reveals that the user satisfaction among general households ranged between 96% for Bangalore Metropolitan Transport Corporation (BMTC) and 73% for Bangalore Water Supply and Sewerage Board (BWSSB), Bangalore Municipal Corporation (BMP) and Government Hospitals. Agencies did vary, however, in respect of the proportions of people who have given a rating of “completely satisfied”. While BMTC had the largest proportion of satisfied users, it was Bangalore Electricity Company (BESCOM) which had the largest segment of users expressing “full satisfaction”.

6.7. Issues of Spatial Planning

In many cities of Asia, the decisions about the major activity locations are taken outside the City Master Plans. For example, after the location decision of Beijing Olympics was taken, the Beijing Master Plan was redone to include the Olympics Greens, which by then was already planned. In India, the projects envisaged under the first major national urban renewal programme since independence, namely Jawaharlal Nehru National Urban Renewal Mission (JNNURM), is implemented through the City Development Plans (CDPs), which are essentially city level capital investment plans,
prepared largely independently of the city’s Master Plan. This is because the City Master Plans, as they are made, do not have any financial plan attached to them and have very poor reflection of socio-economic concerns on one hand and hence integration of these concerns on the other hand.

The Master plans have nearly no relationship with the governance structures. Hence, the City Master Plans have very poor implementability. In essence, preparation of City Master Plans become a statutory exercise that freezes lands and makes them unavailable for development and by that declaring large parts of city activities and large parts of city population ‘illegal’ or ‘informal’.

Dr. Ravindra suggested that the city master plan should move beyond land use planning and include economic and social planning. It should do the planning for the economy of the region and the social and educational sectors. For instance, all schools within Bangalore should be transferred to the BBMP under a special board.

For land use planning to be successful and effective, the Metropolitan Planning Committee (MPC) must be vested with the power to control land use. Section 95 of the Karnataka Land Revenue Act, 1964 (KLR Act) needs to be amended to divest the State Government in Revenue Department of this power, and vest it with the MPC. The power to create a Master Plan, within their respective jurisdiction, under the KTCP Act should be conferred on the BBMP and the other ULBs in the BMR. For the areas in the BMR which are governed by rural local bodies, this power may be conferred on the BMRDA which will be accountable to the MPC.

The new set-up would enable the rationalisation of land use planning and granting of various permits for development, currently under several departments. Dr. Ravindra noted that the current laws require that the Revenue Department has to be approached for land conversion (from agricultural to industrial or other uses). This process needs to be rationalised, and the Town and Country Planning Act needs to be amended to give these powers to the MPC.

Noting that there are several planning authorities set up to oversee development in some pockets such as Devanahalli and Bidadi, he said these authorities should be brought under MPC, although specific departments can still carry out sectoral planning. The activities should all be unified under the MPC. The ULBs and the DPC may be given overall responsibility for economic and social planning under the guidance of the MPC. Sectoral planning, cutting across the BMR, having regional implication will have to be carried out by the parastatal organization and departments.
of the state government and overseen by the sectoral divisions within the BMRDA and approved by the MPC.

Post-Parastatals, questionable roles of BATF and ABIDE in defining our futures - Over the past decade however, Karnataka Government has found the time to initiate unaccountable planning interventions through the creation of unconstitutional bodies such as Bangalore Agenda Task Force (BATF) and Agenda for Bangalore Infrastructure and Development Task Force (ABIDE). Members to these elite bodies are appointed by the Chief Minister and not surprisingly more often than not included people from his coterie. Again unsurprisingly, the visions and plans developed by these folks has largely reflected the demands of the upper classes of society based on their rather limited and skewed understanding of the complex processes of urbanisation.

The result has been an endless stream of experimentation, more recently promoted by the peculiar emergence of Advisors and Strategic Urban Advisors. This has resulted in Governments coming up with its own slew of mega-projects to serve their political legacies, often playing to the demands of influential lobbies. Statutory public participation provisions of the KTCP Act have been given a quiet burial in the process. It is in this despairing scenario that the current decision of the High Court comes in as a major relief to the wide public.

Spatial planning is a key instrument for establishing long-term, sustainable frameworks for social, territorial and economic development both within and between countries. Its primary role is to enhance the integration between sectors such as housing, transport, energy and industry, and to improve national and local systems of urban and rural development, also taking into account environmental considerations. Effective spatial planning also helps to avoid the duplication of efforts by actors such as government departments, commercial developers, communities and individuals. Spatial planning is a public sector activity at all levels. Hence a clear distribution of responsibilities is needed between the different levels of administration.

According to Willem Salet, Andy Thornley and Anton Kreukels (2003)\textsuperscript{60}, the formulation of strategic spatial perspective should have coordination at the following three levels.
a) Spatial – to ensure that the different levels of policy, from national through regional and metropolitan to local, are consistent with each other. The policies of the local areas within the metropolitan region also need to be integrated.
b) Functional – the different land uses and activities that combine and interact in a strategy have to be linked, e.g. housing, transport, economic development and environmental sustainability.
c) Sectoral – the intentions and resources of the public, private and voluntary sectors need to be brought together to maximise the coherence of the strategic policy and ease its implementation. This coordination task requires special institutional structures if it is to be fulfilled.

6.8. Spatial Cooperation and Integration of Spaces

The spatial cooperation and integration of spaces is difficult tasks at metropolitan scale. The area of institutionalized political cooperation is not entirely metropolitan: Some areas simply do not have metropolitan functions; others belong to or are strongly influenced by non metropolitan like Tumkur and Kolar districts etc.

At the same time, we can assume that the Metropolitan Area and Metropolitan region are completely covered by the political cooperation space (figure 7). We considered that three kinds of spaces at State Level in Karnataka.

1. **Bangalore Metropolitan Centre (BBMP)** This area which meet the classical indicators of metropolitan functions at most, firstly in an economic sense (labour market, headquarter function etc.). Moreover, political actors also attempt to position ‘their’ region, defining their interests, planning their development paths and starting cooperation with neighbours as well as with other Metropolitan region or even global level.

2. **Bangalore Metropolitan Region (BMR)** comprises the whole area of metropolitan functions, including secondary centers. This addresses exchanges between suppliers and clients, workforce and the activities of institutions which altogether form the metropolitan production system.

3. As we mentioned, the **Political Cooperation Space** of Bangalore Metropolitan Center and Metropolitan Region comprises the territory of institutionalized cooperation spaces. This umbrella term does not pretend overlapping and competing cooperation issues within the multilevel governance; nor does it oversee the interlink ages with the economic context.
Figure 7: Limitations of integration spaces – not automatically congruent

Source: Authors Construct

6.9. Summary

This chapter mainly focuses on integrated metropolitan spatial planning and service delivery on governance framework. The pattern of development, taking place along the periphery of the Bangalore, the analysis is confirming based on review of Master Plans, Interim Master Plans, Comprehensive Development plan under JNNURM, and Structure Plans. The study concludes that if spatial plan (Master Plans) has integrated all stakeholders requirement and stringent enforcement automatically can attain efficient delivery of services to the citizen and governing the city and its region.