

Master Plan for River-centric Urban Planning:

Limits, Potential and Opportunities

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01 Introduction

Urban centres along the Ganga River have emerged as significant contributors to the pollution loads entering the river and its tributaries. This reality has long shaped the response strategies of river cleanup initiatives, beginning with



the Ganga Action Plan (GAP) phases 1 and 2, which primarily emphasized infrastructural interventions such as sewage diversion and treatment facilities. The current Namami Gange Programme (NGP) continues to prioritize these interventions while also expanding the scope to include projects such as riverfront development. However, many of these measures remain orientated towards mitigating the impacts of pollution at the point where it enters the river, rather than addressing the systemic urban sources of pollution more holistically.

The NGP marks a shift in thinking by positioning the problem of river pollution within a broader ecological frame—recognizing cities as integral parts of the river ecosystem. This reframing calls for a more

comprehensive and coherent approach to urban river pollution, beyond isolated infrastructural solutions. In line with this vision, the National Mission for Clean Ganga (NMCG) has initiated the River-City Alliance, aimed at fostering institutional engagement with the urban-river interface through this expanded lens.

This new imagination of urban-river relationships has begun to influence national policy discourse. Urban planning instruments, particularly the Master Plan, are increasingly being seen as vehicles for embedding river ecosystem health within the core of urban governance. The Ministry of Housing and Urban Affairs (MoHUA), through its 2020 guidelines, has underscored the need for integrating river rejuvenation concerns into statutory planning frameworks such as the Master Plan. It is in this regard that statutory tools of urban planning, like the Master plan, gain special significance because they offer to tailor, implement, control and construct the trajectory that the urban centres will follow.

Within the paraphernalia of urban planning in India today, the Master Plan is the only statutory tool to regulate urban growth. The importance of this instrument is reflected in the discussions of policy-makers and planners alike, apart from academia. In a three-day national conference held by the Ministry of Urban Development on 'Alternatives to the Master Plan', the concluding remark was that 'the only alternative to the Master plan was a better Master Plan' (Ansari, 2004).

The importance of this instrument is reflected in the popular literature discussions where every urban problem is either sought to be solved through the master plan, or urban planning itself is held accountable for failing to deliver against the urban challenges. A range of actors expects the Master Plan to address floods, climate change, heat island effects, etc., especially now, with visible effects of climate change. In addition to tackling environmental demands, the Master Plan is also expected to build a socially cohesive city, with inclusion and accessibility not just managed but generated. It is expected of the Master Plan tool to deliver solutions on all fronts, since it is projected as the pin that holds planned urban governance in India together. The Master Plan has the distinct status of being the only statutory planning instrument at our disposal for implementing and directing urban growth, and therefore the master Plan tool gains crucial significance. However, the Master Plan is limited by its structure and therefore implies that any development process sought through this tool carries with it the Master plan's embedded limitations as well.

Master Plan for water-centric urban planning

The Master Plan is crucial for India's water-centric urban planning and practice. Since statutory planning is primarily limited to the instrument of the Master Plan, the planning, protection, and management of urban water bodies like rivers is heavily dependent on the Master Plan's provisions. River management in India has seen segmented interventions at spatial scales: at the river basin scale which covers the entire catchment or at the immediate local scale, in the form of specialised projects. Owing to the scale considered for planning the river, the regional scale for the catchment is forced to compromise on the local urban stretch of the river which nevertheless is integrated to the broader river catchment area. On the other hand, at the local scale, the projects remain specific to the immediate point of intervention. The absence of a city-level river management plan for Indian urban waterscapes has historically contributed to the mismanagement of urban rivers and urban water bodies. It is only recently that the need for planned interventions for urban water bodies has been acknowledged as crucial.

With emerging challenges in India's urban areas, especially in the wake of a growing environmental consciousness related to ecological degradation, water pollution; rivers and other water bodies lying in urban areas, positions India's statutory planning tool in three new Cs - context, capacity and challenges (or, limits, potential, opportunities). However, among the various hierarchy of plans within the planning system, it is the Master Plan instrument which has the potential to accommodate water and river sensitive planning frameworks for meeting the growing water-centric challenges in the urban areas. This can be justified based on the following:

- Master Plan is the sole statutory planning tool at our disposal to effectively target water pollution as a systemic challenge of the urban areas. River related interventions embedded within the Master plan will carry a legal backing, allowing for easy implementation.
- Restoring degraded water bodies and river systems requires sustained long-term efforts. The Master plan with its 20–30 years planning horizon becomes a legitimate anchor to plan and implement such river rejuvenation efforts.
- Holistic river management efforts require coordination within multiple stakeholders, organisations and institutions. The scale of the Master Plan allows for encompassing such multiple sectors and carries the authority to create pathways where different agencies can work together, thereby negating the challenge of institutional silos.
- Since water is a state subject and the Master plans are prepared by state agencies, there is a natural convergence at state level. This can facilitate implementation of the T&CP laws at state level for all its urban centres, which is efficient when basin scale interventions in the river have to be targeted. Instead of the ad-hoc approach to targeting river rejuvenations, Master Plans allow a symmetrical approach at the state and city levels.
- Master Plans also carry citizen participation as a mandate during its preparation and therefore carries the potential to be institutionalised as a democratic process of planning for rivers, essentially enforcing a connection between the river and its people.

Approach and Research Questions

This project is situated within this evolving landscape of policy and planning. It takes the Master Plan—India's fundamental statutory instrument for regulating urban growth—as a critical point of investigation. While debates around the Master Plan often highlight its potential to shape a city's development vision, they tend to overlook the instrument's limitations, both in its conceptual design and institutional practice. Rooted in a legacy focused on spatial order and public hygiene, the Master Plan has evolved as a land-use planning and infrastructure tool. Yet, this narrow orientation limits its capacity to respond to newer imperatives such as inclusive urbanization, gender equity, and river-sensitive planning.

At the same time, the Master Plan's influence on the structure and growth of Indian cities remains unparalleled. It continues to be the most authoritative mechanism for defining urban spatial futures. Accommodating water-sensitive practices for urban areas is an incremental process, but embedding interventions within the city's master plan can prove to be crucial, as it provides the legal mandate to ensure implementation, thereby, driving a transformative impact.

With such a context in place, the objective of this report is to re-examine the potential, limits and capabilities of the Master Plan instrument to support the goals of river rejuvenation. Such an examination of this policy instrument is intended to help better understand how urban areas can be planned to consciously account for its urban water bodies. The research explores the scope of the Master Plan instrument, in its current concept and structure, as implemented in the Ganga Basin States; and whether it can integrate the agenda of water-sensitive urban planning.

With these contours of interest, the report explores:

- What are the practices of river-centric urban planning using statutory instruments such as the Master Plan in India with a special focus on the Ganga Basin States?
- How is the Master Plan, by its conception, limited in addressing the river rejuvenation concerns?
- What are the tools and practices that the Master Planning practice can apply to accommodate water-sensitive planning practices?
- What are the gaps and inadequacies of governance practices that limit the potential of the Master Plan in achieving river-centric and sensitive urban growth?

Scope and Methodology

The report is based on extensive reviews of secondary sources including government reports, planning laws, Master Plans reviews and grey literature apart from an academic literature review. Methods involved included the following:

- Consultative approaches including discussions with expert practitioners.
- Series of talks were conducted to understand how urban water bodies and rivers are positioned within spatial planning framework.
- Review and analysis of the history of the statutory Master Planning process, colonial beginnings till present, with a focus on the Ganga Basin States.
- Analysis of the legal architecture and institutional context of the Master Plan preparation process in the Ganga Basin States.

This has helped identify gaps, limits, and opportunities for accommodating water-sensitive practices into the Master Plan instrument, and has contributed to produce a critical understanding of the history, structure and rationality behind the Master Planning process and instrument; an assessment of the legal and institutional context supporting the Master Plan in the Ganga Basin States.

The report demystifies the rationalities and institutional ecosystems that produces and legitimises the Master Plan. It examines how planning for urban water-bodies and rivers figured within the urban planning discourse in India. The report highlights the misconceptions around the Master plan's ability to act as a panacea for all challenges. The Master Plan as it is structured may be limited in addressing all the challenges related to urban space— for it is archaic, outdated and rigid. The report argues for the need to reimagine the Master Plan instrument in order to accommodate environmental sensibilities. It seeks to inform the emerging discourse on river-sensitive urban planning in India, offering insights and recommendations that can support the NCP and contribute to long-term, systemic transformations in the governance of urban rivers.

02 Key Elements And Instruments In The Master Planning Process

The Master Plan is the statutory tool for urban planning in India. It is a legal document and a crucial policy instrument that regulates and promotes urban development. At its core, the Master Plan is essentially a spatial plan constituting land use allocations supported by bye-laws and Development Control Regulations (DCRs). The plan is prepared under the respective states' Town and Country Planning (T&CP) Act and requires approval of the Parliament for implementation. In doing so, the Master Plan instrument derives statutory authority. Depending on the state act, this instrument can be implemented at various scales: Regional Plan, Zonal Plan, Perspective Plan, Local Area Plan (LAP), etc.

It is important to note that town planning legislations and development authorities' acts differ substantially given India's regional variations and distinct administrative traditions. For instance, while the Bangalore Development Authority was established through provincial acts, state authorities enacted separate metropolitan development authority acts for creating Calcutta and Mumbai Metropolitan Development Authorities. Similarly, Chennai's metropolitan development authority was not created through a specific development authority act but via a T&CP act (Kumar et. al. 2021).

The Master Plan is implemented by the Development Authorities in conjunction with the Municipalities through Zonal Plans, LAPs, Town Planning (TP) Schemes and other special projects. Sometimes the term Development Plan is also used to represent the Master Plan, albeit both have the same function and impose similar controls. The Master Plans are prepared with a target time period of 20 – 30 years.

Very few acknowledge the distinct status of the Master Plan as the sole statutory instrument of governance. The existing scholarship on urban planning either does not engage critically with the potential of the Master Plan as an instrument, or it frequently elucidates the insufficiency of the statutory planning process to deal with existing and emerging challenges of urbanisation in the Global South (Clarke, 1992; Roy, 2005; Watson, 2009; Jain and Korzhenevych, 2020). This limited literature takes the spatial structure of the Master Plan as given, but practitioners and urban theorists alike have pointed out how planning requires to readjust its tools like the Master Plan in order to strategically manage the challenges that urban centres face today (Uttarwar, 2012, Jain and Korzhenevych, 2020).

Spatial Planning framework in the Ganga Basin States

Spatial planning framework in India has a nested hierarchy of plans for urban and regional development. Crucial plans are:

Regional Plan: This plan identifies the region and regional resources for development within which settlement (urban and rural) plan is to be prepared and regulated. The scale for Regional Plans is 1:50,000 - 1:10,000 and is prepared for a time period of 20 years. These plans include Town and Country Planning Act, Municipal Laws, Urban/ Metropolitan Planning/ Development Act, Improvement Trust Act, Industrial Development Act, Cantonment Board Act, Major Ports Act, etc. Often these laws are mutually exclusive, which may lead to planning conflicts and sub-utilization of land (NIUA, 2021, p. 40). The Regional Plan helps to avoid such issues.

Master Plan / Development Plan: This is a statutory Plan for urban areas, prepared under relevant acts. It can include peri-urban areas and Census Towns and lies under control of the Development Authority/ Metropolitan Planning Committee. It is prepared at a scale of 1:10,000 – 1:8,000 and for a time frame of 20 -30 years with revisions every 5 years. The term development plan is also used in lieu of Master Plan, although both have the same function.

Zonal Plan/ Sector plan: Prepared at a scale of 1:8000 - 1: 4000, the zonal plans translate the broad Master Plan into finer detailed land-use.

Town/Development Schemes: These are micro level plans focussing on specific pockets within the Master Plan. They usually cover detailed land use, social amenities and infrastructure layouts/ These are prepared at a scale of 1:5,000 1:1,000.

Layout Plans / Projects: These are specific plans tailored with set thematic objectives and are intended to promote innovation in practice. Prepared at a scale of 1:1000–1: 500, the time frame of these plans ranges between 5 to 20 years.

Different states of the Ganga Basin implement a combination of these plans for urban development. The following table describes the types of plans prepared by the states under the respective town planning legislations.

Type of plans by the state town planning legislation for Ganga Basin States											
Type of Plan with Scale (URDPFI)	Uttarakhand [1973, Uttarakhand Urban and Country Planning and Development Act]	Himachal Pradesh [1977, HP town and country planning act]	Delhi [1957, Delhi Development Act]	Madhya Pradesh [1973, M.P. Nagar Tatha Gram Nivesh Adhiniyam]	Uttar Pradesh [1973, UP Urban Planning and Development Act]	Bihar [2012, Bihar Urban Planning and Development Act]	West Bengal [1979, WB town and country (planning and development) Act]	Chhattisgarh [1973, Chhattisgarh Nagar Tatha Gram Nivesh Adhiniyam]	Haryana [1975, Haryana Development and Regulation of Urban Areas Act]	Rajasthan [2009, RJ Municipal Act; 1959, RJ Urban Improvement Act]	Jharkhand [1981, JH Regional Development Authority Act; 2009 JH Municipal Act]
Regional plan (1:50,000 1:10,000)		Regional Plan		Regional Plan		Regional Development Plan	Land Use-Map	Regional Plan		Land Use Plan	Regional Plan
Master Plan / Development Plan (1:10,000 – 1:8,000)	Master Plan	Development plan	Master Plan	Development plan	Master Plan	Development Plan	Outline Development plan	Development plan	Masterplan	Masterplan	Master Plan
Zonal Plan/ Sector plan (1:8000 - 1:4000)	Zonal plans	Sector Plan	Zonal plans	Zonal plans	Zonal plans	Zonal plans	Detailed Development plan	Zonal plans	Sector Plan	Zonal plans	Zonal plans
Town/Development Schemes (1:5,000 1:1,000)	Town Planning schemes	Town development schemes		Town development schemes		Area Development Scheme	Development Scheme	Town development schemes		Improvement Schemes (MC Act)	Town Planning Schemes
Layout Plans / Projects (1:1000 – 1: 500)			Layout Plan	Layout Plan							Layout Plan

The Ganga basin has 2,76,947 surface water bodies in the form of lakes, ponds, reservoirs, tanks etc. (CWC and NRSC, 2014, p. iii). With rampant urbanisation, these water bodies are exposed to risk of disappearance, pollution and contamination. Given this, spatial planning needs to focus on water bodies as integral to the urban fabric and explore how this renewed emphasis on urban water bodies to target pollution under the NGP can be effectively institutionalised within the dynamics of ongoing urbanisation.

Potential and Opportunities in incorporating River-centric planning

The Master Plan is pivotal in achieving river-sensitive planning, particularly by accounting for the urban stretch of rivers through suitable interventions. Knowledge on the potential and capacities of the master plan in incorporating river-centric planning is grounded in praxis and therefore evolves continuously through the experiential wisdom of practitioners. As a part of this project, discussions with planning practitioners have informed and captured the emerging narratives on water-centric master planning. These include:

- Using zoning, DCRs, TDRs, and SPVs to accommodate water-sensitive planning practices.
- Leveraging LAPs and TPs for protection of urban water bodies.
- By aligning programmatic plans with The statutory Master Plan can embed programmatic plans, sectoral strategies, and national-level policies as well as incorporate special projects.
- The master plan instrument can be a powerful platform for implementing sustained interventions in the governance of urban water bodies, ensuring ecological integration and supporting conservation efforts by treating rivers as 'ecological systems'.

The Master Plan framework accommodates public participation, thereby making it a democratic planning process. The Master Plan has a set of tools and practices which enables accommodating water-sensitive practices for river-centric development. These tools include Development Control Regulations (DCRs), Transferable Development Rights (TDRs) and Land pooling, and Zoning as land-use practices; Special Purpose Vehicles (SPVs); along with the capacity to embed national-level policies, sectoral strategies, and special projects targeted at river rejuvenation.

Master Plans have traditionally focused on aspects such as land use and development control. Development Control Regulations (DCRs) are a key aspect of the Master Plan, intended to restrict the type and extent of growth in specific areas. This involves directing land development and usage, preventing land misuse, and encouraging rational and organised development of the built environment. In recent times, many States and Union Territories have updated their respective regulations based on the Model Building Bye Laws 2016 (issued by the Ministry of Housing and Urban Affairs, 2016).

The interrelationship between master plans and development control regulations (DCRs) is a fundamental aspect of urban planning and governance. The master plan serves as a visionary and statutory document that outlines the long-term development goals, land use patterns, infrastructure requirements, and environmental considerations for a city or region. On the other hand, development control regulations are the detailed guidelines and rules that translate the broader vision of the master plan into specific, actionable requirements for individual developments. For instance, DCRs might specify the maximum height of buildings, the setback requirements from roads, the permissible floor area ratio (FAR), parking norms, and other detailed parameters.

While DCRs standardise urban development, a more context- and scale-sensitive application of DCRs might be applied through the use of preservation zones. These can be useful in managing encroachment and unplanned development activities on the floodplain of the river, in turn promoting controlled development of public spaces and ecologically sensitive practices to protect the urban water bodies.

Also, water is a spatially associated resource and hence the spatial tools of the Master Plan can be usefully deployed to address the challenge of urban water bodies management. The National Mission for Clean Ganga (NMCG) has been advocating such a step to protect urban water bodies. Popular tools of using Master Plan for protecting and managing urban water bodies are the following:

- ▶ One, demarcate water bodies and their catchments and restrict or regulate growth in these zones. The recent Delhi Master Plan is an example where such an attempt has been made.
- ▶ Two, by using Byelaws and DCRs creatively to accommodate urban water protection and management concerns. The Delhi Master Plan 2041 exemplifies the potential of implementing these methods.
- ▶ Additionally, the creative deployment of bye-laws and DCRs speaks to the inherent flexibility that the master plan tool carries.

Floodplain zoning is another important tool that can regulate and restrict development in the ecologically sensitive riverbank areas. Multiple factors can be taken into account while demarcating such zones along rivers. Once the river zone or floodplain is defined for river cities, special development restrictions could be made for the sub-zones that fall inside this environmentally sensitive area. A case in point is the designated zone 'O' of the Delhi Master Plan for managing the Yamuna floodplains. Similarly, the Bengaluru Master Plan has also accommodated water-centric provisions in its Master Plan.

LAPs and TPs can be leveraged for protection of urban water bodies. Whereas the focus of the Master Plan lies on shaping urban growth and laying the pathways of development for the city, the Town Planning Schemes (TPS) and Local Area Plans (LAPs) can accommodate the finer details. TPS and LAPs can be leveraged as critical instruments which translate the broader strategic visions of the Master Plan into implementable actions at the local level. Projects like the Sabarmati Riverfront show TPS and LAPs can be effectively used to operationalise broader goals related to environmental concerns.

A persistent challenge in implementing environmental sensibilities into governance of urban areas arises from the disconnect between statutory and non-statutory planning. The Urban River Management Plan (URMP) was introduced to address this gap through a detailed context-based approach at the scale of a city. The URMPs are designed to accommodate water-sensitive sensibilities in managing the rivers of the cities, which can be embedded into the statutory Master Plans.

National / State level policies and guidance toolkits for river management which provide vision, plans and methods of implementation can also be embedded in the Master Plan thereby ensuring context-specific policies for better river management practices. Localised sectoral strategies like the blue-green continuum and forestry in urban areas can be implemented through the Master Plan. Targeted interventions for the rivers in the form of special projects can be embedded within the Master Plan for high-impact interventions.

The Master Plan is planned for a period of 20-30 years, which makes it a legitimate anchor to enable long-term ecological restoration efforts and river rejuvenation. This time period also allows for the adoption of incremental and phased strategies for river conservation into spatial regulations, like river zoning and floodplain buffers. For example, the Delhi Master Plan 2041 has demarcated the 1-in-25-year flood line and has designated the Yamuna floodplain into zone 'O'. This approach embeds a river-sensitive framework into the spatial planning framework.

Furthermore, the Master Plan is the only statutory tool which can engage with rivers as an ecological system within the urban area instead of the reductive understanding of the 'urban stretch' of the river. Urban water bodies are ecological infrastructure embedded within the urban space. Master Plans can introduce rivers as part of the urban ecological system within the statutory spatial framework.

Finally, the Master Planning process enables the inclusion of public opinions and suggestions before finalisation. Such citizen engagement has the potential to make spatial planning in India robust, people-driven and inclusive. In Chhatrapati Sambhaji Nagar (Aurangabad), the inclusion of communities in designing river zones not only ensured a stronger institutional model but also showed how public participation can be ensured within the Master Plan framework. Similar public consultations have also been conducted for the Delhi Master Plan 2041.

04 Evolution of the Master Planning Process

4.1 Colonial beginnings of spatial planning

Urban planning began in Indian Cities as a statist intervention under colonial rule. The British viewed the ideas of city planning and civic governance through the prism of public health and municipal sanitation (Kumar et al., 2021, p. 52). City planning in India began as a response to tackle disease, specifically the plague that struck Bombay in 1896 and therefore, the areas covered under the planned framework were limited to those areas that held significance for the British Raj—the cantonment, administrative headquarters, industrial areas, the civil lines and port areas. Planned infrastructural provisions included water supply and sewerage networks, roads, and new building complexes (Spodek, 2018, p. 25).

The first attempt to govern the cities was institutionalised through the Improvement Trusts. Modelled on the Glasgow Improvement Trust, the first improvement Trust was created for Bombay in 1898, with an administrative agency responsible for the city's overall development (Hazareesingh, 2001, p. 2021). The Trust functioned on the unique feature of eminent domain to acquire private land for public use, targeting slum demolition as a means of urban renewal and prioritised physical planning (Spodek, 2013, p. 57). The Bombay town planning Act of 1915 gave the Bombay Municipal Corporation powers to prepare Town Planning Schemes (TPS). These TPS called for zoning, building regulations, acquisition of land for public purposes, and the collection of funds for local improvements (Spodek, 2018, p. 28).

Other provinces like United Provinces (1919) and Madras (1920) followed and prepared their Town Planning Schemes, which were further representations of physical planning exercises. These schemes were either under the Municipalities or the Improvement Trusts or in some cases, under both, restricted to improvement schemes within the existing town or new schemes at the periphery (Spodek, 2018, p. 28). For Delhi, the Improvement Trust was established by upgrading the Nazul Office in 1937. The main functions of the Delhi Improvement Trust comprised the development of new political capital, setting up local administration, and overseeing the finances of Delhi (Kumar et al. 2021, p. 66).

As urban planning progressed through Improvement Trusts and TPS in the colonial capitals of the country, the Princely States sought to establish similar Trusts for the planned development of their capital cities. To that end, a number of rulers invited Patrick Geddes to design city plans for their capitals, including Tanjore, Madurai, Balrampur, and Lucknow, among others (Spodek, 2013, p. 60).

A crucial goal of the Trust was to ensure that key urban development powers remained consolidated in the hands of appointed officials (Spodek, 2018), which initiated a split between appointed and elected officials representing Improvement Trusts and municipalities. This model was replicated in all the cities where Improvement Trusts were established for urban governance. This colonial practice initiated the process of multiplicity of authorities, which increasingly became a major issue of governance after independence (Ansari, 2009, p. 52).

Over time, the Improvement Trusts merged into the Urban Development Authority for most of the Indian cities. In some cities like Kolkata, both the urban improvement trust and urban development authorities exist and operate together (Kumar et al. 2021, p. 66).

4.2 Post independence and the role of the Centre in Master Planning

With the simultaneous independence and partition of the country in 1947, cities, particularly Delhi, became central to pressing challenges - managing waves of incoming refugees, demand for supporting a large urban poor population with limited finances. Under such circumstances, the Ministry of Health constituted an enquiry committee for reviewing the working of the Delhi Improvement Trust headed by G.D Birla in 1950. Based on the recommendations of the Birla Committee, the Delhi Development Act was enacted in 1957 leading to the establishment of Delhi Development Authority (DDA). It subsumed the Delhi Improvement Trust and became the sole statutory agency responsible for planning and development activities in the entire national capital. Delhi's example of creating a single authority to undertake both city planning and urban development activities, then, became the model for many other cities in India (Kumar et al. 2021, p. 104). By adopting the Master Plan instrument, Delhi set the precedent for statutory spatial planning in India.

Delhi Master Plan and Delhi Development Authority: The Template for India's Master Plan

The Ministry of Health constituted an enquiry committee in 1950 with the purpose of reviewing the working of the Delhi Improvement Trust. The primary reason for setting up the committee was to study the policy of the Delhi Improvement Trust on matters of housing and high land value in view of rapid population growth (Kumar et al., 2021, p. 104). In response to the Committee report, the Town Planning Office (TPO) was set up by the Central Government in 1955 to formulate the First Master Plan for Delhi. In 1957, Delhi was among the first to act upon it and established a Development Authority for the overall development of the city. Subsequently, it subsumed the Delhi Improvement Trust and became the sole statutory agency responsible for planning and development activities in the entire national capital (Kumar et al. 2021).

Delhi became the first city in India to prepare and adopt a Master Plan. The TPO completed the Master Plan in 1962, marking the beginning of statutory spatial planning in the country. DDA's functions in its early days were restricted to acquiring land under eminent domain, providing a framework to address the haphazard growth in the capital city, and the construction of various development projects. Housing and slum improvement remained the key drivers for constituting DDA. At the same time, Delhi's example of creating a single authority to undertake both city planning and urban development activities became the model for many other cities in India (Kumar et al., 2021, p. 100).

The Delhi Development Bill brought out the tension between the creation of separate institutions for urban development or strengthening of the roles of local municipal authorities. For instance, the Bill regarding the Delhi Development Authority (DDA) was introduced in the Lok Sabha on September 7, 1957, and a Joint Committee was formed to discuss it on September 13, 1957. The committee recommended its passage on November 11, 1957, with some members voicing dissent at the creation of a separate body for Delhi's development agenda. They believed that the initiative for town planning needed to originate locally instead of from the Center and therefore such a step undermined local self-government. This would also mean undermining the elected municipal councillors, weakening municipal governance through a separate urban development body, ultimately leading to centralisation of power in urban governance while eroding local level decision-making.

In 1951, the Institute of Town Planners was created, which was closely followed by the establishment of town planning departments and enactments of planning legislation at the state level. The Town Planning Departments, following the example of Delhi, adopted the Master Plan as the instrument to plan the cities of newly independent India. In the same year, the state of Bihar enacted a Town Planning and Improvement Trust Act enabling local bodies to implement urban development schemes within the framework of an overall Master Plan. In 1954, the state of Bombay comprehensively amended the existing town planning act to include preparation of urban development plans (Kumar et. al. 2021, p. 104).

Even though town planning and urban development remained state subjects, the center exercised significant influence over states' urban policy and programs through five-year plans (Kumar et. al., 2021, p. 100). Five-year plans promoted development of new towns and preparation of Master Plans to address the challenges of urban India. The third plan, for example, defined Master Plans as a coordinating mechanism between different agencies toward 'well defined common objectives pursued systematically over a long period' (Planning Commission, 1961: Chapter 33, para. 4). Promoting new industrial towns, the second plan recommended the preparation of regional plans for areas around new towns and comprehensive development of river valleys for irrigation, agriculture, and power generation. By the end of the Fourth Five-Year Plan, the center was bearing the entire cost of preparation of master plans for the largest cities as 'grant in aid', with the master plan instrument increasingly institutionalised as the statutory tool of planning cities.

The following table brings forward the rationale of the larger economic and the socio-political demand in the initiation of T&CP law and the preparation of master plans in each five year plan (FYP) period till the liberalisation reforms. The Master planning approach acquired new dimensions, beginning with infrastructural planning, which has been discussed in a later section.

Table: Policy focus under Master Plans in the Five year plan period, till the liberalisation reforms

Plan Periods	Key Contributions	Institutional Contributions	Act / Law / Guidelines	Policy Focus in urban areas
1st FYP (1951-56)	Recommended the creation of the National Town and Country Planning Act	Building Institutional Framework to include a national T&CP Act and Housing Boards	Slum Areas Improvement and Clearance Act, 1956	Housing Posited housing as the key problem in urban areas
2nd FYP (1956-61)	Secure planned development by formulating a phased programme for preparation of Master Plans of important towns Formulation of Regional Plans for Industrial and River valley areas.	Formation of Delhi Development Authority	DDA Act 1957	Plan Formulation To achieve a balanced rural and urban regional development. Identified rise in land values, speculative buying of lands in the proximity of growing towns, high rentals and the development of slum areas as challenges for growing urban areas
3rd FYP (1961-66)	Balanced spatial and demographic development by locating new industries far away from cities Adopted the concept of the 'region' in the planning of large industries		Delhi Master Plan, 1962* Report on the Rural – Urban Relationship Committee (RURC), 1965	Balanced Planning Balanced development between large, medium and small sized industries Strengthening rural-urban linkages Physical planning of the use of land, checking rise in urban land values, bulk land acquisition
4th FYP (1969-74)	Creation of large planning regions. Implementation of plans prepared for such regions Creation of small towns and ensuring the spatial location of economic activity in a planned manner		Environmental Improvement of Urban Slums Scheme (EIUS), 1972	Balanced urban growth De-congestion of the metros Population redistribution to smaller towns Evolve a policy for checking the high prices of land by making an urban land policy

Plan Periods	Key Contributions	Institutional Contributions	Act / Law / Guidelines	Policy Focus in urban areas
5th FYP (1974-79)	Introduced measures to control land prices in cities; provided a framework for the development of small and medium towns augmented basic services in cities and towns addressed the problems of metropolitan cities with a regional perspective assisted development projects having national significance in metropolitan cities. Encouraging growth of household and cotton industries under Rural Industrialisation Programme		Task Force on Planning and Development of Small and Medium Towns in 1975, report published 1977	Urban development to be viewed as complimentary to rural development Balanced urban growth: small and medium towns focus Development of small and medium towns with links with their hinterlands Formulation of a National Urban Policy Formulation of Urban Land Policy Emphasized the need for infrastructural development of cities with population over 300,000. Launched the Integrated Urban Development Programme (IUDP) Launched the Sites and Services Scheme
6th FYP (1980-85)	Provision of basic services in urban slums underlined the need to improve environmental conditions in slums through improvement in drainage, sewerage and sanitation Promoted growth in towns with less than 100,000 population through provision of infrastructure and basic services	Planning Commission's Task Force on Housing and Urban Development, 1983 Formation of NCRBP, 1985	Model Regional and Town Planning Development Law, 1985	Continued the focus on development of small and medium towns Focus on infrastructure (through IDSMT) Introduced centrally a centrally sponsored scheme called the Integrated Development of Small and Medium Towns (IDSMT), 1978
7th FYP (1985-90)	Focus on urban infrastructure continued through IDSMT with expanded coverage of more towns under it Interaction between physical and investment planning; Preparation of regional and sub-regional urban development plans.		National Commission on Urbanisation constituted NCU Report, 1988	Continuation of IDSMT Urban Basic Services Scheme, 1986 National Housing Policy Nehru Rojgar Yojana Urban Basic Services for poor (UBSP), 1990

Plan Periods	Key Contributions	Institutional Contributions	Act / Law / Guidelines	Policy Focus in urban areas
8th FYP (1992-97)	linking of the urban development plans with respective district level planning processes linking of programmes of various state level and central departments like agriculture, rural development, environment, telecommunications, industries and other such organizations Urbanisation is accepted as a natural consequence of economic changes.	Expert group on commercialisation of infrastructure projects	The India Infrastructure Report (IIR), 1996 UDPFI Guidelines, 1996	Focus on Rural-Urban Linkage Urban policies to directly support goals of poverty reduction and removal of unemployment and under-employment Launched the centrally sponsored Mega City Scheme, 1993 PM's Integrated Urban Poverty Eradication Programme, 1995 Swarna Jayanti Shahri Rozgar Yojana

Source: TREADS Analysis

4.2.1 The role of the Central Government in formulating the Model Town and Country Planning Acts

Following the establishment of the TPO in 1955 to formulate the First Master Plan for Delhi, the Government of India in 1957, also established the Central Regional and Urban Planning Organization (CRUPO) to: a) formulate a plan for the Delhi Region and b) provide guidance on the development of steel towns, river valley projects, and other aspects related to urban and regional planning. CRUPO commenced its advisory functions in September 1959, offering guidance to various entities, including Central Ministries of the Government of India, the Planning Commission, State Governments, Local Bodies, and Public Undertakings. It is interesting to note that CRUPO organized the first conference of State Ministers dealing with Town and Country Planning paving the way for the preparation of the Model Town and Country Planning Act 1960. This served as an umbrella framework for a country-wide preparation of Master Plans, enactment of town planning legislation and setting up town planning departments in the states and UTs (TCPO Website). Subsequently, Town and Country Planning Organisation (TCPO) was set up in 1962 with the merger of the erstwhile Town Planning Organization (TPO) and Central Regional and Urban Planning Organization (CRUPO) (TCPO Website). This provides a useful entry point to postulate how the state's town planning legislations embodied the provisions of the 'Delhi Model'.

4.2.1.1 T&CP Model Act of 1960 and its evolution

The need for comprehensive T&CP laws was first recognized in the first FYP, prepared by the Planning Commission. In the First FYP, the Planning Commission noted that, 'It is highly desirable that there should be a policy in the matter (of planning) and we recommend there should be a national Town and Country Planning Act' (Planning Commission, 1951). The 2nd FYP also flagged the issues of rising land value, housing crisis, and industrialization and called for the importance of regional planning and preparation of master plans and called for a regional planning in order to locate these issues in a larger context. The broader political economy, the country and the historical context demanded that planning legislation by the states would be an important instrument for housing and slum development in the early days of independent India. In view of this, the central government came up with the Model Town and Country Planning Act, to provide guidance for the individual states to follow and create or strengthen existing institutional structure for urban planning in respective states (Kumar et. al. 2021 p. 105).

The Model Town Planning Act 1960 primarily addressed:

- ▶ Establishment of planning authorities for extensive areas within the state's urban centers, both within and outside municipal limits. In addition, the Model Act outlined the formation of the State Town Planning Board, to advise the state government on planning and local development.
- ▶ Regulating the organized growth of land and development throughout the state, emphasizing the execution of town planning schemes. Under the Act, the government has the authority to designate any area within the state as a local planning area, excluding military cantonment areas. Furthermore, the state government can subdivide the planning area, establishing a special planning authority or a town improvement board to function as the planning authority.
- ▶ The Model Act included provisions for the implementation of Master Plans in order to achieve planned urban growth.

4.2.1.2 The Maharashtra Model and the passage of 1985 Model TCPO Law

Maharashtra was the first state to include 'regional' in its town planning Act. In 1966, Maharashtra enacted Regional and Town Planning Act superseding the 1954 legislation. In addition to enabling the preparation of development plans for urban areas, the act also enabled the creation of regional planning jurisdictions around select industrial centers (Bapat, 1990 as quoted in Kumar et. al., 2021, p. 105). The new Act also attempted to ensure preparation and implementation of Town Planning Schemes (TPS). The objective was to prepare a comprehensive framework within which to detail out town planning schemes for newly developing as well as existing areas (Kumar et. al. 2021). The 1960 Model Act and Maharashtra's precedent of preparing regional plans significantly influenced other states. Notable examples include the Tamil Nadu Town and Country Planning Act, 1971; the Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, 1973; the Himachal Pradesh Town and Country Planning Act, 1977; and the West Bengal Town and Country (Planning and Development) Act, 1979. By the end of 1980, fourteen states had enacted town planning acts. Out of them, ten states enacted its Acts in the 1970s including Jammu and Kashmir, Andhra Pradesh, West Bengal, Haryana, and Mizoram (Kumar et. al., 2021, p. 178) and with this, almost all the states had established a town planning department.

Building on this precedent, the TCPO revised the Model Town and Country Planning Act of 1960 to enact a comprehensive urban and regional planning legislation in all the States and UTs (URDPFI 2015). The TCPO conducted several consultations with the states and studied the existing MRTP Act 1966 to come up with the "Model Regional and Town Planning and Development Law 1985". One of the distinguishing features of the 1985 model law are the provisions of 'preparation of regional development plans giving complete legislative backing by constituting a statutory regional planning and development authority for the preparation, processing, approval, enforcement, execution, and implementation of regional development plans' (NIDM 2004).

The 1985 law provides for the following:

- ▶ Constitution of State Regional and Town Planning Board for the purpose of advising delineation of regions
- ▶ Directing the preparation of metropolitan, regional and area plans by the metropolitan, regional and area planning and development authorities.
- ▶ Setting up of metropolitan, regional and area planning and development authorities for different urban and rural areas within the State to undertake preparation, enforcement and implementation of development plans.
- ▶ Co ordinating the planning and implementation of physical development programmes.

4.2.2 The emergence of URDPFI and NIDM Guidelines: A visible shift in approach towards environmental planning from 1990's

In 1995, a National Workshop on the 'Master Plan Approach: Its efficacy and alternatives' was conducted with the objective of engaging with and critically evaluating the process and implementation of urban development (URDPFI, 2015, p. iii). The National Workshop recommended:

- ▶ Preparation of realistic and effective urban development plans including spatial development plan, resource mobilization plan, institutional mechanism for plan implementation, and simplifications of laws and regulations related to management and promotion of development;
- ▶ Amendments to land use and DCRs;
- ▶ Formulation of guidelines to provide appropriate advice to concerned agencies.

The recommendations elicited a project by ITPI with one key objective: the preparation of UDPFI guidelines applicable to small and medium size towns, and large cities in aiding planned spatial development of urban centers (UDPFI 1996). These guidelines provided a framework for plan preparation and implementation. Another key outcomes of the UDPFI Guideline of 1996 was that it revised the prevailing 'Model Regional and Town Planning and Development Law 1985', in particular to accommodate the legal implications of the 74th CAA, 1992, and instruments for land pooling and assembly, and suggestions for resource mobilization (URDPFI 1996).

Subsequently, with the recognition of newly emerging urban challenges, these 1996 guidelines were revised, upgraded and released as the URDPFI guidelines in 2015. The revised guidelines of 2015 took cognizance of the environmental concerns and prioritized promotion of measures for the conservation of natural resources, mitigation of pollution, and enhancement of green spaces within urban and regional areas. The guidelines also outlined an institutional framework for plan formulation and implementation, including the establishment of planning authorities and mechanisms for monitoring and evaluation. These recommendations were aimed to revise the Model Town and Country Planning Law of 1985, and URDPFI of 1996. Additionally, the 1996 document mostly contained functional classifications – 32, whereas the more recent document contains the first mention of 'mixed use' and 'protective and undevelopable' use categories (Prakash 2024). For instance, AMRUT guidelines introduced 'eco-sensitive areas' as a zone.

To a significant extent, the URDPFI guidelines were directed towards the 'technical' part of the master plans in the form of revised standards, functions and scope of various zones. Prakash (2024) highlights that repeated attempts were made to expand the classification of various land use vis a vis zones. Also, there were visible 'shifts' in the scope of zonal classification in the master plans that were prepared from the 1990's. As observed by Prakash (2024) in part, this shift can be attributed to three significant factors:

- ▶ The emergence of environmental and heritage discourse in India beginning in the 1980s;
- ▶ The opening of the economy in the 1990s, which paved the way for extensive private-sector urban development; and
- ▶ The rise of information technology, which engendered some changes that are beginning to emerge in recent years.

Alongside these developments, in 2003, against the backdrop of increasing disaster risks impacting urban India, the Ministry of Home Affairs set up a Committee to review and propose amendments to the existing Model T&CP Act, 1960 and the Model Regional and Town Planning and Development Law, 1985 (NIDM 2004). The National Institute of Disaster Management was tasked to prepare the report. The Committee primarily proposed amendments to the existing Model Laws by 'incorporating various terminologies pertaining to natural hazards, natural hazard proneness and mitigation under the relevant sections (NIDM 2004).' In the context of such developments, the following key concerns were included within the ambit of the state T&CP legislations:

In the context of such developments, the following key concerns were included within the ambit of the state T&CP legislations:

- ▶ Sustainability of urban development by considering impact of climate change, environment policies and statutory obligation, in the existing state T&CP laws, bye-laws and regulation (URDPFI 2015).
- ▶ Planning for disaster management through appropriate zoning, and various structural and nonstructural measures.
- ▶ Appropriate Planning scale, in particular, aspects of regional planning and plan implementation by deploying various categories of micro plans- zonal plans, development scheme, and local area planning.
- ▶ Technology integration, especially using data and technology for simplification and standardization of planning techniques.
- ▶ Model law called for a consultative and co-ordination Committee at the metropolitan and Regional level and Inter-State Planning.

4.2.3 Post-liberalisation focus on Infrastructural Planning and the diminishing role of the Master Plan

India's political economy and urban governance underwent a series of challenges between 1985 and 2005 which paved the way for initiating reforms at national scale. The early 1990s saw economic liberalisation targeted at growth and integration with the global markets, followed by the 73rd and 74th constitutional amendments which aimed to decentralise urban governance. Urban policy in India increasingly turned towards project-based approaches, which brought in parastatals and private consultants into the midst of spatial planning as a parallel to planning authorities. The amendment of the colonial Land acquisition act enacted in 1894 and the repealing of the Urban Land Ceiling and Regulation Act (ULCRA) of 1976 at central and state levels allowed the access of funds of JnNURM, boosting local and regional property markets, and enabling private developers to conceive of large urban projects, thereby stimulating land development across urban India (Kumar et al., 2021, p. 187).

These changes enabled the State to now promote a number of new policy initiatives, public agencies, city development programs with urban infrastructure as the pivot. Some of these initiatives like the National Housing Policy, 1988, National Housing Policy, 1994, Urban Basic Services Program, 1986, and Urban Basic Services for the Poor, 1990, aimed exclusively at providing housing and basic services for marginalized communities. Programs like the City Challenge Fund, 2003, later renamed as the Urban Reform Incentive Fund (URIF), 2003, were aimed at improving municipal management systems and service delivery.

This marked shift became visible in the FYPs, with infrastructure planning becoming central. The Master Planning process within the FYPs had evolved through three distinct phases since independence. The focus during the first phase remained on establishing a framework for states to legislate T&CP Laws to deal with planned development, with a skewed focus on land acquisition for housing, slum improvement. The second phase increasingly focused on small and medium towns with the objective of decongesting mega cities. Infrastructural planning became central in the third phase, post-liberalisation which focused on CSS and large-scale infrastructure projects.

With progressing reforms, the urban sector in India also saw widespread engagements of the state (in terms of policy, funds and governance), the private sector as well as external international agencies like the World bank. Mega-cities became the focus of financial investments as these were accepted as the catalysts of the country's economic development. Through the mega cities programme, these cities became the base for creation of institutional expertise for planning and for implementation of large urban infrastructural projects. For example, cities like Bangalore and Hyderabad sponsored the development of major infrastructure projects like the HITEC (Hyderabad Information Technology Engineering Consultancy) city catering and the IT and Information Technology enabled services (ITES) sectors, apart from building international airports in conjunction with the private sector. With the inception of new cities like Lavasa and Magarpatta, private investment in infrastructure within city planning deepened. Public private partnership between Yamuna Expressway Industrial Development Authority and the Jaypee Group yielded important road infrastructure projects like 156-kilometer-long expressway connecting the cities of Delhi and Agra.

These transformations provoked the planning practitioners to question the capacity of the statutory Master Plans to shape the spatial form of the cities and their economic development. Amidst such fast changing economic developments and failures of implementation of ongoing master planning efforts, many state level TCPOs occupied themselves in making new comprehensive development plans and amending the existing ones following bureaucratic protocols. For example, both Bombay and Delhi initiated official processes to revise master plans in the mid-1980s (Kumar et al., 2021, p. 193).

Functionally, master plans paid inadequate attention to the provision of trunk infrastructure, environmental conservation and financing issues, the last one rendering them to be unrealistic proposals without budgets. The financial aid from the central government, facilitated through CSS helps in mitigating the financial burden on states and ULBs, enabling them to undertake comprehensive urban planning initiatives. The array of urban development schemes in India, such as SBMG, Smart Cities Mission, JNNURM, and AMRUT, collectively symbolize a comprehensive and dynamic approach to urban challenges.

While TCPOs, regional authorities, and development authorities continued to produce statutory master plans, other public agencies and the private sector continued to produce project plans and sectoral plans for infrastructural development. The Master Plans continued to be sponsored by the bureaucrats, officials and educated classes with minimum involvement of the public. Increasingly, the statutory master plans for cities and regions constituted the only State-sponsored plans within a large array of sectoral plans, project plans and informal plans, ultimately leading to a multiplicity of plans, bringing in the statutory and non-statutory divide.

05 Rationalities binding the Master Plan Instrument

The rationalities validating the master planning instruments are fragmented and archaic, and like its structure and institutions, are different for different states. The need for a master plan was felt immediately after independence, as uncontrolled urban growth manifested itself in the form of haphazard growth, housing shortage and inadequate infrastructure. Citing these urgent challenges, the Delhi Development Act, 1957 was instituted. The Act “empowers the DDA to prepare and implement comprehensive development plans, allocate land for various purposes, and regulate land use to prevent haphazard growth and uncontrolled urban sprawl”. The rationality behind this act was effective land management and instituting a legal framework for planned development.

Uttar Pradesh, recognised that the problems of town planning and Urban development needed to be tackled resolutely. In order to bring about improvement, the State Government considered it advisable that in such developing areas, Development Authorities patterned on the Delhi Development Authority be established. As the State Government was of the view that the Urban development and planning work in the State had already been delayed it was felt necessary to provide for early establishment of such authorities. It was also recognised that “the existing local bodies and other authorities in spite of their best efforts have not been able to cope with these problems to the desired extent”. In light of these, the Uttar Pradesh Urban Planning and Development Act, 1973 was enacted to govern urban planning, development, and land use regulations in the state of Uttar Pradesh.

Uttarakhand adopted the 1973 legislation of its parent state Uttar Pradesh with slight modifications in the form of Uttarakhand Urban and Country planning and Development Act, 1973. The rationality of the Act lies in the importance given to the Local Development Authorities, the power to function.

With rapid urbanisation, fuelled by population growth, Haryana experienced rising demands for infrastructure, housing and other amenities, thereby necessitating planned urban development. Having a well-defined legal framework is also essential for resolving disputes, ensuring transparency in decision-making, and enforcing compliance with development regulations. In recognition of this, the Haryana Urban Development Authority Act, 1977 was enacted.

Rajasthan adopted the Rajasthan Urban Improvement Act, 1959, and Himachal Pradesh adopted the Himachal Pradesh Town and Country Planning Act 1977 in order to improve and plan better for its urban areas. The Act provides for the regulation of land development and expansion of urban areas.

The West Bengal Town and Country (Planning and development) Act, 1979, was enacted to implement development plans for urban and rural areas with the objective of providing and managing infrastructure developments and unplanned growth.

Bihar replaced its older act of 1974 and enacted the Bihar Urban Planning and Development Act, 2012 with a more comprehensive vision of development. The Act sought to address “the challenges of planned and sustainable urban development, environmental conservation, equitable distribution of resources, public participation, and controlled land use by providing for better control and governance by appointing a Board, which further appoints a Planning Authority (which is the prime authority on preparation of development plans in Bihar).”

Madhya Pradesh and Chhattisgarh were guided by similar rationalities when they enacted the Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, 1973 and the Chhattisgarh Nagar Tatha Gram Nivesh Adhiniyam, 1973. The acts sought to provide provisions for planning and development and use of land. It sought to make better provisions for the preparation of development plans and zoning plans with a view to ensuring that town planning schemes are made in a proper manner and their execution is made effective and to constitute Town and Country Planning Authority for proper implementation of town and country development plan. The act makes a provision for the development and administration of special areas through the Special Area Development Authority, in order to facilitate the compulsory acquisition of land required for the purpose of the development plans.

Jharkhand instituted the Jharkhand Municipal Act, 2011, to consolidate and amend the laws relating to the Municipal Governments in conformity with the provisions of the Constitution of India, as amended by the Constitution (74th Amendment) Act, 1992. The act is based on the principles of participation in, and decentralization, autonomy, and accountability of, urban self-government at various levels, to introduce reforms in financial management and accounting systems, internal resource generation capacity, and organizational design of municipalities, to ensure professionalisation of the municipal personnel, and to provide for matters connected therewith or incidental thereto.

5.1 Evaluation of the Tools and Instruments of the Master Plan Instrument in accommodating water-sensitive planning provisions

India's spatial planning framework with its statutory Master plan instrument is well-equipped to address contemporary environmental challenges that urban areas are increasingly facing. However, there are systemic challenges within the structure of the instrument, within the institutional ecosystem that governs the Master plan coupled by procedural inefficiencies which have hindered the ability of the Master Plan in protecting and managing critical environmental resources like the urban water bodies.

5.1.1 Local area Plans (LAPs) and Town Planning schemes (TPs)

While the Master planning framework should ideally serve as a strategic framework to guide overall city development, many plans dive too deeply into finer details at an early stage which slows this process to a crawl. The result is that it takes years to complete a master plan which should have been completed within months. The Master Plan should essentially focus on laying out crucial pathways of development—such as land-use zones, networks of infrastructure, perspectives of growth and actions, while the finer design details should be accommodated at the next scale of planning, through the Town Planning Schemes (TPS) and Local Area Plans (LAPs). TPS and LAPs can be leveraged as critical instruments which translate the broader strategic visions of the Master Plan into implementable actions at the local level.

Projects like the Sabarmati Riverfront show TPS and LAPs can be effectively used to operationalise broader goals related to environmental concerns. However, merely transplanting such models into other cities without accounting for adaptation to local contexts and challenges might lead to challenges apart from ineffective implementation, thereby highlighting the need for context driven planning.

5.1.2 Usefulness of zoning, DCRs, TDRs, SPVs

The tools of the Master Plan can be effectively deployed to protect urban water bodies. Development Control Regulations (DCRs), Transferable Development Rights (TDRs), Zoning, Special Purpose Vehicles (SPVs) can be creatively applied in planning for and governing urban water bodies.

While DCRs standardise urban development, a more context and scale sensitive application of DCRs might be useful. The use of preservation zones can be useful in managing encroachment and unplanned development activities on the floodplain of the river in turn promoting controlled development of public spaces and ecologically sensitive practices to protect the urban water bodies.

Floodplain zoning has emerged as a powerful regulatory and preservation practice, case in point being the designated zone 'O' of the Delhi Master Plan for managing the Yamuna floodplains. Similarly, the Bangaluru Master Plan has also accommodated water-centric provisions in its Master Plan. However, floodplain zoning has also faced crucial challenges. The mapping of floodplains in India is often inadequate which problematise implementing zoning regulations for protection of the rivers. Additionally, private ownership of such lands, political interests in riverfront lands exacerbate the implementation of floodplain zoning.

Although regulations such as the Floodplain Zoning Bill of 1975 exist, the implementation has been inconsistent. Such regulatory vacuums in spite of having the Bill in place has resulted in unplanned developments, encroachments, garbage dumping etc., leaving urban waterbodies vulnerable to ecological degradation.

SPVs can be used as an institutional platform to achieve better co-ordination within organisations in order to support developments around rivers. The Sabarmati Riverfront development project is an example of effective use of the SPV targeting better management of the Sabarmati.

The TDR has also emerged as an innovative policy solution to protect urban water bodies as it raises revenue for ULBs. In India, the TDR has found applications in Mumbai, Hyderabad, Bengaluru and Ahmedabad, for the purposes of 'slum rehabilitation, heritage conservation, public housing redevelopment projects; and for conservation of lakes' specifically in Hyderabad. In Hyderabad, the TDR has been instrumental in extending protection to urban water bodies through conservation of lakes, nalas foreshores and recreational buffer development with greenery. The land exchange policy implemented in Daman & Diu, which secured public access to riverfronts also depicted the creative deployment of instruments like TDRs. Similarly, storm water credits could also be implemented to promote water-sensitive spatial planning.

5.1.3 Master Plans in their current form are challenged by rigid frameworks, legislative obsolescence and institutional fragmentation.

Traditional Master Planning in India are essentially land-use plans focused on regulation of land and provision of infrastructure, which is inadequate to address environmental challenges that urban areas of India are increasingly facing. The Town and Country Planning (T&CP) Acts are the legal foundation upon which the Master Planning framework functions. The T&CP legislations, enacted by the states on the basis of the Model Acts of 1960 and 1985, are often criticised for being rigid and outdated for the embedded planning instruments framework. The rationalities behind these acts are hardly informed by emerging environmental concerns which have translated into master planning frameworks which are not capable of integrating ecological conservation, climate risk reduction mechanisms and water-sensitive development.

A comprehensive revision of the T&CP Acts as a necessity has been increasingly realised within the domain of praxis. A suggestion was to form apex committees which would be tasked with taking regular reviews of the urban planning legislations thereby addressing the challenges in spatial planning by adapting planning practices to technological and environmental challenges. Such a revision process is already underway in some states. For instance, Bihar has already included provisions for metropolitan and rural planning in its framework, Uttar Pradesh's draft T&CP Act has been opened for public feedback. There is also a need to ensure public consultation in revising the T&CP Acts.

The Master Planning framework as it is implemented and practised has also deviated from its original visions as enshrined in the Delhi Master Planning process. DDA, in its 1963 amendment act, tried to rectify this issue by including a provision for modification of Master plan and Zonal development plans (Section 11A, DDA 1957). But it only allows revision to the plans as DDA thinks fit, without any alterations in the character of the plan, which do not relate to the extent of land uses or the standards of population density. The current T&CP legislations do not take into account the uncertainties that would inevitably occur over a period of years (Phatak, 2004). This creates a dilemma for the optimal approach to centrality vs. flexibility among the legislations and the master plans.

Pronounced institutional fragmentation has also led to an ad-hoc governance with crucial sectors like water management, environmental regulations, pollution etc. governed in silos. Colonial-era acts like the Easements Act of 1882 continue to govern the use of groundwater, which links access to ownership, in turn undermining the principles of governing groundwater as a public good. Additionally, there have been instances where judicial interventions have stepped in to address regulatory inefficiencies, which again can only serve as temporary solutions. Given such structural rigidities, outdated legislative frameworks and institutional fragmentation, the Master planning framework fails to emerge into a framework capable of accommodating water-sensitive provisions.

5.2 Rise of Non-statutory (Programmatic) Planning

In the face of increasing challenges facing the urban areas, there has been a clear shift in policy from comprehensive development to an approach that incorporates environmental considerations, primarily through programmatic plans. Three distinct phases show the rise of programmatic plans.

5.2.1 The first phase: From 1970s with growing urbanization, the principal focus of the planners and the policymakers had been the national response to urbanization comprising two main strategies: planned interventions (such as the development of satellite towns) aimed at decongesting the largest cities and attempts to deflect the growing urban population to small and medium-sized cities through centrally sponsored programs like the Integrated Urban Development Programme (IUDP) and Integrated Development of Small and Medium Towns (IDSMT). Since both programs entailed a regional focus, newly established metropolitan development authorities began making plans for fast growing urban regions around large cities like Calcutta, Kanpur, Mumbai, and Madras (Kumar et. al., 2021).

The Fifth and Sixth Five-year Plans set aside specific funds for the Integrated Urban Development Program, later renamed Integrated Development of Small and Medium Towns (IDSMT). Similarly, several states created metropolitan authorities, like the Madras Metropolitan Development Authority and Calcutta Metropolitan Development Authority, for the preparation of metropolitan regional development plans with jurisdiction over municipalities and local governments adjoining central cities. However, the outcome of the IDSMT was largely unsatisfactory. Criteria for the selection of towns and cities for funding under the IDSMT included population size of urban settlements capped at 500,000, state governments' urban strategy, and duly elected local bodies. But, at some level, these criteria were inadequate for they did not take into account any empirical considerations for repositioning select urban settlements into nodes of regional importance capable of attracting people intending to migrate to metropolitan cities. Meanwhile, the central government continued to fund the Integrated Development of Small and Medium Towns (IDSMT) first conceived in the late 1970s to channelize central funds into regional cities and towns. However, large-scale central investment in cities and towns were to wait until after the structural reforms of the early 1990s.

5.2.2 In the second phase planning and design practitioners began questioning the legitimacy of statutory master plans arguing that a comprehensive planning approach served little utility for shaping the spatial form of cities as well as their economic development. Thus, public sector planning's focus began shifting solely from the making and implementation of master plans toward sector- and project-oriented urban plans. Although state planners continued to make comprehensive plans, like those for new settlements such as Greater Noida and capitals for newly created states like Naya Raipur for the state of Chhattisgarh, government agencies began placing greater emphasis on private sector-led projects involving urban infrastructure, housing, and real estate development. This phase also witnessed a bundle of various CSS Programme along with IDSMT, Urban Basic Services Program, 1986, and Urban Basic Services for the Poor, 1990, aimed exclusively at providing housing and basic services for marginalized communities. Simultaneously, programs like the City Challenge Fund, 2003, and Urban Reforms Incentive Fund, 2003, were aimed specifically at making urban local government financially competitive and sustainable. Investment was directed towards creating basic infrastructure- both for mega cities and small towns.

5.2.3 The third phase: The first of Flagship Programme and slow progress towards integrating environmental and ecological dimension in the master plan. Components of JNNURM 2005 and the package associated with JNNURM such as CDP et al. Yet, many of these plans and their ad hoc nature were critiqued. For instance, many CDPs were framed as 'investment plans' that did not connect well with the statutory master development plans of cities (Grant Thornton India, 2011, p. 36 and 72). The proposed planning system combining CDPs and DPRs was time-efficient but did not often succeed at integrating the spatial dimension. While the master plan details the spatial planning, the other (CDP) is a vision document and perspective plan for the city. For the economic and social development of a city, both these aspects need to be interlinked. However, as per the present status of the CDPs, there appears to be a disconnect between the two and CDP merely becomes an investment plan with a focus on projects as opposed to a holistic development document (Grant Thornton India, 2011, p. 36).

The engagement of the Government of India in urban development through Centrally Sponsored Schemes (CSS) presents a strategic and resourceful approach to addressing the multifaceted challenges of urbanization. This involvement, facilitated by Article 282 of the Indian Constitution, signifies a collaborative effort between the central and state governments to bolster urban infrastructure, services, and governance. By supplementing the efforts of state governments through CSS, the central government contributes its resources to ensure that urban development initiatives are adequately funded and implemented. The central government's efforts to reinforce planning through various spatial plans under centrally sponsored schemes signify a comprehensive approach to addressing the intricacies of urban development. The central government recognizes the interconnected nature of urban challenges and opportunities. Spatial plans provide a blueprint for urban growth, encompassing diverse aspects such as infrastructure, environment, etc.

Non-statutory spatial plans in India, particularly exemplified by centrally sponsored schemes such as the City Sanitation Plan, reflect a nuanced and multifaceted approach to urban development. This dynamic interplay between legal frameworks and flexible, mission-oriented initiatives contributes to a more holistic and responsive urban planning landscape.

The existence of statutory plans, governed by legal frameworks, is essential for regulatory purposes and provides a structured framework for managing urban growth. However, recognizing the evolving nature of urban challenges, non-statutory spatial plans offer a complementary layer of flexibility and adaptability. By providing financial support, these schemes empower cities to address specific challenges. The mission-oriented approach allows for targeted interventions that may not be explicitly covered in traditional statutory plans. The Ministry of Housing and Urban Affairs administers central sector programs like JNNURM, AMRUT, and the 100 Smart Cities Mission. These programs reflect a strategic alignment with the evolving needs of urban areas.

There have been numerous attempts to counter the business-as-usual urban planning procedure followed by states to address many of the procedural technical and emerging issues associated with planning in India. Various centrally sponsored schemes are instrumental in delivering both non-spatial and spatial plans for town and cities, primarily executed by state-level authorities such as the State Urban Development Agency (SUDA) and Town and Country Planning Organisation (TCPO) of the respective states. For instance, TCPO played a crucial role for monitoring non spatial plans like, the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), a component of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) initiated in December 2005, whose primary focus was to enhance infrastructural facilities and promote planned integrated development in towns and cities. Incorporating spatial plans by TCPO, the Urban Mapping Scheme (1991) and the National Urban Information System (NUIS) Scheme (2006) envision the use of remote sensing and Geographic Information Systems (GIS). These technologies aid in the preparation and updating of base maps, facilitating urban planning and development. The databases created through these schemes play a crucial role in formulating Master Plans and detailed town planning schemes. Notably, the recent emphasis of TCPO focus is on GIS-based Master Plans (2015) for 500 AMRUT Cities, a significant reform under the Atal Mission for Rejuvenation and Urban Transformation (AMRUT).

The following table shows a clear shift in policy from comprehensive development to an approach that incorporates environmental considerations, primarily through programmatic plans.

Year	Scheme	Plan	About Schemes
1972	Environmental improvement of urban slums	4th five-year plan (1969-1974).	Centrally sponsored Scheme to provide a minimum level of services, such as water supply, sewerage, drainage, and pavements in 11 cities with a population of 8 lakhs and above. The scheme was later extended to nine more cities.
1974-1979	Integrated Urban Development program	6th five-year plan (1980-1985)	Centrally sponsored scheme to enhance the infrastructure of cities with a population of over 300,000. Improvements in drainage, sewerage, and sanitation are necessary to enhance the environmental conditions in slums
1975	Integrated development of small and medium towns	6th Five-Year Plan (1980-1985)	A federally funded program to foster growth in communities with less than 100,000 inhabitants.
1992-1997	Mega city scheme	8th Five-Year Plan (1992 - 1997) (5 cities - Mumbai, Kolkata, Chennai, Bangalore, Hyderabad)	Mega City Scheme is to be promoted as a vehicle for urban sector reforms. The sharing between Central and State Governments would be in the ratio of 25:25 and the balance of 50% is to be met from institutional finance.
2003	Urban Reform Incentive Fund	10th Five-Year Plan	To provide reform-linked assistance to States to incentivize and accelerate the process of urban reforms identified by the Government of India, Ministry of Urban Employment, and Poverty Alleviation from time to time. Rs. 500 crores per annum will be provided.
2005	JNNURM	11th Five Year Plan	With an estimated provision of Rs. 50,000 crores for a period of seven years, JNNURM is the single largest central government initiative in the urban sector. The aim is to encourage reforms and fast-track planned development of identified cities. The focus is to be on efficiency in urban infrastructure and service delivery mechanisms, community participation, and accountability of ULBs/ Parastatal agencies towards citizens.
2014	Swachh Bharat Mission	12th Five Year Plan	SBMC is a Centrally Sponsored Scheme with fund sharing pattern between the Centre and States being 90:10 for North-Eastern States, Himachal Pradesh, Uttarakhand, and UT of Jammu and Kashmir, 100% from the Centre for remaining Union Territories (UTs), and 60:40 for other States. Swachh Bharat Mission aims to provide safety, security, and convenience, especially for women and children, by eliminating the shameful habit of open defecation across the country.
2015	Smart Cities Mission	12th Five Year Plan	A Centrally Sponsored Scheme where financial support will be given to the extent of Rs. 48,000 crores over 5 years i.e., on an average of Rs.100 crore per city per year. An equal amount on a matching basis is to be provided by the State/ULB. The main objective of the Mission is to promote cities that provide core infrastructure, clean and sustainable environment, and give a decent quality of life to their citizens through the application of 'smart solutions'. The Mission aims to drive economic growth and improve quality of life through comprehensive work on social, economic, physical, and institutional pillars of the city

2015	AMRUT	12th Five Year Plan and later	The Ministry of Housing and Urban Affairs has approved State Annual Action Plans (SAAPs) of all the States/Union Territories (UTs) amounting to 77,640 crore for the entire Mission period, which includes committed Central Assistance (CA) of 35,990 crore. The Mission focuses on the development of basic infrastructure, in the selected cities and towns, in the sectors of water supply; sewerage and septage management; storm water drainage; green spaces and parks; and non-motorized urban transport. AMRUT 2.0 will promote circular economy of water through development of the City Water Balance Plan (CWBP) for each city focusing on recycle/reuse of treated sewage, rejuvenation of water bodies and water conservation. A set of Reforms and Capacity Building have also been included in the Mission. The Mission mandates a set of 11 Reforms which must be implemented by all the States and 500 Mission cities within 4 years.
2022	URMP		NMCG-NIUA for Ganges Basin States
2023	Climate Plan	Resilience	Chennai and Bombay Municipal Corporation

Source: TREADS Analysis

5.2.4 Differentiating the programmatic plans from the Statutory Master Plan

The statutory and spatial nature of the Master Plan can impose constraints on the programmatic plans, especially the spatially-associated ones such as the plans for protection of improving water bodies. Most water-body-related programmes/projects negotiate the challenges of encroachment of flood plains or development in catchments as encroachments ex post.

The following table describes the fundamental differences between the statutory Master plan and the programmatic plans:

Table 04: Differences between statutory and non-statutory plans

Features	Statutory Plan/Master Plans	Programmatic/Non-Statutory Plans
Legality “de jure”	Masterplan is statutory in nature, meaning it is legally binding and enforceable under relevant planning and development laws. Developed within the legal framework established by the government or legal mandated authority. It includes Town & country planning (T&CP) law, regulations, and planning guidelines that govern land use, zoning, environmental protection, and development control.	Programmatic plans do not have the same legal status as master plans. While the primary focus of the master plan is essentially preparation of a multi-scalar (from regional to local scale depending on the specific legislation) spatial framework for urban development, programmatic plans offer detailed sector-specific planning, investment, strategies and implementation of infrastructure projects. Programmatic Plans set the vision and agenda with various sectoral strategies but are not backed by any legislative instruments. A number of the programmatic plans, such as the AMRUT and Smart City Missions, are effectively Centrally Sponsored Schemes. Under the Indian constitution, CSS to a significant extent is governed by Article 282 that enables the Union Government to provide discretionary grants (even beyond the Union's legislative competences such as urban planning and land matters) for any public purpose (Sharma et al. 2021). This is beyond the constitutional provision of centre-to-state transfer (Article 270 and Article 275) through the Finance Commission recommendations.
Features	The process for developing and adopting a master plan must comply with procedural requirements established by law or regulation. This includes requirements for public notice, consultation with stakeholders, hearings, approvals by relevant authorities, and documentation of decision-making processes. Failure to adhere to procedural requirements can render the master plan legally invalid and subject to legal challenges. State specifics. For instance, the entire hierarchy, such as regional plans, master plans, local area plans, and town planning schemes may or may not be applicable. Different states have different statutory positions based on how and what scale a master plan would be prepared, such as regional, zonal and local levels. It is based on the statute of the respective state governments.	Programmatic plans are often identified as ‘flagship’ projects and Centrally Sponsored Schemes (CSS) by the Government of India (GoI) or driven by development sector cooperation with Multilateral Development Banks (MDB) through specific projects. For instance, the ADB funded Kolkata Environmental Improvement Investment Program (KEIP) had significant financial support from the Asian Development Bank (ADB). These also include. Programmatic plans can be thematic (such as City Sanitation Plans, City Mobility Plans developed under erstwhile JNNURM, Urban River Management Plan (URMP) (focusing on urban river management), Heat Action Plan (HAP) and cross-sectoral (such as climate action plans, Smart City Plans (SCP), etc.). Although programmatic plans reflect local context, they are not guided by state-specific scale and functionality of the master plans. The scope of the programmatic plans extend beyond the the spatial and functional scale of statutory master plans to address extraterritorial risks and challenges such as climate risks and other sectoral goals such as climate action plans, and in other cases, they act as appendages to the master plan with varying goals and objectives (strategic interventions in sectors such as sanitation, mobility, etc), for infrastructure planning and financing, infusion of technological advancements, etc. A particular feature in some of the programmatic plans is the setting of the targets and performance indicators to guide decision-making and resource allocation in urban development activities. These plans and projects also have, in some cases, specific monitoring and evaluation frameworks to track progress and evaluation criteria to guide ongoing assessment and feedback mechanisms.
Temporality	Notifying the master plan is a requirement under the law before it could be officially adopted. It is a lengthy process because of the various socio-political factors. After notification, the implementation of the master plan is generally over a period of 20-30 years.	Time-based implementation based on the funding (CSS) and institutional requirement. Certain plans, such as the Climate Action Plan and Urban River Management Plan (URMP), have long-term implementation periods, and in cases these plans also require being aligned and mainstreamed with the master plans, making their scope period of implementation long-term. In other words, many of the programmatic plans are guided by the sunset clause such as the Smart City Mission. Some others have a longer time period of plan and implementation such as the Climate Action Plan. However, since they are not backed by law they are often impacted by electoral outcomes and change in political priorities.

Institutions	With constitutional reforms (the 74th Amendment), urban local governments were empowered under the 12th Schedule for urban planning regulation of land use, and planning for economic and social development. Also, under the amendment for metropolitan cities with a population of over 1 million, are required to constitute the Metropolitan Planning Committee (MPC) which is required to prepare the larger metropolitan plan by also incorporating local level plans. However, in most cases, state government through Developmental Authorities/TCPO undertaking the statutory master planning exercise ULBs such as the Municipal Corporations/ Municipalities and their associated legal provisions (such as The Municipal Corporation Act of Chennai and Kolkata) play an important role in the conception, implementation and enforcement of the master plans.	Certain Programmatic Plans such as the AMRUT and JNNURM has 3 tier institutional system: Centre: Policy Frameworks/ Guidelines funding, and also monitoring. State: State-Level Nodal Agencies (SLNA) such as State Urban Development Agency (SUDA) in close association with the centre elect, appraise, propose and implement projects. The role of the ULB in this aspect is the preparation of the Detailed Project Report(DPR) and other Service Level Improvement Plans (Under AMRUT) as well as implementation of the specific projects. Some of the programmatic plans such as the Smart City Plans are conceived and implemented through specialised institutions such as the Special Purpose Vehicle(SPV) (Jointly owned by the State Government and ULB and constituted under the Companies Act, 2013). The centre-state coordination and the design of the Centrally Sponsored Scheme (CSS) constitutes an important component in translation of the programmatic plan in action.
Budgetary Allocation	The 74th Amendment, Article 243X, also empowers the MCs with own-source revenues (taxes, fees, and tolls) and ensures grants-in-aid from State Consolidated Funds. But the implementation depends on state governments, leading to uneven fund transfers. However, budget allocation for a master plan can vary significantly depending on various factors such as the scale of the plan, the geographic area covered, the complexity of the planning process, and the objectives of the plan and State governments play a crucial role in allocating budgets for master plans, as urban planning and development are primarily under the purview of state governments in India. State planning departments, urban development departments, and development authorities may allocate funds from their budgets to support the preparation, implementation, and monitoring of master plans in their respective states. The cost of implementing a master plan is dynamic and depends on multiple factors, such as devolution of finance across governmental levels and state level political priorities. Local governments, including municipal corporations, municipalities, and urban local bodies (ULBs), often allocate funds for master planning activities within their jurisdictions. These funds may come from local government budgets, grants from higher levels of government, or revenue generated through taxes, fees, and other sources. Local governments are responsible for coordinating master planning efforts and ensuring alignment with local development priorities.	Programmatic plans include a financial plan that outlines the resource requirements, funding sources, and budget allocations needed to implement sector-specific interventions. This component may include strategies for mobilizing public funds, leveraging private investment, accessing external financing sources, and optimizing resource utilization to support implementation efforts. The programmatic plan mostly has a steady investment plan (either in terms of CSS allocation) or is funded through MDB and other development cooperation. Source: TREADS Analysis

5.3 Challenges of the Master Planning Process

5.3.1 Perspectives from existing scholarship on the Master Plan

The limitations of the master planning methodology as a long-drawn-out process to direct urbanisation in the country has been noted amongst politicians, academicians as well as practising planners. Ansari (2004, p. 15) notes that:

‘While emphasizing physical planning and civic design aspects, the Master plan touches upon the social and economic dimensions of the proposal only peripherally. Little attention is paid to the importance of setting development priorities, in the light of fiscal and administrative constraints of governments that are ultimately responsible for implementing the plans. The regional context is often forgotten and the essential symbiosis that exists between urban centres and the surrounding rural area is hardly ever considered. Critics also suggest that master plans, if truly comprehensive, should be able to show what integration and forethought can achieve in terms of resolving urgent needs of the urban community, while economising on scarce municipal funds and mobilising resources through partnerships. What emerges instead is largely a bundle of half-baked ideas incorporated into a proposed land-use plan that planners insist should be implemented in its entirety at all cost’.

Writing on a similar vein about the limitations of the master plan tool, Watson (2009, p. 178) emphasises that:

‘The static, end-state form of master plans is completely at odds with cities, which are growing and changing, in largely unpredictable ways, probably faster now than at any other time in history. Master plans usually have the ability to control but not to promote: the forward plans may present grand visions, but the land use regulations which accompany them are often not suitable mechanisms for implementing them. Finally, master planning emphasises the product of planning but not the process, hence there may be little local buy-in and plans are unlikely to be institutionally embedded’.

Ansari (2004, p. 15) argues that in spite of the obvious limitations embedded within the master plan tool, urban planning in India tirelessly pursues the master plan tool as the key official document. He states that all cities in India having master plans displays the problems which caused countries such as the UK to shift away from this approach, and yet the main task of municipal planning departments is to produce more such plans.

Phatak (2024, p. 50-51) points out crucial limitations of the master plan instrument in regards to its economic possibilities, accommodative and adaptive capabilities, implementation as well as its axiomatic nature. He states:

Firstly, the implementation of the master plan, in terms of public works envisaged, does not exceed 25% of the plan. Secondly, despite elaborate development control mechanisms 30 – 50 percent of the population lives in squatter settlements and many informal activities take place on streets of environmentally fragile areas. Thirdly, the long-term plan is incapable of being adjusted to changing economic trends; and ad-hoc decisions outside the plan framework then override the plan provisions.

Political intervention and impractical rationalities of the master plan have also hindered its appropriate implementation. Phatak (2024, p. 51) points out that “the rationale of master plan and DCRs is to ensure health, safety, efficiency with an implicit concern for controlling negative externalities. However, these concerns are translated into the master plan in an axiomatic manner assuming that the local government will have adequate resources to implement the plan and there will be no political intervention in development control. Both these assumptions have obviously turned out to be unrealistic. This has given rise to counter-intuitive results”.

Sreemay Basu (1995) points out that since the Master plan tries to predict the end-state, for a horizon of 20-25 years, it fails to see the urban dynamism and is therefore rigid. The master plan also lacks co-ordination with the economic plans and often fails to take into consideration sectoral outlays and targeted growth potential of economic sectors within the urban plan region. The master plan also leaves out the urban fringe, which is often the most dynamic area of urban growth. In doing so, the master plan fails to capitalise on the urban-rural linkages. Lack of political consultations in making the plan is another limitation, especially relevant because political interference often derails the plan. Lack of financial programming, budgeting, review, idealistic targets are other concerns apart from non-accounting for flow of migrants and squatters.

More importantly, institutional inadequacies challenge the Master Planning process. Norms and standards are often borrowed from other plans and do not represent local conditions or the context. Perhaps, the most glaring example of this is the Himachal Pradesh bye-laws which seem to be almost a carbon copy of the DDA' (Basu, 1998, p. 25). Lack of co-ordination between various implementing agencies and inadequate implementation are other limitations of the master plan instrument.

A study on 'Implementation of Urban Master Plans in India' sponsored by the Ministry of Urban Development in 1996 brought out the following problems (Phatak, 2024, p. 53):

- ▶ Inflexible planning / development norms
- ▶ Cumbersome planning / development permission procedures
- ▶ Time-consuming procedure for effecting land-use changes
- ▶ Lack of integration of socio-economic development with physical planning
- ▶ Want of adequate dissemination of information and community participation
- ▶ Lack of commitment to planning as a way towards socio-economic development and not just a tool of development control.

5.3.2 Challenges associated with Zoning Regulation in the Master Plan

Zoning Regulation was an early attempt to ensure public health and safety. Zoning as a planning criteria has been adopted from the developed countries. Zoning is a method of segregating land-use of a planned area, based on the function it provides. For example, Bombay classified its city Master plan into five zones: residential, commercial, industrial, public, semi-public, and transportation areas. The Madras (now Chennai) Plan (1975) also adopted these five categories along with the addition of recreational, agricultural and non-urban uses.

In a report published in 1976, the Town and Country Planning Organization (TCPO) described the results of a survey of more than 100 cities, which identified broad ranges of land-use distribution that followed a very similar classification to that in Bombay and Madras. The zoning classification thus became institutionalized within Master plans.

Although zoning allows ordering the city into its functional criterias, it is also equally true that in developing countries, anywhere from 30 to 50 per cent of the population, includes slums, unauthorized colonies, and urban villages, which are excluded from such neat planned zones. In doing so, a sizable proportion of urban population is systematically excluded from the benefits of planned development and consequently from zoning regulations in almost all large cities. Such settlements are either classified as illegal or as encroachments.

Ewing (1969) made scathing criticisms of India's implementation of 'Western' concepts like zoning, which he termed 'ill-suited' for India, particularly when these had not been highly effective even in the U.S. Ewing suggested that Indian town planning should make a 'decisive break with foreign stereotypes'. Such a change was never adopted in India's spatial planning framework. Delhi and several other cities continued to follow Western-style zoning regulations.

The idea of introducing single use zones in the earlier master plans were replaced by newer concepts like mixed use development. For instance, from the 1990s onwards, environmental concerns were incorporated into the master plans of various cities. For example, in MPD 2001, the Delhi Ridge was categorised as a regional park, thereby protecting the ridge. However, in many other cities, environmentally sensitive areas continued to be subsumed under land-use zones. Even when such sensitive areas were identified, implementation, in most cases, remained a challenge.

Another challenge with zoning lies in its practice itself- as neatly designated zones have seldom been practised in entirety for long on ground. The conundrum between Residential vis a vis Commercial and Industrial Zoning is a stark example. This can also be extrapolated to the eco-sensitive or water body use zone.

5.3.3 Challenges within the existing T&CP Laws in India

It is only recently, during the last decade or two, that revising T&CP law has become increasingly essential, as cities have faced a variety of environmental pressures. There is a widespread call to reform T&CP law in India. Two important reports in recent times validate this.

In 2021, NITI Aayog published a report, 'Urban Planning Capacity in India', analysing the various aspects of planning capacity in India. Niti Aayog recommended forming an apex committee at the State level, to study the efficacy of the State T&CP Act and also to undertake a regular review of planning legislations (including T&CP or urban and regional development acts or other relevant acts) (NITI Aayog 2021).

Building on the work of NITI Aayog and towards advancing the work, the Ministry of Housing and Urban Affairs (MoHUA) constituted a High-Level Committee (HLC) on urban Planning in 2022. One of the major observations of the HLC was that India's current legal framework for T&CP is 'outdated and inadequate for unlocking the full potential of urban areas, and that it requires comprehensive overhaul to align with contemporary needs.

Various high level policy deliberations took cognizance of the limitation of T&CP Laws to incorporate the climate and environment related concerns. For instance, the recently concluded 'National Expert Roundtable on Climate Sensitive Urban Planning concluded that Revisions in the master plan section of the T&CP Act are crucial and should mandate plans to be looked at from a hydrological, ecological perspective or climate perspective.

Similarly, in 2018 MoHUA underscored the need for urban river water conservation and mainstreaming it with urban planning- It gives detailed specific guidelines and framework for the river zonal development plan, urban river zoning regulations, regulations for eco-sensitive zones and water bodies as well as broader guiding principles for the purpose of restoration of river rejuvenation or conservation purpose.

Statutory master plans are prepared by using T&CP laws. As previously discussed, apart from the statutory master plans there is a wide gamut of plans- sectoral, programmatic and other spontaneous plans - formal or informal such as climate action plan which interact and shape the statutory master plan. Given this planning ecosystem, can the Master Plan prepared under the T&CP laws facilitate convergence of other non-statutory plans prepared by the city? How does the T&CP respond to such multiplicity of plans in the urban planning domain?

It has been frequently debated that such non-statutory or programmatic plans prepared by various agencies and institutions other than the Town Planning or Urban Planning Department are often not mainstreamed or integrated with the master plans. The challenge of convergence between statutory plans vis a vis the other programmatic/ supplementary plans remains a viable challenge for river-centric planning.

It is also imperative to note that many states and individual cities have creatively deployed bye-laws and DCR to address the ecological concern. However, one of the key distinctions made in the context of the building law by Phatak (2024) is that, building bye-laws or DCR's are in the context of regulating the 'private development' and in conformity with the master plans, as prepared under the T&CP laws. In this context, the broader urban development, infrastructure provision that would influence and supplement development in the private realm. In this context, he argued that building bye laws cannot be 'considered in isolation' but in the larger canvas of the urban laws and management. In particular, Phatak (2024) the key objectives that building bye laws are meant to achieve-and primarily directed towards health and safety requirements to address the negative externalities that may arise out of the 'individual development'.

As discussed in the previous sections, after the 1970s the focus of governments - both central and state was towards infrastructure development, defining a scale- that could be useful to address the problems of the small and medium towns, peri urban areas and hinterland. Lately the focus has been on urban reforms and large-scale mission driven infrastructure projects through central funding and release of funds contingent upon plan preparation.

In such a planning ecosystem, the T&CP laws are seldom used. This is well reflected in the NITI Aayog report on Reforms in urban planning capacity in India (2021) where cities have an abysmal rate of plan preparation. The UD law is generally flexible and the discretion of the master plan preparation and the terms of reference are left with UDA. However, without a legal framework, the DP seldom incorporates measures of environmental sustainability, disaster risks, or creatively deploys other environmental laws to ensure water body protection. Phatak (2024) shows that although many states prepare annual environmental status reports, they are seldom taken as an input for master plan preparation.

The most prevalent debates and discussions on the limits of master plans - especially its inability to adapt to the changing urban dynamics owing to its long-time frame leading to ad-hoc decision making and sharp deviation from objectives as envisioned in the master plan. Although, DDA Act 1957, was amended in 1963 to include provision for the modification of master and zonal development plans (s. 11A). It allows for the revision as DDA thinks fit, but that “do not effect important alterations in the character of the plan and which do not relate to the extent of land-uses or the standards of population density”. At the same time, multiple modifications itself create significant lag and divergence from the stated objectives. For example, there was a significant delay in the Delhi Master Plan of 2021 and numerous modifications have led to many uncertainties.

These ambiguities on how to accommodate changing dynamics of the political economy in T&CP laws remain. For instance, Phatak (2024) argues that the master plan has ‘no strategy to deal with uncertainties that would inevitably occur over a period of years, say for instance, 20 years that manifests in ‘volatile change of the city economy’. For example, how IT and ITES in Bangalore and the Textile Mills of Mumbai reshaped the economic fabric of the city which the master plan was unable to respond to.

The T&CP laws as well as the master plan itself suffers from the dilemma of ‘centrality vs flexibility’ in what the optimal approach should be. T&CP laws of a number of major states do not mandate Local Area Planning/Sectoral Plans at an optimal scale that could help supplement the much coarser master plan or zonal development plan.

Institutionalization of inter-state coordination mechanisms in urban planning remains a crucial prerequisite in addressing many of the environmental or climate related challenges- such as urban flooding. Inter-state planning has been recommended by URDPFI Guideline 2014 as is practiced in its various avatars such as NCRPB. However, such a mechanism to deal with environmental stressors has seldom been formulated and integrated in T&CP laws by the states. The variety of plan making especially the master plan pertaining to Industrial corridor and GATI shakti too impacts the urban and regional economy. Such a coordination board helps in this regard.

5.3.4 Responses of States in amending T&CP Laws

Some States are increasingly viewing it as necessary to change the T&CP Laws. For instance, Tamil Nadu - especially to incorporate disaster risk measures. West Bengal has amended its building bye-laws for conservation of river banks. Other states are considering amending the T&CP laws to mandate LAP within T&CP law. There is a renewed interest from MoHUA to incorporate Local Area Plans for brownfield development and TP Schemes for green field development. Integration of LAPs TP scheme with masterplans is essential for effective urban planning and governance, ensuring that development strategies are responsive to the diverse needs and contexts of local development.

Some states are proactively taking measures to include LAP and TP schemes by amending the T&CP Law. For instance, the Uttarakhand Urban and Country Planning and Development (Amendment) Act, 2022, inserted a new section (Section 9A after the principal Act) to mandate preparation of ‘Local Area Plan and Town Planning Schemes’ and substituted the heading of Chapter III of the principal Act to Master Plan, Zonal Development Plan, Local Area Plan and Town Planning Scheme.

The challenge of mainstreaming other supplementary plans such as Climate Action Plan, etc. is a major point of consideration in driving the amendment for T&CP law for the states. Examples include Mumbai and Bangalore. However, the macro picture continues as ad-hoc, in which the broader legal framework of Urban and Regional Planning remains static and inadequate to respond to the changing dynamics.

5.3.5 Ad-hoc nature of the Master Plan instrument itself

Master Plans have often been critiqued for its ad hoc nature and its ex-post response. Such shortcomings of the Master Plans in turn get embedded in the urban planning practice in India. Key observations on such structural issues of the Master Plan instrument include:

- The master plans have restricted themselves to cater to the requirements of the UD/TCP Act. This manifests in the 'general nature' of the Master Plan objectives regardless of the nature of town or the socio-environmental realities.
- The rigid nature of the Master Plan with inadequate consideration for the various 'social economic and technological dynamism'. It is often reflected in multiple instances where Master Plans are criticized for its ex-post response-post facto planning, or commonly termed 'regularization,' which, as Kumar et al. (2021) points out, becomes the accepted policy norm due to a combination of several factors pertaining to the political economy of the state.
- The long-time frame for which Master Plans are implemented also proves to be counterproductive when urban areas experience fast-changing economic and socio-political realities. In such circumstances, the Master Plan vision risks becoming redundant.
- Lack of coordination among the various institutions that influence and are influenced by the implementation of the Master Plan -namely Development Authorities, Municipal Corporation and other parastatals often create institutional silos, thereby impacting the entire ecosystem of statutory spatial planning.

Such fragmented practices of the Master planning process is also complicated by borrowing of planning models which dilutes the tools of the Master Plan vis a vis their deployment often resulting in contentious outcomes. For instance, During the 1970s and 1980s, imported planning ideas like the neighbourhood unit, green belt, and segregated land uses continued to be institutionalized in Indian planning practice and literature. Statutory master plans, for instance, routinely employed these concepts while planning textbooks and professional publications frequently featured the application of these concepts across urban India. Even today many of these ideas continue to be an important part of urban plans and policy documents but on the actual ground, the shape and form of these discursive planning concepts are often vastly different from their description on paper.

However, despite multiple criticisms, severe limitations and slow pace of implementation, Master Plan is the only planning instrument which has stood the test of time within the spatial planning framework in the country (Uttarwar 2012). To add to this testament, the Government of India Workshop on 'Master Plan Approach: Its Efficacy and Alternatives' discussed the entire Master Planning process and concluded that, despite its challenges, there is no alternative to the Master Plan instrument.

6.1 Increasing expectations from the Master Plan in public discourse

The position of the Master Plan is further complicated by the growing dependence on the Master Plan as a panacea for all urban challenges. With intensifying environmental challenges of the 21st century, public discourses have increasingly begun to look to the Master Plan to address social and economic inclusivity and address urban floods, climate change, and heat island effects.

- In the case of Chennai, citizens point out that the third Master plan for Chennai needs a shift in its approach – that the Master Plan ought to have proposed the generation of employment opportunities for the poor and proposed housing and basic amenities for migrants, unskilled informal workers and slum-dwellers besides facilitating training to upgrade their skills (The New Indian Express, 2023).
- In the case of Delhi, Op-ed pieces in newspapers have insisted on inviting widespread public participation in the upcoming Delhi Master Plan, 2041, arguing that the decision of whether Delhi grows into a ‘world-class’ capital city depends on ensuring the involvement of the citizens that inhabit the city (Indian Express, 2021).
- The Delhi Master Plan 2041 has also been critiqued for having become exclusionary (Indian Express, 2021).
- In failing to address the capital city's homeless by underestimating their number and cutting down space for the needy while unilaterally redefining the idea of shelter itself, the draft policy of the 2041 Delhi Master Plan has again underperformed (Indian Express, 2021).
- Popular literature discusses how the Master Plans of the country are not geared up to tackle India's largest urban growth spurt in history because a) inter-agency negotiations remain out of the scope of the master planning process and b) they lack the mandate for integration with other sectoral infrastructure plans (Indian Express, 2022).
- Since the master planning process also faces prolonged delays in preparation, sanctioning and implementation, it raises concern over the Master Plan's capability to address the urgent requirements of the country's fast-paced demand of urban infrastructure (Indian Express, 2022).
- Urban water security now encompasses not just supply but also risks from floods, quality issues, and climate change — and that existing T&CP laws are inadequate to address these complex challenges (CPR Insights, 2024).
- Delays regarding the Master plans are also a recurring concern in popular debates for fast-growing cities like Bengaluru, where, owing to delays in the preparation of the new Master Plan, the city is forced to function on its 2015 predecessor, prepared in 2006-07 (The New Indian Express, 2024).
- The absence of an updated Master plan in Bengaluru are attributed to the city's incomplete and inadequate civic facilities in the peripheral areas, stark absence of updated zoning regulations, while going as far as to describe Bengaluru as the ‘dystopian city’, where the absence of a master plan has ‘choked’ it (Deccan Herald, 2023).
- Bengaluru's struggle with potholes, traffic congestion, mismanagement of resources, loss of green cover, encroachments, violations and unregulated growth are all problems attributed to the absence of the Master plan (Deccan Herald, 2024).
- The challenge of urban floods in Bengaluru is also blamed on the inadequacies and absence of the Master plan (The New Indian Express, 2022), stating how flooding is integrally connected with mismanaged urban growth, attributed to an outdated master plan of the city.

- Land-use zoning regulations of the Master plans have been critiqued as being more prescriptive rather than promotive of development. Popular literature points out how the development regulations (DR) has proved to be an ineffective instrument for regulating dynamic land use development because the DR system is marked by violations, deviations, unauthorised developments, prolonged delays, and political interference (The New Indian Express, 2023), ultimately rendering planned development of the master plan.
- Urban planners contributing to the popular literature have similarly questioned the effectiveness of the master plan tool to lead urban growth in Indian cities, arguing that Development authorities and competent urban planners should focus on long-term spatial development plans rather than developing a range of master plans (Down To Earth, 2023).
- With growing consciousness of the urgency of climate change in the country, there is a demand for urban planning efforts to embrace climate-centric planning. India's National Mission on Sustainable Habitat already articulates the need to mainstream climate change mitigation and adaptation measures in urban planning and policy frameworks (Hindustan Times, 2023).

6.2 Where does water sensitivity figure within the rationalities of India's only statutory planning tool?

The analysis of the previous sections regarding the structures, instruments and rationalities that uphold the statutory tool brings out the following challenges:

a. That, the Master Plan's origin is a land-centric initiative and it continues to dominate as a land-use paradigm in urban planning:

In the wake of the British urban planning framework, the Master Plan was adopted as the default standard of urban planning in India. Colonial and post-independent concerns regarding detrimental sanitation, widespread diseases on the one hand and the pressing concerns of settling post-partition refugees, unregulated urban growth, catering to infrastructure inadequacies culminated in the early legislation of the Delhi Development Act, 1957, which essentially qualified the Delhi Development Authority (DDA) to prepare, implement and thereby regulate Delhi's growth through the Master Plan instrument. Land allocations and its management thereby became the central axis of Delhi's urban planning rationalities.

The contiguous states of Delhi enacted similar land-use centered Acts, keeping the DDA Act as the point of reference. Uttar Pradesh Urban Planning and Development Act, 1973 was enacted to govern urban planning, development, and land use regulations in the state of Uttar Pradesh. Uttarakhand adopted the 1973 legislation of its parent state Uttar Pradesh with slight modifications in the form of Uttarakhand Urban and Country planning and Development Act, 1973. The Haryana Urban Development Authority Act, 1977 was enacted in response to rising demands for infrastructure, housing and other amenities, while the Rajasthan Urban Improvement Act, 1959, and the Himachal Pradesh Town and Country Planning Act 1977 was adopted to provide for the regulation of land development and expansion of urban areas.

Environmental management, water-sensitive planning therefore has historically not been prioritised in the planning Acts as land management continued to be the pressing challenge and therefore the dominant paradigm. Urban water-bodies, within this paradigm, were viewed as static land-parcels enabling its allocation for development purposes. It is only recently that the environmental concerns have begun to take root, firstly owing to a growing consciousness regarding the environment and secondly, due to new environmental challenges that have been added to the urban spaces of the country.

b. That, environmental references when present remains vague and open-ended:

Some T&CP Acts like, for the state of Bihar, Act 2012 include tangential references to protection of urban water bodies, under broad mandates of sustainable practices and environmental protection approach. Although a welcome step, these provisions continue to carry the risk of being read as rhetorical as their vagueness enables an open-ended interpretation. So, while urban water bodies may be protected through project implementation, like the Patna Riverfront development project; it fails to ensure a totality of environmental conservation as an urban planning practice to be implemented in all urban planning practices. They simply offer a discretionary space to consider concerns related to water.

c. There continues to be jurisdictional gaps along with institutional fragmentation:

A key challenge to water-sensitive urban planning in India lies in the jurisdictional gaps and institutional fragmentation that governs the Master Plan. The authority of the statutory T&CP Acts is what mandates state-level Town and country planning departments, Development Authorities and Municipalities to implement the Master Plan. However, there is a challenging fragmentation within the institutional ecosystem that implements the Master Plan. These institutions might not possess the technical expertise, a coordination mechanism, or real time data to manage rivers, floodplains and water-bodies.

Additionally, responsibilities related to water bodies are also distributed across multiple agencies like irrigation departments, environmental departments, pollution control boards- which has created institutional silos in managing urban water bodies. For instance, while the DDA is responsible for preparing the Master Plan of Delhi, the jurisdiction of the Yamuna floodplains falls under the Delhi Irrigation and Flood Control Department, whereas pollution control falls under the Delhi Pollution Control Committee (DPCC). Such an institutional and legal architecture makes the implementation of the Master Plan a fragmented and ad-hoc exercise.

The Bhopal master plan testifies to such gaps as its lakes and ponds continue to be encroached and polluted despite having a plan in place owing to inadequate coordination between the municipal corporation, planning department and water resource department. The management challenges of the Mithi river is another case in point driven by such institutional overlaps and siloed approaches.

Although recent initiatives like the Urban River Management Plans (URMPs) have been prepared for some river towns, its implementation lacks legal enforceability, unless integrated into the statutory master plan.

d. That, there is a gap when it comes to restoration and protection of urban water bodies along with environmental or climate adaptation:

The planning laws that have been examined in the previous section for all the eleven Ganga Basin states, shows that there is also no provision for restoration and protection of urban water bodies and also none for environmental or climate adaptation, despite growing challenges like urban flooding, flash floods, cloudbursts and landslides, disappearance of lakes and water bodies along with pollution which are caused because of climate change.

Even in the recently mandated acts like for the states of Bihar or Jharkhand, although a 'language' of environmental sustainability is included, the acts remain silent on key aspects of water-sensitive urban governance or fail to operationalise pathways that might be adapted for rejuvenation of urban water bodies. As a result, even with environmental provisions, a water-sensitive urban development framework remains missing due to the lack of clarity and enforceability in the act itself. As a result, the statutory planning framework remains limited in its approaches to achieve water-sensitive plans.

e. That the master Plan is a top-down planning approach with limited engagement from the public and limited integration of local knowledge

Water knowledge in India is deeply rooted in communities as forms of practise; like socio-cultural practices and traditional knowledge. The technocratic master plan might gain from public engagements and pragmatic inclusion of context-specific local knowledge to cater to specific water related challenges of urban areas. For example, delineating seasonal streams which might be missed out as a land category.

f. That judicial interventions are increasingly sought to cater to legal void

Owing to the absence of robust statutory protection mechanisms for urban water bodies, judicial interventions have become a practice, particularly by the National Green Tribunal and High Courts, as an acceptable approach to safeguarding lakes, wetlands and floodplains. There have been several critical cases across the Ganga basin:

- ▶ Yamuna Floodplain, Delhi (Manoj Misra v. Union of India, Original Application No. 6 of 2012, National Green Tribunal (Principal Bench), Judgment dated January 13, 2015 (India)).
- ▶ Urban lakes, Patna (Rajiv Narayan & Anr. v. Union of India, Original Application No. 36 of 2012, National Green Tribunal (Principal Bench), Judgment dated September 20, 2013 (India)).
- ▶ East Kolkata Wetlands, Kolkata (Dr. Subhas Datta v. State of West Bengal, Writ Petition No. 2125 (W) of 2001, Calcutta High Court, Judgment dated March 30, 2004 (India)).
- ▶ Ponds and Water Tanks, Varanasi (Society for Protection of Environment and Biodiversity (SPEnBio) v. State of Uttar Pradesh & Ors., Original Application No. 660 of 2016, National Green Tribunal (Principal Bench), multiple orders 2016–2022 (India)).

Although such interventions have created crucial public awareness about the importance of urban water bodies, judicial interventions cannot become a standard practice to protect and rejuvenate water bodies. Urban water bodies are ecological infrastructure of the urban area, and therefore, in the face of emerging environmental and climate stressed challenges, institutional and statutory mandates remain the long-term viable option.

In acknowledgement of the existing limitations, there have been multiple suggestions to improve the Town Planning Laws in India.

Table 05: Suggested Modifications in Town Planning Laws in India

Suggested Modifications in the Town Planning Laws in India												
Proposed by:	Parameters	Uttarakhand	Delhi	Madhya Pradesh	Uttar Pradesh	Bihar	West Bengal	Rajasthan	Chhattisgarh	Himachal Pradesh	Haryana	Jharkhand
URDF I Guidelines 1996	Town Planning Scheme	X	X	✓ S. 2 (u) Definition S. 50 Town Development Schemes	X	X	X	X	✓ S. 2 (u) Definition S. 49 Town Development Schemes	✓ S. 51 Town Development Schemes	X	X
	Land Pooling Scheme	✓ S. 17-A (c)	X	X	X	X	X	X	X	X	X	X
	Development/Improvement Schemes	X	X	X	X	✓ S. 46 Area Development Scheme	✓ S. 91 Development Scheme	S. 29 Improvement Schemes	X	X	X	X
	Transferable Development Rights	X	X	✓ S. 2 (va)	X	✓ S. 2 (LII)	X	X	X	X	X	X
	Accommodation Reservation	X	X	X	X	✓ S. 68	X	X	X	X	X	X

	Private and Joint Sector Participation	✓ S. 7-A (viii)	X	✓	✓ S. 39-B	✓ S. 83	✓	✓	✓	✓	✓	✓
	Time Line	20 Years										
	Tribunal	X	✓ S. 31-B	S. 87 (2) (a) (ii) Tribunal to be constituted under Section 73 of the repealed Act	X	✓	✓ S. 75	X	S. 87 (2) (a) (ii) Tribunal to be constituted under Section 73 of the repealed Act	X	X	S. 442 Municipal Tribunal
URDF I Guidelines 2014	State Regulatory Body	X	X	✓ S. 38 Town and Country Development Authority	X	✓ S. 3	✓ S. 3	X	✓ S. 38 Town and Country Development Authority	X	X	X
	Disaster Risk Management	X	X	X	X	✓ S. 22 (2) (x)	✓ S. 31 (4) (f)	X	X	X	X	✓ S. 480. Management of natural or technological disasters-

	City Infrastructure Fund	S. 20 Fund of the Authority	S. 23	S. 61 Fund of Town and Country Development Authority	X	S. 72 Fund of the Planning Authority	S. 107 Fund of the Planning Authority or Development Authority.	S. 51 Improvement Fund	S. 61 Fund of Town and Country Development Authority	S. 63 Fund of Town and Country Development Authority	X	X
	Compulsory acquisition of land	✓ S. 17	✓ S. 15	✓ S. 56	✓ S. 17	✓ S. 67	✓ S. 43	✓ S. 52	✓ S. 56	✓	✓	✓
	Planning for Green Cities	X	X	S. 17 (b) S. 21 (b)	X	S. 21 (2) (iii)	S. 58 (2) (f)	X	S. 17 (b) S. 21 (b)	S. 17 (b) S. 22 (1) (b)	X	X
NIDMM Model Law 2004	Land Use Zoning: Provisions on Natural Hazard, Natural Hazard Prone Areas, Natural Disaster and Mitigation	X	X	X	X	S. 2 (XXXI) S. 22	S. 31 (2) (f)	X	X	X	X	X

Source: TREADS analysis of the URDPFI Guidelines, 1996 & 2014, NIDM Model Law, 2004

6.3 Changes within the traditional approach of Master Planning

As discussions about the limitations of the master plans and suggestions to move away from the master plan approach abound, there is also an increasing shift within the traditional land-use focus of the master plan document to target the challenges of the urban areas.

a. Embedding Non-statutory (programmatic) plans within Master Plan

Several programmatic plans seek to align their timelines and function as a sub-component of the master plan. For example, the Urban River Management Plans (URMP) seeks to act as a sub-component under the existing Master Plan of the respective cities, aligning itself with the same timeline. Cities like Bareilly, Kanpur and Chhatrapati Sambhaji Nagar (Aurangabad) have already integrated the guidelines provided by the URMPs into their Master Plans.

The URMP for Chhatrapati Sambhaji Nagar (Aurangabad) mapped blue and red flood lines of the city to define prohibited and restricted development zones, riparian buffers and green corridors. Bareilly's Master Plan has demarcated its floodplains and included zones of no-development around its urban water bodies. Ayodhya's Master Plan 2045 has conducted a baseline assessment of the Sarayu and implemented a tiered buffer zone system for its urban water bodies. The proposed Master Plan for Kanpur 2041 has been informed by the Urban River Management Plan (URMP) for Kanpur which recommends the demarcation of 'no development zones' and 'interactive zones' and to enlist prohibited, regulated and permissible activities within each of these zones along the Ganga and Pandu rivers (Shinde, 2022, p. 12). The integration of URMP provisions into the Master Plan thereby ensured controlled development along the ecologically sensitive floodplains.

The ClimateSmart Cities Assessment Framework 2.0 of MoHUA and NIUA C³ (2021), in their Cities Readiness Report also advises that rejuvenation and conservation of urban water bodies and open spaces requires that various city, state and national plans be aligned into city master plans, departmental plans and infrastructure DPRs to ensure coherence in planning and implementation.

b. Including water-sensitive approaches, River Zoning and Buffers

Recently, the traditional land-use focus of the Master Plan instrument has also been expanding to incorporate current urban dynamics. The Master Plan is planned for a period of 20-30 years which makes it a legitimate anchor to enable long term ecological restoration efforts, river rejuvenation. This time period also allows for the adoption of incremental and phased strategies for river conservation into spatial regulations, like river zoning and floodplain buffers.

The Revised Master Plan 2041 for Delhi (DDA) has incorporated various provisions to ensure water-sensitivity in its Master Plan. Modelled after London's planning regulations, the Delhi Master Plan 2041 has introduced a comprehensive Yamuna Development Plan. It has proposed implementation of extensive riparian buffers apart from introducing a blue-green factor into its Master Plan. The plan designated an 'O' Zone of approximately 9,700 hectares along the Yamuna to accommodate biodiversity parks, recreational spaces and city-level greens while also enforcing strict development controls in the floodplains. The plan also demarcated the 1-in-25-year flood line and has designated the Yamuna floodplain into zone 'O'. This approach embeds river-sensitive framework into the spatial planning framework. The Revised Master Plan 2031 for Bangaluru (BDA) has incorporated various provisions to ensure water-sensitivity in its Master Plan. The provisions include: Demarcating valley zones and buffer areas around urban lakes (30 meter), streams, primary (50 meter) and secondary drains with clear setbacks; Prohibition of construction activities in designated buffer zones; Rejuvenation of degraded lakes and wetlands and ensuring protection of ecological corridors and natural drainage.

Surat has adopted water-centric approaches in their master plan, focussing on measures such as rainwater harvesting, recycling of wastewater along with protection of urban water bodies.

c. Incorporating public participation

Public involvement or decentralised planning practices for preparation of the Master Plan has been carried out for the town of Magarpatta in Maharashtra and for Hyderabad. In Magarpatta, Farmers' collaborative prepared the master plan with township development as the focus of the plan. In Hyderabad, private sector and municipality partnered to prepare the master plan where urban reform agenda focussing on efficient tax collection and service delivery became the focus of the master plan (Kumar et. al., 2021, p. 206). In Chhatrapati Sambhaji Nagar (Aurangabad) the inclusion of communities in designing river zones not only ensured a stronger institutional model but also showed how public participation can be ensured within the Master Plan framework. Similar public consultations have also been conducted for the Delhi Master Plan 2041.

6.4 Provisions of TP Acts and phases of Master Plan preparation in Ganga Basin States

In the Ganga Basin States, the provision of Town Planning acts for enacting the Master Plan through all its phases has been analysed in the following table:

Table 06: Process of Master Plan preparation in the Ganga Basin States

Provision of TP acts for different phases of Masterplan Implementation													
S N o	Process of Statutor y Plannin g	General	Uttarakh and	Himach al Pradesh	Delhi	Madhya Pradesh	Uttar Pradesh	Bihar	West Bengal	Chhattisga rh	Haryana	Rajastha n	Jharkhand
			Uttarakha nd [1973, Uttarakha nd Urban and Country Planning and Develop ment Act]	Himach al Pradesh [1977, HP town and country plannin g act]	Delhi [1957, Delhi Develo pment Act]	Madhya Pradesh [1973, M.P. Nagar Tatha Gram Nivesh Adhiniya m]	Uttar Pradesh [1973, UP Urban Planning and Develop ment Act]	Bihar [2012, Bihar Urban Planning and Develop ment Act]	West Bengal [1979, WB town and country (plannin g and develop ment) act]	Chhattisgar h [1973, Chhattisga rh Nagar Tatha Gram Nivesh Adhiniyam]	Haryana [1975, Haryana Develop ment and Regulatio n of Urban Areas Act]	Rajastha n [2009, RJ Municip al Act; 1959, RJ Urban Improve ment Act]	Jharkhand [1981, JH Regional Developm ent Authority Act; 2009 JH Municipal Act]
1	INSTITUTION State Plannin g Commit tee/Boar d/ Authorit y	The Govern ment must constitut e an authority /board that shall deal with the planned growth and develop ment of urban areas.	Section 4: The Develop ment Authorit y. Section 6: Advisory Council.	Section 3: Director and other officers. (Directo r of Town and Country Plannin g)	Section 3: The Delhi Develo pment Authorit y. Section 5: Advisory Council	Section 3: Director and other officers. (Director of Town and Country Planning)	Section 4: The Develop ment Authority Section 6: Advisory Council.	Section 3: Bihar Urban Planning and Develop ment Board.	Section 3: Town and Country Plannin g Advisory Board.	Section 3: Director and other officers. (Director of Town and Country Planning)	Section 3: Establish ment and constituti on of authority.	Rajastha n Improve ment Trust Act, 1959 Section 8: Establis hment and incorpor ation of Trusts.	JH Municipal Act, 2009 Section 383: District Planning Committe e
2	Declarat ion of Plannin g Area for Develop ment by the govern ment	Identify the need for a Master Plan based on factors such as populatio n growth, economic trends, infrastruc ture deficienci es, and environm ental concerns.	Section 3: Declarati on of develop ment, areas.	Section 4: Establis hment of regions. Section 13: Plannin g area.	Section 12: Declara tion of develop ment areas and develop ment of land in those and other areas.	Section 4: Establish ment of regions. Section 13: Planning area.	Section 3: Declarati on of develop ment areas.	Section 9: Declarati on of Planning Areas .	Section 9: Declarat ion of Plannin g Areas, their amalgama tion, sub- division and inclusio n of any area in Plannin g Area.	Section 4: Establishm ent of regions. Section 13: Planning area.	Section 62: Declarati on of Local Develop ment area.	Rajastha n Improve ment Trust Act, 1959 Section 3: Power of State governm ent to order preparat ion of Masterp lan.	1981, JH Regional Developm ent Authority Act Section 8: Establish ment of Regional and Developm ent area and alteration of their limits.
3	Constitu tion of Plannin g Authorit y	Engage stakehold ers througho ut the planning process, including governm ent agencies, local communit ies, business es, non- profit organizat ions, and other relevant parties. Conduct public meetings , workshop	Section 4: The Develop ment Authorit y	Section 38: Establis hment of Town and Country Develop ment Authorit y	Section 3: The Delhi Develo pment Authorit y.	Section 38: Establish ment of Town and Country Develop ment Authority	Section 4: The Develop ment Authority	Section 11: Constitu tion of Planning Authorit y.	Section 11: Constitu tion of Plannin g Authorit y and Develop ment Authorit y. Section 15: Constitu tion of Advisory Council. Section 17: Calcutta Metropo litan develop ment	Section 38: Establishm ent of Town and Country Developm ent Authority.	Section 63: Constitu tion of the local develop ment Authority	Rajastha n Improve ment Trust Act, 1959 Section 9: Constitu tion of Trust.	1981, JH Regional Developm ent Authority Act Section 3: Regional Developm ent Authority

		s, surveys, and focus groups to gather input, feedback, and priorities from stakeholders.							Authority. Section 22: Constitution of Advisory Council.				
4	INSTRUMENT PREPARATION & PUBLIC ATION OF LAND USE MAP AND LAND USE REGISTER which leads to starting the process of preparing a MASTER PLAN for the DEVELOPMENT AREA	The planning authorities must prepare a Land Use map and register and identify the scope of the master plan by stakeholders' engagement. Gather data on demographics, land use, transportation patterns, environmental conditions, infrastructure, and other relevant factors. Analyze the collected data to identify trends, challenges, opportunities, and areas for intervention.	Section 8: Civil survey of, and master plan for the development area. Section 9: Zonal Development plans.	Section 5: Director to prepare regional plans. Section 6: Survey. Section 14: Director to prepare development plans.	Section 7: Civil survey of, and master plan for Delhi. Section 8: Zonal Development Plans.	Section 5: Director to prepare regional plans. Section 6: Survey. Section 14: Director to prepare development plans. Section 50: Preparation of Town Development Schemes.	Section 8: Civil survey of, and master plan for the development area. Section 9: Zonal Development plans.	Section 18: Preparation of Land Use Map and Land Use Register. Section 21: Preparation of the Development Plan. Section 46: Preparation of Area Development Scheme	Section 28: Preparation of present Land Use Map and Land Register. Section 31: Outline Development Plan. Section 32: Preparation of Detailed Development Plan.	Section 5: Director to prepare regional plans. Section 6: Survey. Section 14: Director to prepare development plans. Section 50: Preparation of Town Development Schemes.	Section 73: Master plan for the development area. Section 74: Sector development plans.	Rajasthan Improvement Trust Act, 1959 Section 4: Contents of the master plan. Section 5: Procedure to be followed. Section 29: Schemes. Rajasthan Municipal Act, 2009 Section 159: Civil Survey and preparation of Master Development Plan and other Plans. Section 173: Making and contents of Projects and Schemes.	JH Municipal Act, 2009 Section 381: Preparation of development plans by municipalities. Section 384: Metropolitan Planning Committee 1981, JH Regional Development Authority Act Section 16: Preparation of the Regional Plan. Section 17: Civil survey and Master Plan
5	Public Communication and Amendments	Communicate the Master Plan to the public through various channels, including websites, public meetings, newsletters, and social media.	Section 11: Procedure to be followed in the preparation and approval Plan. Section 13: Amendment of Plan.	Section 9: Finalisation of regional plan. Section 19: Publication of draft development plan.	Section 10: Procedure to be followed in the preparation and approval Plan. Section 11-A: Modifications to plan.	Section 9: Finalisation of regional plan. Section 18: Publication of draft development plan.	Section 11: Procedure to be followed in the preparation and approval Plan. Section 13: Amendment of Plan.	Section 25: Modification of the Development Plan by the Board. Section 26: Public Notice of the Develop	Section 36: Public notice of the preparation of the Development Plan.	Section 9: Finalisation of regional plan. Section 18: Publication of draft development plan.	Section 79: Amendment of Plan.	Rajasthan Municipal Act, 2009 Section 160: Procedure to be followed in the preparation and sanction of Plan. Section 162: Subsequ	1981, JH Regional Development Authority Act Section 22: Publication of Plan and date of its operation ----- -----

		Educate stakeholders about the goals, strategies, and benefits of the Master Plan, as well as their roles in its implementation.						ment Plan.				ent modification of Plans.	
6	Review and Approval	Present the draft Master Plan to relevant authorities, such as municipal councils, planning boards, or state governments, for review and approval. Incorporate feedback and revisions as necessary to finalize the Master Plan.	Section 10: Submission of plans to the State Government for approval.	Section 12: Review of regional plan. Section 24: Review of Development Plan and Sectoral Plan.	Section 9: Submission of plans to the <u>Central Government</u> for approval. Section 23: Review and modifications of development plan or zoning plan.	Section 19: Sanction of development plans.	Section 10: Submission of plans to the State Government for approval.	Section 27: Approval by the Government.	Section 35: Approval of the State Government to the publication of notice of preparation of Development Plan. Section 37: Approval of the State Government.	Section 19: Sanction of development plans. Section 23: Review and modifications of development plan or zoning plan.	Section 75: Submission of plans to the State government for approval. Section 76: Procedure to be followed in the preparation and approval of the plan. Section 81: Application for permission.	Rajasthan Improvement Trust Act, 1959 Section 6: Submission of Masterplan to government. ----- ----- ----- Rajasthan Municipal Act, 2009 Section 165: Review of Plan.	1981, JH Regional Development Authority Act Section 20: Submission of plan to the state government for approval.
7	Implementation and Monitoring	Develop mechanisms for implementing the Master Plan, including zoning regulations, development incentives, infrastructure investments, and policy reforms. Establish monitoring and evaluation framework to track progress, assess outcomes, and adjust over time.	Section 12: Date of commencement of plan.	Section 20: Sanction of development plans. Section 10. Restriction on use of land or development. Section 26: Conformity with the development plan. Section 27: Prohibition of development without permission.	Section 11: Date of operation of plans. Section 11-A (2): Modifications to plan. Section 25: Conformity with the development plan. Section 26: Prohibition of development without permission.	Section 24: State Government to control development and use of land.	Section 12: Date of commencement of plan.	Section 28: Publication of the Development Plan	Section 38: Corning into operation of the Development Plan. Section 45: Prohibition of development without payment of development charges and without permission.	Section 24: State Government to control development and use of land. Section 25: Conformity with the development plan. Section 26: Prohibition of development without permission.	Section 77: Date of commencement of plan	Rajasthan Improvement Trust Act, 1959 Section 7: Date of operation of Master Plan. ----- ----- ----- Rajasthan Municipal Act, 2009 Section 161: Date of operation of Plan. Section 163: Implementation of Plan.	JH Municipal Act, 2009 Section 380: Municipality to implement development plans. ----- ----- ----- 1981, JH Regional Development Authority Act Section 25: Date of operation of Masterplan and Zonal Development plan.

Source: TREADS Analysis

6.5 Ganga Basin States and their Response to the new age URDPFI and NIDM Guidelines

The URDPFI guidelines have incorporated relevant guidance frameworks to accommodate environmental sensibilities and many state TCPOs have used the guidelines to prepare master plans for their respective states. However, the key question on the influence of these guidelines on State T&CP laws are yet to be systematically evaluated especially on matters pertaining to conservation of urban water bodies or disaster risk reduction. The town planning laws are still limited in its scope to deal with urban development vis a vis environmental protection tradeoff.

To elaborate on this, the provisions of the URDPFI and NIDM guidelines are mapped with the T&CP laws of the Ganga Basin States to highlight the extent to which the states attempted to incorporate some of the provisions. The objective is to understand the impact of these new provisions.

Our analysis suggests the varied aspects in which TP laws were modified for certain states but most of the states are yet to incorporate the recommendations of the Model Law of 1985 and NIDM 2004 that potentially could sway the outcome on water body conservation. Most of the state's T&CP laws were drafted in the 1970s although a few have undergone amendments, they are not particularly related to aspects of environmental protection. However, there are

- ▶ **Planning for Green Cities:** The Master Plans of Bihar, Chhattisgarh and West Bengal emphasize reservation and allocation of land for public and green spaces. Details also include types of architecture, recreational areas, parks and green belts. This is targeted at promoting sustainable and environment friendly urban planning.
- ▶ **Disaster Risk Management:** Bihar and West Bengal mandates that Master Plans identify and map disaster-prone areas. The plans also incorporate disaster-risk mitigation and recovery, ensuring resilient urban development.
- ▶ **Land Use Zoning:** Provisions for Natural Hazard, Hazard-prone areas, Natural disaster and mitigation. In the states of Bihar and West Bengal, Master Plans are mandated to incorporate comprehensive information on zoning regulations. The objective is to address natural hazard-prone areas such as those at risk of earthquakes, cyclones, floods and landslides.
- ▶ **Inter-state planning:** The National Capital Region (NCR) Planning Board established under the 1985 National Capital Region Planning Board Act encompasses parts of the states of Haryana, Rajasthan and Uttar Pradesh apart from Delhi. The board maintains conformity of the regional plan, reviews their implementation, approves priority projects and selects areas for development outside the NCR in consultation with the respective state governments.

Table 07: Suggested Modifications in the phases of the Master Plan

Provisions under NIDM Model Law, 2004	Bihar	Section 2 (XXXI). “Natural Hazard Prone Areas” means an area likely to have: (a) moderate to very high damage risk of earthquakes, or (b) moderate to very high damage risk of cyclones, (c) significant flood flow, or (d) landslide potential or proneness to it, or (e) any or more of these hazards. Section 22 (1): Contents of the Development Plan (1) The Planning Authority shall consider and incorporate while preparing the Development Plan, such information and details including land use, Zoning Regulation, development control regulations, and whether the Planning Area is a Natural hazard-prone area, within a time frame of twenty years.
	West Bengal	Section 31 (2) (f): Outline Development Plan: (f) indicate areas or zones for catchment, soil conservation, plantation, unsafe for any construction, subsidence for any reason including operation of mines, earthquake-prone area, and control of natural disasters
Planning for Green Cities	Bihar	Section 21 (2) (iii): Preparation of the Development Plan (iii) Areas reserved for agriculture, public and semi-public, open spaces, parks, playgrounds, gardens and other recreational uses, green belts, heritage area precincts, and natural reserves.
	West Bengal	Section 58 (2) (f): Scope of Development Scheme (f) the allotment or reservation of land for roads, open spaces, gardens, recreation grounds, schools, markets, industrial and commercial activities, green belts and dairies, transport facilities and public purposes of all kinds;
	Chhattisgarh	Section 17: Contents of development plan (ii) open spaces, parks and gardens, green zoological playgrounds, bells, gardens, natural reserves; water bodies, waler course, and sanctuaries.
Disaster Risk Management	Bihar	Section 22 (2) (x): Contents of the Development Plan (x) mapping of vulnerable areas that are disaster-prone and a plan for pre-disaster, disaster mitigation, and post-disaster requirements for a speedy recovery to normal life;
	West Bengal	Section 31 (2) (f): Outline Development Plan: (f) indicate areas or zones for catchment, soil conservation, plantation, unsafe for any construction, subsidence for any reason including operation of mines, earthquake prone area, and control of natural disasters.

6.6 Status of Master Plan coverage for Ganga basin urban areas, with a focus on riverine urban

The number of urban centres in the Ganga Basin States that are covered by statutory Master Plans remains limited. Kumar et al. (2021, pp. 211-212) points out that as of 2016, out of 4041 statutory towns, only 1638 had approved master plans with 363 plans under preparation. The situation was even worse for census towns where 591 towns had approved master plans against a number of 3892 towns. This shows that only 33% of the towns (statutory and Census) of the country had a master plan.

In order to arrive at a comprehensive assessment of the current state of existing spatial planning frameworks in the Ganga Basin States (GBS), especially for the urban areas lying to close proximity to rivers, a disaggregated geographical assessment of the GBS—as riverine areas, basin areas, non-basin areas—has been undertaken. The riverine area has been defined as 25 km on either side of the Ganga and 10 km on either side of its tributaries. A detailed data and methodology for this exercise is given in appendix 1 and also presented in the policy brief: River-Sensitive Urban Planning in the Ganga Basin: Where Do Master Plans Stand?

Our analysis shows that the total population of the GBS is 65 crores of which 21 crores reside in the riverine area. Of this, 16 crores are urban inhabitants in the GBS. The riverine area accounts for the largest share, supporting 7 crores urban inhabitants. The riverine area is also the most urbanised, with an urbanisation rate of 35%. A breakdown by State-level also reinforces this trend for the GBS.

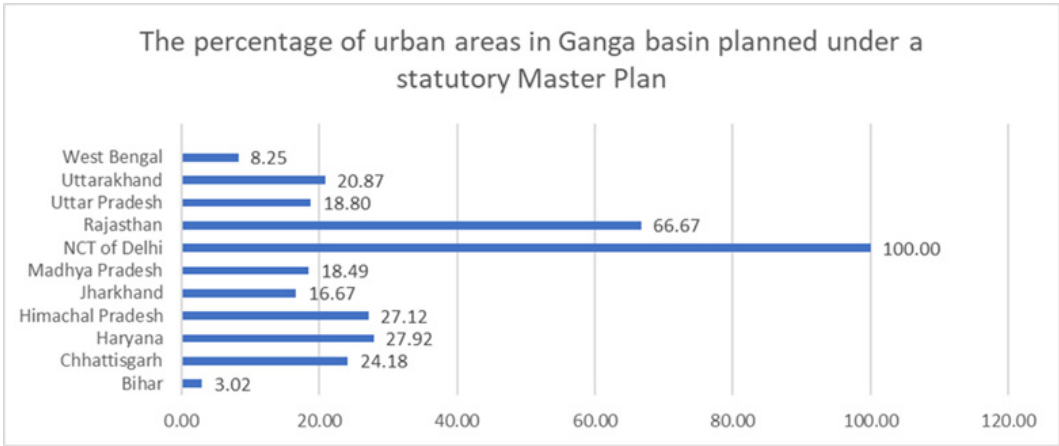
The riverine area has 108 cities. There are 22 million-plus cities located across the entire Ganga basin, of which 12 are located in the riverine area alone, thereby supporting one of the highest concentrations of urban populations across a singular geographical region in the entire country. 4 million-plus cities are located in the basin area, making the Ganga basin region home to 16 million-plus cities.

6 of these million-plus cities are located in Uttar Pradesh — Meerut, Agra, Prayagraj, Kanpur, Lucknow and Varanasi. 2 are located in West Bengal — Kolkata and Howrah, while Bihar has one — Patna. Delhi NCR spans across both banks of the Yamuna and comprises the largest urban agglomeration in the Ganga basin. Apart from the million-plus cities, the riverine area also supports a substantial number of cities. In the riverine area, Bihar has 13 cities, Uttar Pradesh has 26 and West Bengal has 41 cities. This pattern of urban distribution reinstates the central role of the riverine area as the most urbanised zone within the GBS.

6.6.1 Urban areas in the GBS which has statutory Master Plans

Out of 3647 urban settlements of the GBS, only 817 have a Master Plan: showing that only 22.4% of the urban area in GBS is even covered under a statutory planning framework. Excluding the NCR of Delhi, the state of Rajasthan which has the highest proportion of its urban areas covered by a Master Plan, with 66.67%. However, among the core basin states, Uttarakhand has 20.87% of its urban areas covered under a Master Plan, followed by Uttar Pradesh at 18.8% and West Bengal at 8.25%. Bihar has only 3% of its urban areas covered under the Master Plan. This highlights a dismally low implementation of spatial planning with the statutory Master Plan covering only a fraction of urban areas in the core basin states. A substantial section of urbanisation in the Ganga Basin continues outside the ambit of statutory Master Plans.

Fig 01: Percentage of urban areas within the Ganga basin covered by statutory Master Plans (with K)



Source: TREADS Analysis based on calculations for urban settlements is based on Census of India 2011, Primary Census Abstract – Village and Town Directory, and Calculations for availability of Master Plans is based on (UPTPD, 2024), (UHUDA, 2024), (TCPHARYANA, 2024), (UDHDJH, 2024), (TPDRJ, 2024), (TCPCHG, 2024), (MPTP, 2024), (DDA, 2024), (UDHDBH, 2024), (DTCPPH, 2024)

6.6.2 Distribution of urban settlements which has statutory Master Plans by categories- state-wise and by Riverine, Basin and non-basin areas

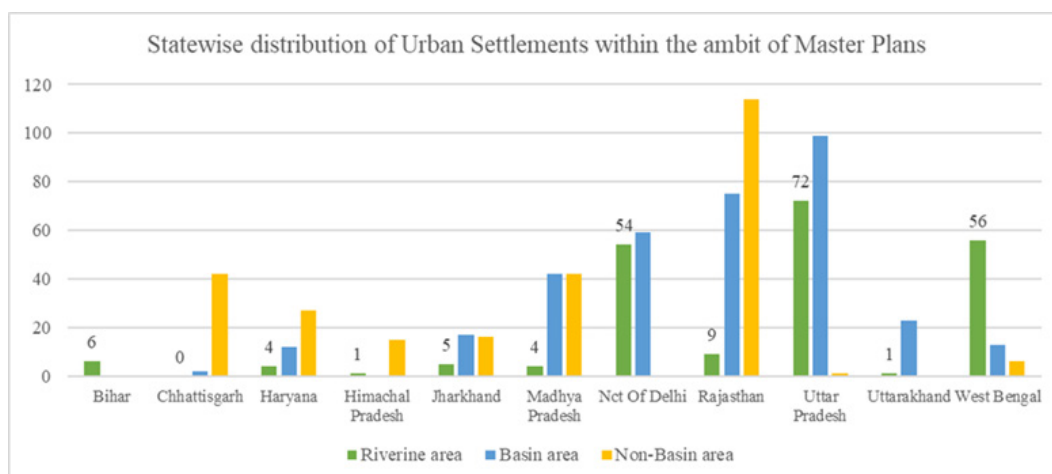
Out of a total of 817 urban settlements in the entire basin covered by Master Plans, 26% i.e. 212 urban settlements lie in the riverine area. This translates into an absence of Master Plans for the remaining 74% of urban areas lying in the crucial riverine area. The largest proportion of coverage has been achieved for the urban areas in the basin area- with 42%, i.e. 342 urban settlements being covered. This shows an absence of Master Plans for 58% of urban areas in the basin areas. Outside the basin area, 263 (32%) has been covered under the Master Plans.

This distribution points out how less than one-third of the urban areas of the crucial riverine areas are covered by a Master Plan.

In Uttar Pradesh, 72 urban settlements in riverine areas and 99 urban settlements in the basin area are covered by Master Plans. In West Bengal, there are Master Plans for 56 urban settlements in the riverine areas and only 13 basin urban settlements are covered. For Bihar, 6 urban settlements in the riverine areas have Master Plans, whereas no urban settlement in the basin area is covered under Master Plans.

In the figure below, this aggregation of urban settlements within the ambit of Master Plans has been depicted, with absolute numbers highlighted for urban settlements in the riverine areas.

Fig 02: State wise distribution of urban settlements within the ambit of the Master Plans as seen within the Riverine area, basin area and non-basin area (with K)



Source: TREADS Analysis based on calculations for urban settlements is based on Census of India 2011, Primary Census Abstract – Village and Town Directory, and Calculations for availability of Master Plans is based on (UPTPD, 2024), (UHUDA, 2024), (TCPHARYANA, 2024), (UDHDJH, 2024), (TPDR, 2024), (TCPG, 2024), (MPTP, 2024), (DDA, 2024), (UDHDBH, 2024), (DTCPPH, 2024)

A further breakdown of the existing spatial planning response by urban categories (million plus cities, cities, large towns, medium towns) has been carried out in the policy brief, as previously mentioned.

Master Plan coverage under AMRUT and Master Plan coverage for Census Towns (CTs) also presents gaps in coverage. Under AMRUT, a total of 213 master plans have been prepared for five states within the Ganga basin. The highest number of plans has been prepared for Uttar Pradesh – 63 plans, followed by 61 plans for Rajasthan. The other three states include West Bengal, Madhya Pradesh and Himachal Pradesh with 43, 38 and 8 GIS-based master plans respectively. For CTs, meaningful coverage has only been achieved under the Delhi NCR Master Plan. Among the 817 urban settlements in the GBS covered by Master Plans, 252 are CTs, indicating a 30.8% coverage of CTs within the spatial planning process. Among the CTs, 27.4% are located in the riverine area, 45.6% lie in the basin area and 27% lie in the non-basin area. For more details of analysis, the policy brief can be referred to.

Detailed lists of urban areas covered by the Master Plan have been provided in the Annexures 2 to 5.

07 Conclusion

The NGP takes cognizance of the problem of river pollution as a systemic one and recognises cities as part of the larger river ecosystem. This report has explored how the Master Plan – India's sole statutory planning instrument can be reimagined to support the goals of river rejuvenation.

The analysis shows that the existing Master Plan instrument has structural limitations and legal rigidities. These gaps have challenged the inclusion of water related sensibilities into spatial planning through the Master Plan till now. This arises primarily because the concept, configuration, rationalities of, and the institutional structures surrounding the Master Plan instrument are conceived by legislations drafted before 1970s – by states, per the federal organization of powers. In contrast, India's environmental renaissance began after the Stockholm Conference in 1972 - when the Government of India enacted the Water Act 1974, to control and prevent water pollution. While this is a central legislation primarily focused on industrial pollution, the legal and institutional frame of the Master Plan remained unchanged with its archaic conceptions for planning and governing urban growth in India (Chokkakula, 2023).

However, the Master Plan's influence on the structure and growth of Indian cities remains unparalleled. It continues to be the most authoritative mechanism for defining urban spatial futures, and therefore, it is essential to acknowledge the strengths of the instrument while exploring areas for reform. Two developments testify that the Master plan tool can be successfully reimagined and deployed for water-centric planning practices:

First, NMCG has already begun promotion of river considerations within the Master Plans through the organisation of River-sensitive Master planning (RSMP) training programs across states (Press Information Bureau, 2025).

Second, NMCG in collaboration with NIUA, through its RCA platform has initiated the preparation of URMPs (Press Information Bureau, 2025).

Third, within the community of urban practitioners, there has been a widespread acknowledgement that the T&CP laws and the Master plan too have to be revised in order to accommodate emerging environmental sensibilities. Given these developments, NMCG can lead, build linkages and support water-centric urban practices by working with states on the following fronts:

1. Support the State Urban Development Authorities/ T&CP Departments to revise their respective urban Development Acts in order to accommodate water-sensitive planning provisions.

In a planning ecosystem, where programmatic plans co-exist with statutory plans, the T&CP laws are seldom sidelined. This is well reflected in the NITI Aayog report on Reforms in urban planning capacity in India (2021) where cities have an abysmal rate of plan preparation. The Urban Development law is generally flexible and the discretion of the master plan preparation and the terms of reference are left with UDA.

However, without a legal framework, the Master Plan seldom incorporates measures of environmental sustainability, disaster risks, or creatively deploys other environmental laws to ensure water body protection. Although many states prepare annual environmental status reports, they are seldom taken as an input for master plan preparation (Phatak, 2024). Such ambiguities around accommodating changing dynamics of India's political economy in T&CP laws remain. In the last two decades, it has been increasingly realised that in order to tackle the variety of environmental challenges that cities (riverine most prominently) face, revising T&CP laws is necessary. Two important reports in recent time validate this: a) The 2021 NITI Aayog report on 'Urban Planning Capacity' in India and b) The 2022 High-Level Committee (HLC) on Urban Planning. The emerging narratives around this are:

- NITI Aayog recommended forming an apex committee at the State level, to study the efficacy of the State T&CP Act and also to undertake a regular review of planning legislations, including T&CP or urban and regional development acts or other relevant acts.
- The HLC observed that India's current legal framework for T&CP is outdated and inadequate for unlocking the full potential of urban areas and that it requires a comprehensive overhaul to align with contemporary needs.
- Policy deliberations like the 'National Expert Roundtable on Climate Sensitive Urban Planning' concluded that revisions in the Master Plan section of the T&CP Act are crucial and should mandate plans to be looked at from a hydrological, ecological perspective or climate perspective.
- In 2018, MoHUA published guidelines for preparing a river zonal development plan, regulations for urban river zoning, regulations for eco-sensitive zones and water bodies, and broader guiding principles for the purpose of restoration or conservation of rivers.
- Many states and individual cities have creatively deployed bye-laws and DCR to address the emerging ecological concerns. However, building bye-laws and DCRs essentially regulated private developments, conforming to the Master Plan and the T&CP Laws. However, Phatak (2004) points out that building by-laws 'cannot be considered in isolation' but need to be reimagined taking into account the larger canvas of urban development laws and infrastructure management.

In line with this shifting perspective of the need for amending the T&CP laws, states have also begun to view it as a necessary step in order to accommodate environmental sensibilities into the planning framework. For instance:

- Tamil Nadu is aiming at incorporating disaster risk measures.
- West Bengal has amended its building bye-laws for conservation of river banks.
- Other states are considering amending the T&CP laws to mandate LAP within T&CP law.
- Some states are proactively taking measures to include LAP and TP schemes by amending the T&CP Law. For instance, the Uttarakhand Urban and Country Planning and Development (Amendment) Act, 2022, inserted a new section (Section 9A after the principal Act) to mandate preparation of 'Local Area Plan and Town Planning Schemes' and substituted the heading of Chapter III of the principal Act to Master Plan, Zonal Development Plan, Local Area Plan and Town Planning Scheme.
- The challenge of mainstreaming other supplementary plans such as Climate Action Plan, etc. is a major point of consideration in driving the amendment for T&CP law for the states. Examples include Mumbai and Bangalore.
- There is also a renewed interest from MoHUA to incorporate Local Area Plans for brownfield development and TP Schemes for green field development. Integration of LAPs TP scheme with masterplans is essential for effective urban planning and governance, ensuring that development strategies are responsive to the diverse needs and contexts of local development.

Although these changes are to be welcomed, the macro picture however, continues to be ad-hoc, in which the broader legal framework of Urban and Regional Planning remains static and inadequate to respond to actively incorporating water-sensitive planning provisions. This is where NMCG can effectively intervene and take forward the agenda of river-sensitive urban planning. Some pathways can be:

- NMCG can actively support and work with the Urban Development Authorities/ T&CP Departments to reframe their Urban Development (UD) Acts to better accommodate emerging environmental challenges as well as embed water-sensitive planning into the UD Act itself.
- NMCG can also take into consideration the kind of legislative changes that will be required to incorporate the framework provided by the URMP into the city's Master Plan.
- NMCG can also support and work with the states in updating and revising the TP legislations, across different levels, starting with the UD Act, byelaws/DCRs etc or other related laws such as land and environment.

2. NMCG needs to handhold cities on priority to achieve coverage under statutory Master Plans

A detailed analysis of the coverage achieved by Master plans for the Ganga basin urban centres has been done in the Policy Brief submitted to NMCG, 'River-Sensitive Urban Planning in the Ganga Basin: Where Do Master Plans Stand?'. The brief discusses the existing spatial planning response in the Ganga Basin through key parameters such as a) Urban areas in the GBS which has statutory Master Plans, b) Distribution of urban settlements which has statutory Master

Plans by state-wise and by Riverine, Basin and non-basin areas categories, c) Distribution of urban settlements which has statutory Master Plans by urban categories in Riverine, Basin and Non-basin areas at State-level, d) Master Plans prepared under AMRUT and e) Master Plans for Census Towns.

The analysis shows that urbanisation in the Ganga Basin is complex – high density of settlements, a large number of medium and large towns, especially Census Towns (CTs). Out of a total of 817 urban settlements in the entire basin covered by Master Plans, 26% i.e. 212 urban settlements lie in the riverine area. This translates into an absence of Master Plans for the remaining 74% of urban areas lying in the crucial riverine area.

A detailed break-down of the coverage of Master Plans for urban areas across four population cohorts: million plus cities, cities, large towns and medium towns, disaggregated by their geographical location – in the riverine areas, basin and non-basin areas shows that the focus of spatial planning in the GBS has remained on the largest cities – the million plus cities, as all of them have been covered by Master Plans. The coverage of statutory spatial plans declines as we move down the urban hierarchy- to cities and then to large towns and medium towns. Meaningful inclusion of CTs has only been achieved under the Delhi NCR Master Plan. CTs in the riverine area continue to grow without accounting for water-sensitive spatial plans in place.

The analysis has shown the central role of the riverine area as the most urbanised zone within the GBS, which makes the riverine area a critical geographical belt for any spatial planning interventions. Since urbanisation is dense and influenced by proximity to rivers, the Master Plan, with its statutory mandate, becomes the critical planning intervention that water-sensitive urbanisation requires. Given the large and complex scale of urbanisation in the Ganga Basin, NMCG can meaningfully intervene by:

- Identifying vulnerable cities and towns without Master plans which lie on the bank of rivers or in close proximity to rivers.
- Handholding such priority cities to be covered by statutory master plans.

3. NMCG needs to ensure that Base Map preparation should be further detailed to include environmental components.

The preparation of the Base Map constitutes an important step in the entire Master Planning process. It serves as a foundation for land-use planning, depiction of drainage of the area, capturing existing water resources in order to facilitate protection and management of sensitive environmental elements in the planning area while ensuring development. Ground-truthing and aligning on-ground water bodies, seasonal streams, and fragile ecosystems onto the base map not only ensures habitat protection but also allows for streamlined urban planning for what lies on the ground.

However, in many Ganga Basin States, the Base Map preparation process is often inadequate, disjointed from ground realities thereby failing to incorporate environmental sensibilities. The process itself is challenged by inconsistencies in scale and resolution, fragmented data sources, ultimately leading to a weak incorporation of environmental components like wetlands, lakes, small ponds, seasonal drainage channels.

-
- Base Maps need to be further detailed accounting of existing water bodies and including environmental components. Drainage and catchment area mapping for the Base Map can be supported by the NMCG through institutional collaborations.
-
- NMCG can also support the preparation of an Environmental Sensitivity Overlay (ESO) or identifying 'Eco-sensitive zones' or 'Conservation Zones' to fully capture critical habitats around rivers, wetlands, erosion-prone zones, areas of the floodplains prone to recurring floods.
-
- NMCG can lead the standardisation of Base Map preparation protocols across the Ganga Basin states. This can be facilitated through enforcing data-sharing agreements among basin states and capacity building.

While NMCG has already begun the use of Light Detection and Ranging (LiDAR) mapping and other advanced geospatial technologies, such impactful efforts need to be scaled up. A systematic implementation of such efforts in preparation of base maps across urban centres lying on the bank of rivers will be a positive step in accommodating water-sensitivity into the master planning process.

4. NMCG needs to ensure aligning programmatic plans with statutory master Plans for water-sensitive planning practices

Statutory master plans are prepared by using T&CP laws. Apart from the statutory master plans there is a wide gamut of plans- sectoral, programmatic and other spontaneous plans - formal or informal such as climate action plan which interact and shape the statutory master plan. Given this planning ecosystem, can the Master Plan prepared under the T&CP laws facilitate convergence of other non-statutory plans prepared by the city? How does the T&CP respond to such multiplicity of plans in the urban planning domain?

It has been frequently debated that such non-statutory or programmatic plans prepared by various agencies and institutions other than the Town Planning or Urban Planning Department are often not mainstreamed or integrated with the master plans. The challenge of convergence between statutory plans vis a vis the other programmatic/ supplementary plans remains a viable challenge for river-centric planning.

Several programmatic plans seek to align their timelines and function as a sub-component of the master plan. For example, the URMPs seek to act as a sub-component under the existing Master Plan of the respective cities, aligning itself with the same timeline. Five cities, namely, Bareilly, Kanpur, Moradabad, Ayodhya and Chhatrapati Sambhaji Nagar have already developed their URMPs. As a part of the first phase, there is already a target to prepare URMPs for 25 more urban centres, within the larger mission to create 60 such plans across India in the next 2 - 3 years (Press Information Bureau, 2025).

The integration of URMP provisions into the Master Plan can facilitate controlled development along the ecologically sensitive floodplains. In order to promote water-sensitive planning practices, NMCG needs to ensure that the programmatic plans for river rejuvenation are aligned with the statutory Master Plans.

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Annexure 1: Details of data and methodology followed for the analysis of the Ganga Basin States urban by geographical categories of riverine, basin, non-basin

A. Data sources

The analysis has used GIS and Census of India, 2011 as its data sources. From Census of India, the Primary Census Abstract (PCA) has been accessed. The PCA provides basic information on the characteristics of the population. Area, the total Number of Households, Total Population, Scheduled Castes, Scheduled Tribes Population, Population in the age group 0-6, Literates, five categories of workers including non-workers, Scheduled Castes, Scheduled Tribes, Institutional and Houseless Population. These population characteristics are classified by sex as well as their residence-rural and urban. The analysis has drawn data on population categories at 'village' and 'town' levels from the PCA. The data on area for the villages and towns has been taken from the Village and Town Directories, Census of India, 2011.

A set of shapefiles comprises the main data source for the Geographic Information System (GIS) analysis, which has been sourced from The National Mission for Clean Ganga (NMCG) and the Centre for Policy Research, New Delhi. The NMCG shape files includes a) State level data outlining state boundaries, b) data on drainage which encompasses the Ganga basin, all river drainage systems within India, all river basins throughout the nation, data on all rivulets across India. The third set of shape files consists of villages and towns of India, from which the Ganga basin states have been selected for this analysis.

B. Methodology

The objective for the analysis is to find out how population is distributed in the Ganga basin area, with a focus on urbanisation. 11 states comprise the Ganga Basin States, as identified by the NMCG. They include: Himachal Pradesh, Uttarakhand, Delhi, Haryana, Rajasthan, Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh and West Bengal. The tributaries of the Ganga which drain these States are multiple, and therefore we have selected the major tributaries of the Ganga, as identified by the NMCG. We have considered these tributaries for our analysis: Yamuna, Chambal, Betwa, Ken, Sone, Hooghly on the South bank and Mahananda, Kosi, Gandhak, Gomti, Ghaggra and Ramganga of the northern bank of Ganga.

In order to understand population distribution, we classify the data into three spatial categories, which help us understand how basin area population compares to non-basin area population. Further, within the basin, how the presence of rivers act as a determining factor for population distribution. In order to formulate this, we demarcate a riverine area for the Ganga and its tributaries, by taking 25 kms on either side of the Ganga as its riverine area and 10 km on either side of its tributaries as their riverine area. This riverine area comprises the first spatial category for our analysis. The second spatial category is the Ganga basin, i.e., the watershed area drained by the Ganga and its tributaries. The third spatial category is the non-basin area within the 11 States administratively considered as the Ganga Basin States. We classify the settlements based on their locational characteristics into these three categories for our analysis. If a settlement satisfies the condition of being located within 10 km of the Ganga or its tributaries, it becomes part of the riverine spatial criteria. Similarly, for the basin area category, the settlement needs to lie within the demarcated basin area but outside the riverine area. The settlements which are located outside the basin spatial criteria but within the state are classified into the non-basin spatial criteria.

Under this criterion, settlements are classed into: All settlements, Basin settlements and Riverine settlements. There are 86,938 settlements under riverine area; 2,76,571 settlements under Basin area and 3,92,565 settlements come under the criteria of All settlements. Once the settlements are classified into these three categories, we continue our analysis with the data from Census of India, 2011. We merged these three categories of spatial data with the PCA of Census 2011 in order to obtain village/town population corresponding to rural/urban identifiers. We then used the village and town directory to populate the area data into the main data set of settlements in the 11 Ganga basin states.

The areal units differed in the village and town directory; it was hectares in the village directory and sq. km in the town directory. We converted hectares into sq.km in order to bring uniformity to the areal data (Formula for conversion: 1 hectare = 0.01 sq. km). Within the Census data, the area for some villages were not given and therefore, we have excluded certain villages from our density analysis.

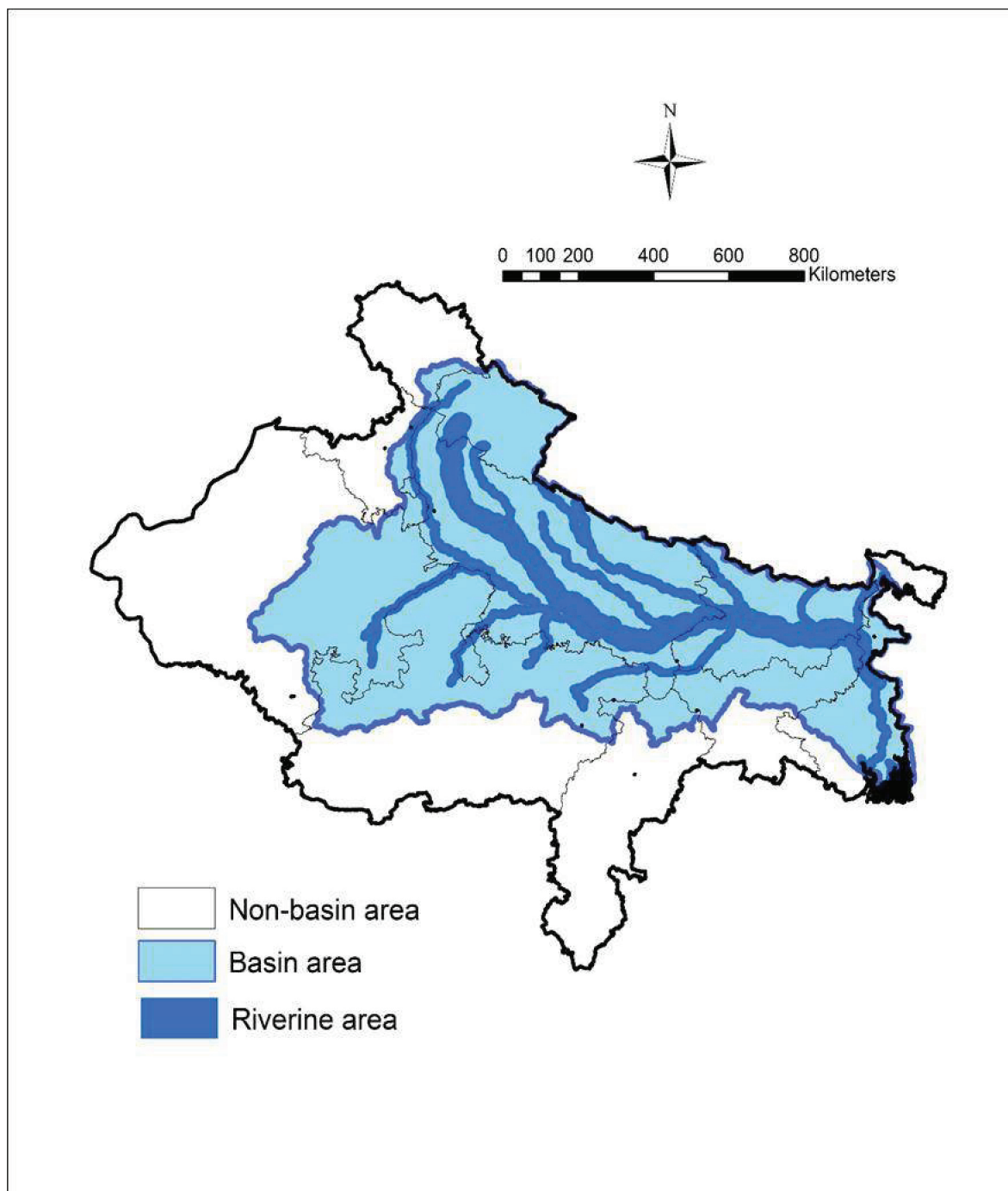
C. Limitations of the data sets and its implication on the analysis

There are some limitations for the data set that has been used. A crucial limitation was the multiple reference system in the data sets. The Reference system for the basin shape file is BTM (Bangladesh Transverse Mercator) which is country-specific. It was challenging to convert the reference system to match a universal reference system like the WGS (World Geodetic System) 84.

Identification of the tributaries in the shape file was problematic because of inconsistent labelling. In some places, the tributaries have been created with multiple file names (attribute names) leading to absence of the channel, when then had to be digitised. At multiple places, there were instances of joining the gap owing to the absence of a digitised channel of tributaries. Sections of these tributaries had to be joined manually over the already digitised data: Kosi, Ramganga, Gomti, Mahananda and Hooghly. The Hooghly feeder canal has also been manually joined to maintain continuity of the river system.

Further, the shape files are not an example of clean data. A line data best represents channel flow; however, the digitised shape file has used polygon data which gives rise to inaccuracy. The shape files are also outcomes of poor quality of digitisation. The digitised channel of the river is not aligned with the actual channel on the ground, even when accounting for standard error margins. For our analysis which is based on the creation of spatial categories and allocating settlements into each category based on its location, the challenge of unclean poorly digitised data opens the possibility of distortions in allocation of the settlements into these spatial categories.

Map: : The Ganga Basin States with Riverine area, Basin Area and Non-Basin Area



Source: Prepared by Shamindra N. Roy, PhD

Due acknowledgement to Dr. Kanhu Charan Pradhan, PhD and Shamindra N. Roy, PhD in contributing to this analysis.

Annexure 2: List of Metros or Million plus Cities under Master Plans

S. No.	Name of Settlement	Settlement category	State	S. No.	Name of Settlement	Settlement category	State
1	Patna	Riverine	Bihar	12	Jodhpur	Non-Basin	Rajasthan
2	Raipur	Non-Basin	Chhattisgarh	13	Kota	Riverine	Rajasthan
3	Faridabad	Riverine	Haryana	14	Agra	Riverine	Uttar Pradesh
4	Dhanbad	Basin	Jharkhand	15	Prayagraj / Allahabad	Riverine	Uttar Pradesh
5	Ranchi	Non-Basin	Jharkhand	16	Ghaziabad	Riverine	Uttar Pradesh
6	Bhopal	Non-Basin	Madhya Pradesh	17	Kanpur	Riverine	Uttar Pradesh
7	Gwalior	Basin	Madhya Pradesh	18	Lucknow	Riverine	Uttar Pradesh
8	Indore	Non-Basin	Madhya Pradesh	19	Meerut	Basin	Uttar Pradesh
9	Jabalpur	Non-Basin	Madhya Pradesh	20	Varanasi	Riverine	Uttar Pradesh
10	NDMC	Riverine	NCT of Delhi	21	Howrah / Haora	Riverine	West Bengal
11	Jaipur	Basin	Rajasthan	22	Kolkata	Riverine	West Bengal

Annexure 3: List of Cities under Master Plans. Population cohort 1,00,000-10,00,000

S. No.	Name of Settlement	Settlement category	State	S. No.	Name of Settlement	Settlement category	State
1	Danapur (Dinapur Nizamat)	Riverine	Bihar	101	Sujargarh	Non-Basin	Rajasthan
2	Ambikapur	Basin	Chhattisgarh	102	Tonk	Basin	Rajasthan
3	Bhilai	Non-Basin	Chhattisgarh	103	Udaipur	Non-Basin	Rajasthan
4	Bilaspur	Non-Basin	Chhattisgarh	104	Akbarpur (Up-1) or Akbarpur	Basin	Uttar Pradesh

5	Dhamtari	Non-Basin	Chhattisgarh	105	Aligarh	Basin	Uttar Pradesh
6	Durg	Non-Basin	Chhattisgarh	106	Amroha	Basin	Uttar Pradesh
7	Jagdalpur	Non-Basin	Chhattisgarh	107	Azamgarh	Basin	Uttar Pradesh
8	Korba	Non-Basin	Chhattisgarh	108	Ballia	Riverine	Uttar Pradesh
9	Raigarh	Non-Basin	Chhattisgarh	109	Banda	Riverine	Uttar Pradesh
10	Rajnandgaon	Non-Basin	Chhattisgarh	110	Baraut	Riverine	Uttar Pradesh
11	Ambala	Non-Basin	Haryana	111	Bareilly	Riverine	Uttar Pradesh
12	Bahadurgarh	Basin	Haryana	112	Basti	Basin	Uttar Pradesh
13	Bhiwani	Non-Basin	Haryana	113	Budaun	Riverine	Uttar Pradesh
14	Gurugram	Basin	Haryana	114	Bulandshahr	Basin	Uttar Pradesh
15	Hisar	Non-Basin	Haryana	115	Chandausi	Basin	Uttar Pradesh
16	Jagdhari	Riverine	Haryana	116	Deoria	Basin	Uttar Pradesh
17	Jind	Non-Basin	Haryana	117	Etah	Basin	Uttar Pradesh
18	Kaithal	Non-Basin	Haryana	118	Etawah	Riverine	Uttar Pradesh
19	Karnal	Riverine	Haryana	119	Farukhabad	Riverine	Uttar Pradesh
20	Palwal	Basin	Haryana	120	Fatehpur	Riverine	Uttar Pradesh
21	Panchkula	Non-Basin	Haryana	121	Firozabad	Riverine	Uttar Pradesh
22	Panchkula Extension-I	Non-Basin	Haryana	122	Ghazipur	Riverine	Uttar Pradesh

23	Panipat	Basin	Haryana	123	Gorakhpur	Basin	Uttar Pradesh
24	Rewari	Non-Basin	Haryana	124	Greater Noida	Riverine	Uttar Pradesh
25	Rohtak	Basin	Haryana	125	Hapur	Basin	Uttar Pradesh
26	Sirsa	Non-Basin	Haryana	126	Hardoi	Basin	Uttar Pradesh
27	Sonipat	Basin	Haryana	127	Hathras	Basin	Uttar Pradesh
28	Shimla	Non-Basin	Himachal Pradesh	128	Jaunpur	Riverine	Uttar Pradesh
29	Adityapur	Non-Basin	Jharkhand	129	Jhansi	Riverine	Uttar Pradesh
30	Chas	Non-Basin	Jharkhand	130	Kasganj	Riverine	Uttar Pradesh
31	Deoghar	Basin	Jharkhand	131	Khurja	Basin	Uttar Pradesh
32	Giridih	Basin	Jharkhand	132	Lakhimpur	Basin	Uttar Pradesh
33	Hazaribagh	Basin	Jharkhand	133	Lalitpur	Basin	Uttar Pradesh
34	Hussainabad	Non-Basin	Jharkhand	134	Loni	Riverine	Uttar Pradesh
35	Jamshedpur	Non-Basin	Jharkhand	135	Mathura	Riverine	Uttar Pradesh
36	Mango	Non-Basin	Jharkhand	136	Mau	Basin	Uttar Pradesh
37	Betul	Non-Basin	Madhya Pradesh	137	Mirzapur-cum-Vindhyachal	Riverine	Uttar Pradesh
38	Bhind	Basin	Madhya Pradesh	138	Modinagar	Basin	Uttar Pradesh
39	Burhanpur	Non-Basin	Madhya Pradesh	139	Moradabad	Riverine	Uttar Pradesh
40	Chhatarpur	Basin	Madhya Pradesh	140	Mughalsarai	Riverine	Uttar Pradesh

41	Chhindwara	Non-Basin	Madhya Pradesh	141	Muzzafarpur	Riverine	Uttar Pradesh
42	Damoh	Basin	Madhya Pradesh	142	Noida	Riverine	Uttar Pradesh
43	Datia	Basin	Madhya Pradesh	143	Orai	Basin	Uttar Pradesh
44	Dewas	Non-Basin	Madhya Pradesh	144	Pilibhit	Basin	Uttar Pradesh
45	Guna	Basin	Madhya Pradesh	145	Raebareli	Basin	Uttar Pradesh
46	Hoshangabad	Non-Basin	Madhya Pradesh	146	Rampur	Basin	Uttar Pradesh
47	Katni (Murwara)	Basin	Madhya Pradesh	147	Saharanpur	Basin	Uttar Pradesh
48	Khandwa	Non-Basin	Madhya Pradesh	148	Sambhal	Basin	Uttar Pradesh
49	Khargone	Non-Basin	Madhya Pradesh	149	Shahjahanpur	Basin	Uttar Pradesh
50	Mandsaur	Basin	Madhya Pradesh	150	Shamli	Basin	Uttar Pradesh
51	Morena	Basin	Madhya Pradesh	151	Shikohabad	Basin	Uttar Pradesh
52	Nagda	Basin	Madhya Pradesh	152	Sitapur	Basin	Uttar Pradesh
53	Neemuch	Basin	Madhya Pradesh	153	Unnao	Riverine	Uttar Pradesh
54	Pithampur	Non-Basin	Madhya Pradesh	154	Dehradun	Basin	Uttarakhand
55	Ratlam	Basin	Madhya Pradesh	155	Haldwani Kathgodam	Basin	Uttarakhand
56	Rewa	Basin	Madhya Pradesh	156	Haridwar	Riverine	Uttarakhand
57	Sagar	Basin	Madhya Pradesh	157	Kashipur	Basin	Uttarakhand
58	Satna	Basin	Madhya Pradesh	158	Rudrapur	Basin	Uttarakhand

59	Sausar	Non-Basin	Madhya Pradesh	159	Asansol	Basin	West Bengal
60	Sehore	Non-Basin	Madhya Pradesh	160	Baidyabati	Riverine	West Bengal
61	Seoni	Non-Basin	Madhya Pradesh	161	Bally	Riverine	West Bengal
62	Shivpuri	Basin	Madhya Pradesh	162	Bansberia	Riverine	West Bengal
63	Singrauli	Basin	Madhya Pradesh	163	Baranagar	Riverine	West Bengal
64	Vidisha	Non-Basin	Madhya Pradesh	164	Barasat	Riverine	West Bengal
65	Bhalswa Jahangir Pur (CT)	Riverine	NCT of Delhi	165	Bardhaman	Basin	West Bengal
66	Burari (CT)	Riverine	NCT of Delhi	166	Barrackpore	Riverine	West Bengal
67	Dallo Pura (CT)	Riverine	NCT of Delhi	167	Bhadreswar	Riverine	West Bengal
68	Deoli (CT)	Riverine	NCT of Delhi	168	Champdani	Riverine	West Bengal
69	Gokal Pur (CT)	Riverine	NCT of Delhi	169	Chandannagar	Riverine	West Bengal
70	Hastsal (CT)	Basin	NCT of Delhi	170	Dabgram	Riverine	West Bengal
71	Karawal Nagar (CT)	Riverine	NCT of Delhi	171	Dum Dum	Riverine	West Bengal
72	Kirari Suleman Nagar (CT)	Basin	NCT of Delhi	172	Durgapur	Basin	West Bengal
73	Mandoli (CT)	Riverine	NCT of Delhi	173	Haldia	Riverine	West Bengal
74	Mustafabad (CT)	Riverine	NCT of Delhi	174	Halisahar	Riverine	West Bengal
75	Nangloi Jat (CT)	Basin	NCT of Delhi	175	Hugli-Chinsurah	Riverine	West Bengal
76	NDMC (Part)	Riverine	NCT of Delhi	176	Jalpaiguri	Non-Basin	West Bengal

77	Sultan Pur Majra (CT)	Basin	NCT of Delhi	177	Jamuria	Basin	West Bengal
78	Ajmer	Basin	Rajasthan	178	Kalyani	Riverine	West Bengal
79	Alwar	Basin	Rajasthan	179	Kanchrapara	Riverine	West Bengal
80	Banswara	Non-Basin	Rajasthan	180	Kharagpur	Non-Basin	West Bengal
81	Baran	Basin	Rajasthan	181	Khardah	Riverine	West Bengal
82	Beawar (Ajmer)	Basin	Rajasthan	182	Kulti	Basin	West Bengal
83	Bharatpur City	Basin	Rajasthan	183	Madhyamgram	Riverine	West Bengal
84	Bhilwara	Basin	Rajasthan	184	Maheshtala	Riverine	West Bengal
85	Bikaner	Non-Basin	Rajasthan	185	Naihati	Riverine	West Bengal
86	Bundi	Basin	Rajasthan	186	North Barrackpore	Riverine	West Bengal
87	Chittorgarh	Basin	Rajasthan	187	North Dum Dum	Riverine	West Bengal
88	Churu	Non-Basin	Rajasthan	188	Panihati	Riverine	West Bengal
89	Dholpur	Riverine	Rajasthan	189	Rajarhat Gopalpur	Riverine	West Bengal
90	Gangapur BHL	Basin	Rajasthan	190	Rajpur Sonarpur	Riverine	West Bengal
91	Gangapur City	Basin	Rajasthan	191	Raniganj	Basin	West Bengal
92	Greater Bhiwadi	Non-Basin	Rajasthan	192	Rishra	Riverine	West Bengal
93	Hanumangarh	Non-Basin	Rajasthan	193	Serampore	Riverine	West Bengal
94	Hindaun	Basin	Rajasthan	194	Siliguri	Riverine	West Bengal

95	Jhunjhunu	Non-Basin	Rajasthan	195	South Dum Dum	Riverine	West Bengal
96	Kishangarh	Basin	Rajasthan	196	Titagarh	Riverine	West Bengal
97	Nagaur	Non-Basin	Rajasthan	197	Uluberia	Riverine	West Bengal
98	Pali	Basin	Rajasthan	198	Uttarpara Kotrung	Riverine	West Bengal
99	Sawaimadhopur	Basin	Rajasthan				
100	Sikar	Basin	Rajasthan				

Annexure 4: List of Large Towns under Master Plans. Population cohort 50, 000 - 1,00,000

S. No.	Name of Settlement	Settlement category	State	S. No.	Name of Settlement	Settlement category	State
1	Phulwari Sharif	Riverine	Bihar	58	Sadat Pur Gujran (CT)	Riverine	NCT of Delhi
2	Bhatapara	Non-Basin	Chhattisgarh	59	Sahibabad Daulat Pur (CT)	Riverine	NCT of Delhi
3	Mahasamund	Non-Basin	Chhattisgarh	60	Taj Pul (CT)	Riverine	NCT of Delhi
4	Dadri	Non-Basin	Haryana	61	Ziauddin Pur (CT)	Riverine	NCT of Delhi
5	Fatehabad	Non-Basin	Haryana	62	Abu Road	Non-Basin	Rajasthan
6	Hansi	Non-Basin	Haryana	63	Balotara	Non-Basin	Rajasthan
7	Hodal	Basin	Haryana	64	Bari	Basin	Rajasthan
8	Narwana	Non-Basin	Haryana	65	Barmer	Non-Basin	Rajasthan
9	Panipat	Basin	Haryana	66	Deedwana	Non-Basin	Rajasthan
10	Tohana	Non-Basin	Haryana	67	Fatehpur	Non-Basin	Rajasthan
11	Chaibasa	Non-Basin	Jharkhand	68	Jaisalmer	Non-Basin	Rajasthan
12	Chakradharpur	Non-Basin	Jharkhand	69	Jalore	Non-Basin	Rajasthan

13	Gumla	Non-Basin	Jharkhand	70	Jhalawar Jhalarapatan	Riverine	Rajasthan
14	Jhumritilaiya	Basin	Jharkhand	71	Karauli	Basin	Rajasthan
15	Lohardaga	Non-Basin	Jharkhand	72	Kuchaman City	Basin	Rajasthan
16	Medininagar	Basin	Jharkhand	73	Laxmangarh	Basin	Rajasthan
17	Phusro	Basin	Jharkhand	74	Makrana	Basin	Rajasthan
18	Sahibganj	Riverine	Jharkhand	75	Nawalgarh	Non-Basin	Rajasthan
19	Ashta	Non-Basin	Madhya Pradesh	76	Nimbahera	Basin	Rajasthan
20	Balaghat	Non-Basin	Madhya Pradesh	77	Nokha	Non-Basin	Rajasthan
21	Bina	Riverine	Madhya Pradesh	78	Rajgarh Churu	Non-Basin	Rajasthan
22	Dabra	Basin	Madhya Pradesh	79	Rajsamand	Non-Basin	Rajasthan
23	Dhar	Non-Basin	Madhya Pradesh	80	Ratangarh (Churu)	Non-Basin	Rajasthan
24	Gohad	Basin	Madhya Pradesh	81	Sardarsahar	Non-Basin	Rajasthan
25	Harda	Non-Basin	Madhya Pradesh	82	Suratgarh	Non-Basin	Rajasthan
26	Itarsi	Non-Basin	Madhya Pradesh	83	Ayodhya	Riverine	Uttar Pradesh
27	Jaora	Basin	Madhya Pradesh	84	Baghpat	Riverine	Uttar Pradesh
28	Khurai	Basin	Madhya Pradesh	85	Budhana	Basin	Uttar Pradesh
29	Mandideep	Non-Basin	Madhya Pradesh	86	Gajraula	Riverine	Uttar Pradesh
30	Mandla	Non-Basin	Madhya Pradesh	87	Gangaghat/ Shuklaganj	Riverine	Uttar Pradesh

31	Narsinghpur	Non-Basin	Madhya Pradesh	88	Jahangirabad	Riverine	Uttar Pradesh
32	Panna	Basin	Madhya Pradesh	89	Kairana	Riverine	Uttar Pradesh
33	Sendhwa	Non-Basin	Madhya Pradesh	90	Khalilabad	Non-Basin	Uttar Pradesh
34	Shahdol	Basin	Madhya Pradesh	91	Khatauli	Basin	Uttar Pradesh
35	Shajapur	Basin	Madhya Pradesh	92	Kosi Kalan	Basin	Uttar Pradesh
36	Sheopur	Non-Basin	Madhya Pradesh	93	Mawana	Riverine	Uttar Pradesh
37	Shujalpur	Basin	Madhya Pradesh	94	Meerut	Basin	Uttar Pradesh
38	Sidhi	Riverine	Madhya Pradesh	95	Muradnagar	Basin	Uttar Pradesh
39	Sironj	Basin	Madhya Pradesh	96	Nawabganj	Basin	Uttar Pradesh
40	Tikamgarh	Basin	Madhya Pradesh	97	Pilkhuwa	Basin	Uttar Pradesh
41	Bapraula (CT)	Basin	NCT of Delhi	98	Sardhana	Basin	Uttar Pradesh
42	Bawana (CT)	Basin	NCT of Delhi	99	Sikandrabad	Basin	Uttar Pradesh
43	Begum Pur (CT)	Basin	NCT of Delhi	100	Vrindavan	Riverine	Uttar Pradesh
44	Chilla Saroda Bangar (CT)	Riverine	NCT of Delhi	101	Ram Nagar	Basin	Uttarakhand
45	Gharoli (CT)	Riverine	NCT of Delhi	102	Bankra	Riverine	West Bengal
46	Jaffrabad (CT)	Riverine	NCT of Delhi	103	Baruipur	Basin	West Bengal
47	Jait Pur (CT)	Riverine	NCT of Delhi	104	Bolpur (Sriniketan Santiniketan)	Non-Basin	West Bengal
48	Kapas Hera (CT)	Basin	NCT of Delhi	105	Budge Budge	Riverine	West Bengal

49	Khajoori Khas (CT)	Riverine	NCT of Delhi	106	Garulia	Riverine	West Bengal
50	Mithe Pur (CT)	Riverine	NCT of Delhi	107	Gayespur	Riverine	West Bengal
51	Molar Band (CT)	Riverine	NCT of Delhi	108	Kharagpur	Non-Basin	West Bengal
52	Mukand Pur (CT)	Riverine	NCT of Delhi	109	Kharia	Non-Basin	West Bengal
53	Mundka (CT)	Basin	NCT of Delhi	110	Konnagar	Riverine	West Bengal
54	Nithari (CT)	Basin	NCT of Delhi	111	New Barrackpore	Riverine	West Bengal
55	Pooth Kalan (CT)	Basin	NCT of Delhi	112	Panskura	Basin	West Bengal
56	Pul Pehlad (CT)	Riverine	NCT of Delhi	113	Rampurhat	Basin	West Bengal
57	Roshan Pura alias Dichaon Khurd (CT)	Basin	NCT of Delhi	114	Tamluk	Riverine	West Bengal

Annexure 5: List of Medium Towns under Master Plans. Population cohort 20, 000 – 50,000

S. No.	Name of Settlement	Settlement category	State	S. No.	Name of Settlement	Settlement category	State
1	Sonepur	Riverine	Bihar	122	Bilara	Basin	Rajasthan
2	Ahiwara	Non-Basin	Chhattisgarh	123	Bissau	Non-Basin	Rajasthan
3	Akaltara	Non-Basin	Chhattisgarh	124	Chaksu	Basin	Rajasthan
4	Balod	Non-Basin	Chhattisgarh	125	Chhabra	Basin	Rajasthan
5	Baloda Bazar	Non-Basin	Chhattisgarh	126	Chirawa	Non-Basin	Rajasthan

6	Bemetara	Non-Basin	Chhattisgarh	127	Deeg	Basin	Rajasthan
7	Champa	Non-Basin	Chhattisgarh	128	Deoli	Basin	Rajasthan
8	Dipka	Non-Basin	Chhattisgarh	129	Dungarpur	Non-Basin	Rajasthan
9	Dongargarh	Non-Basin	Chhattisgarh	130	Fatehnagar	Non-Basin	Rajasthan
10	Kanker	Non-Basin	Chhattisgarh	131	Gulabpura	Basin	Rajasthan
11	Kawardha	Non-Basin	Chhattisgarh	132	Itawa	Non-Basin	Rajasthan
12	Khairagarh	Non-Basin	Chhattisgarh	133	Jahazpur	Basin	Rajasthan
13	Kondagaon	Non-Basin	Chhattisgarh	134	Jaitaran	Basin	Rajasthan
14	Mungeli	Non-Basin	Chhattisgarh	135	Jhalrapatan	Riverine	Rajasthan
15	Narayanpur	Non-Basin	Chhattisgarh	136	Kaithoon	Basin	Rajasthan
16	Ratanpur	Non-Basin	Chhattisgarh	137	Kaman	Basin	Rajasthan
17	Saraipali	Non-Basin	Chhattisgarh	138	Kapasan	Non-Basin	Rajasthan
18	Tilda Newra	Non-Basin	Chhattisgarh	139	Kaprain	Riverine	Rajasthan
19	Assandh	Non-Basin	Haryana	140	Karanpur	Non-Basin	Rajasthan
20	Barwala	Non-Basin	Haryana	141	Kekri	Basin	Rajasthan
21	Bhuna	Non-Basin	Haryana	142	Keshoraipatan	Riverine	Rajasthan
22	Dharuhera	Basin	Haryana	143	Khairthal	Basin	Rajasthan
23	Ganaur	Riverine	Haryana	144	Khandela	Basin	Rajasthan

24	Hansi	Non-Basin	Haryana	14 5	Kishangarh Renwal	Basin	Rajastha n
25	Jhajjar	Non-Basin	Haryana	14 6	Kotputli	Basin	Rajastha n
26	Kalanaur	Non-Basin	Haryana	14 7	Kuchera	Non-Basin	Rajastha n
27	Ladwa	Non-Basin	Haryana	14 8	Kumher	Basin	Rajastha n
28	Mahendragarh	Non-Basin	Haryana	14 9	Lakheri	Riverine	Rajastha n
29	Naraingarh	Non-Basin	Haryana	15 0	Lalsot	Basin	Rajastha n
30	Palwal	Basin	Haryana	15 1	Losal	Basin	Rajastha n
31	Pehowa	Non-Basin	Haryana	15 2	Mahwa	Basin	Rajastha n
32	Pinjore	Non-Basin	Haryana	15 3	Makrana	Basin	Rajastha n
33	Samalkha	Basin	Haryana	15 4	Malpura	Basin	Rajastha n
34	Shahabad	Non-Basin	Haryana	15 5	Mandawa	Non-Basin	Rajastha n
35	Sohna	Basin	Haryana	15 6	Mangrol	Basin	Rajastha n
36	Baddi	Non-Basin	Himachal Pradesh	15 7	Merta City	Non-Basin	Rajastha n
37	Dharmasala	Non-Basin	Himachal Pradesh	15 8	Mount Abu	Non-Basin	Rajastha n
38	Mandi	Non-Basin	Himachal Pradesh	15 9	Nadbai	Basin	Rajastha n
39	Nahan	Non-Basin	Himachal Pradesh	16 0	Nagar	Basin	Rajastha n
40	Paonta Sahib	Riverine	Himachal Pradesh	16 1	Nathdwara	Non-Basin	Rajastha n
41	Solan	Non-Basin	Himachal Pradesh	16 2	Nawa	Basin	Rajastha n

42	Sundarnagar	Non-Basin	Himachal Pradesh	163	Neem Ka Thana	Basin	Rajasthan
43	Bishrampur	Basin	Jharkhand	164	Niwai	Basin	Rajasthan
44	Bundu	Non-Basin	Jharkhand	165	Nohar	Non-Basin	Rajasthan
45	Chatra	Basin	Jharkhand	166	Phalodi	Non-Basin	Rajasthan
46	Chirkunda	Basin	Jharkhand	167	Phulera	Basin	Rajasthan
47	Dumka	Non-Basin	Jharkhand	168	Pilani	Non-Basin	Rajasthan
48	Garhwa	Basin	Jharkhand	169	Pilibanga	Non-Basin	Rajasthan
49	Godda	Basin	Jharkhand	170	Pindwara	Non-Basin	Rajasthan
50	Hussainabad	Riverine	Jharkhand	171	Pipar City	Non-Basin	Rajasthan
51	Jamtara	Basin	Jharkhand	172	Pokaran	Non-Basin	Rajasthan
52	Jugsalai	Non-Basin	Jharkhand	173	Pratapgarh	Basin	Rajasthan
53	Khunti	Non-Basin	Jharkhand	174	Pushkar	Basin	Rajasthan
54	Latehar	Basin	Jharkhand	175	Raisinghnagar	Non-Basin	Rajasthan
55	Mihijam	Basin	Jharkhand	176	Rajakhera	Riverine	Rajasthan
56	Pakaur	Riverine	Jharkhand	177	Rajaldesar	Non-Basin	Rajasthan
57	Rajmahal	Riverine	Jharkhand	178	Rajgarh	Basin	Rajasthan
58	Simdega	Non-Basin	Jharkhand	179	Ramganj Mandi	Basin	Rajasthan
59	Alirajpur	Non-Basin	Madhya Pradesh	180	Ramgarh	Non-Basin	Rajasthan

60	Alot	Basin	Madhya Pradesh	181	Rawatbhata	Basin	Rajasthan
61	Amla	Basin	Madhya Pradesh	182	Rawatsar	Non-Basin	Rajasthan
62	Badnagar	Non-Basin	Madhya Pradesh	183	Reengus	Basin	Rajasthan
63	Bhanpura	Basin	Madhya Pradesh	184	Sadri	Basin	Rajasthan
64	Biaora	Basin	Madhya Pradesh	185	Sadulshahar	Non-Basin	Rajasthan
65	Bijuri	Non-Basin	Madhya Pradesh	186	Sagwara	Non-Basin	Rajasthan
66	Chanderi	Riverine	Madhya Pradesh	187	Sambhar	Basin	Rajasthan
67	Chitrakoot	Basin	Madhya Pradesh	188	Sanchoe	Non-Basin	Rajasthan
68	Dabra	Basin	Madhya Pradesh	189	Sangaria	Non-Basin	Rajasthan
69	Damua	Non-Basin	Madhya Pradesh	190	Sangod	Riverine	Rajasthan
70	Dindori	Non-Basin	Madhya Pradesh	191	Sarwar	Basin	Rajasthan
71	Garhakota	Basin	Madhya Pradesh	192	Shahpura	Basin	Rajasthan
72	Hatta	Basin	Madhya Pradesh	193	Sheoganj	Non-Basin	Rajasthan
73	Jhabua	Non-Basin	Madhya Pradesh	194	Sirohi	Non-Basin	Rajasthan
74	Khajuraho	Riverine	Madhya Pradesh	195	Sojat	Basin	Rajasthan
75	Kukshi	Non-Basin	Madhya Pradesh	196	Sri Madhopur	Non-Basin	Rajasthan
76	Maheshwar	Non-Basin	Madhya Pradesh	197	Sumerpur	Non-Basin	Rajasthan
77	Maihar	Basin	Madhya Pradesh	198	Surajgarh	Non-Basin	Rajasthan

78	Mandideep	Non-Basin	Madhya Pradesh	199	Taranagar	Non-Basin	Rajasthan
79	Multai	Non-Basin	Madhya Pradesh	200	Tijara	Basin	Rajasthan
80	Narsingharh	Basin	Madhya Pradesh	201	Todabhim	Basin	Rajasthan
81	Pandhurna	Non-Basin	Madhya Pradesh	202	Todaraisingh	Basin	Rajasthan
82	Raisen	Non-Basin	Madhya Pradesh	203	Udaipurwati	Basin	Rajasthan
83	Rajgarh	Basin	Madhya Pradesh	204	Vijainagar	Non-Basin	Rajasthan
84	Sausar	Non-Basin	Madhya Pradesh	205	Viratnagar	Basin	Rajasthan
85	Sihora	Non-Basin	Madhya Pradesh	206	Bakshi Ka Talab	Riverine	Uttar Pradesh
86	Umaria	Basin	Madhya Pradesh	207	Barhalganj	Riverine	Uttar Pradesh
87	Aali (CT)	Riverine	NCT of Delhi	208	Chandauli	Riverine	Uttar Pradesh
88	Ali Pur (CT)	Riverine	NCT of Delhi	209	Chhata	Basin	Uttar Pradesh
89	Aya Nagar (CT)	Basin	NCT of Delhi	210	Fatehpur Sikri	Basin	Uttar Pradesh
90	Babar Pur (CT)	Riverine	NCT of Delhi	211	Govardhan	Basin	Uttar Pradesh
91	Chattar Pur (CT)	Basin	NCT of Delhi	212	Hastinapur	Riverine	Uttar Pradesh
92	Dayal Pur (CT)	Riverine	NCT of Delhi	213	Jalali	Basin	Uttar Pradesh
93	Dindar Pur (CT)	Basin	NCT of Delhi	214	Kandhla	Riverine	Uttar Pradesh
94	Gharonda Neemka Bangar alias Patpar Ganj (CT)	Riverine	NCT of Delhi	215	Kanth	Riverine	Uttar Pradesh
95	Jharoda Majra Burari (CT)	Riverine	NCT of Delhi	216	Khair	Basin	Uttar Pradesh

96	Jiwan Pur alias Johri Pur (CT)	Riverine	NCT of Delhi	217	Khairabad	Basin	Uttar Pradesh
97	Kamal Pur Majra Burari (CT)	Riverine	NCT of Delhi	218	Khalilabad	Basin	Uttar Pradesh
98	Karala (CT)	Basin	NCT of Delhi	219	Khekada	Riverine	Uttar Pradesh
99	Kondli (CT)	Riverine	NCT of Delhi	220	Kheri	Basin	Uttar Pradesh
100	Libas Pur (CT)	Riverine	NCT of Delhi	221	Lawar	Basin	Uttar Pradesh
101	Malik Pur Kohi alias Rang Puri (CT)	Basin	NCT of Delhi	222	Maharajganj	Basin	Uttar Pradesh
102	Moradabad Pahari (CT)	Basin	NCT of Delhi	223	Mohammada bad	Riverine	Uttar Pradesh
103	Nangli Sakrawati (CT)	Basin	NCT of Delhi	224	Nanauta	Basin	Uttar Pradesh
104	Nilothi (CT)	Basin	NCT of Delhi	225	Naugawan Sadat	Basin	Uttar Pradesh
105	Pehlad Pur Bangar (CT)	Riverine	NCT of Delhi	226	Ramnagar	Riverine	Uttar Pradesh
106	Quammruddin Nagar (CT)	Basin	NCT of Delhi	227	Raya	Riverine	Uttar Pradesh
107	Shafi Pur Ranhola (CT)	Basin	NCT of Delhi	228	Sahaspur	Riverine	Uttar Pradesh
108	Siras Pur (CT)	Riverine	NCT of Delhi	229	Saidpur	Riverine	Uttar Pradesh
109	Tigri (CT)	Riverine	NCT of Delhi	230	Shamsabad	Riverine	Uttar Pradesh
110	Aklara	Basin	Rajasthan	231	Sikandrabad	Basin	Uttar Pradesh
111	Anupgarh	Non-Basin	Rajasthan	232	Bajpur	Basin	Uttarakh and
112	Bagru	Basin	Rajasthan	233	Gopeshwar	Basin	Uttarakh and
113	Bandikui	Basin	Rajasthan	234	Nainital	Basin	Uttarakh and

114	Bassi	Basin	Rajasthan	23 5	Pauri	Basin	Uttarakh and
115	Bayana	Basin	Rajasthan	23 6	Srinagar	Basin	Uttarakh and
116	Begun	Basin	Rajasthan	23 7	Tehri	Basin	Uttarakh and
117	Behror	Non-Basin	Rajasthan	23 8	Baruipur	Riverine	West Bengal
118	Bhadra	Non-Basin	Rajasthan	23 9	Dubrajpur	Basin	West Bengal
119	Bhawani Mandi	Basin	Rajasthan	24 0	Pujali	Riverine	West Bengal
120	Bhinmal	Non-Basin	Rajasthan	24 1	Tarakeswar	Basin	West Bengal
121	Bidasar	Non-Basin	Rajasthan				

Annexure 6: List of AMRUT approved GIS based Master Plans

S. No.	State Name	Settlement Name	S. No.	State Name	Settlement Name
1	Himachal Pradesh	Bilaspur	108	Uttar Pradesh	Akbarpur
2	Himachal Pradesh	Chamba	109	Uttar Pradesh	Aonla
3	Himachal Pradesh	Hamirpur	110	Uttar Pradesh	Atrauli
4	Himachal Pradesh	Mandi	111	Uttar Pradesh	Auraiya
5	Himachal Pradesh	Nahan	112	Uttar Pradesh	Baheri
6	Himachal Pradesh	Palampur	113	Uttar Pradesh	Balrampur
7	Himachal Pradesh	Solan	114	Uttar Pradesh	Bela pratapgarh
8	Himachal Pradesh	Una	115	Uttar Pradesh	Bharthana
9	Madhya Pradesh	Ambah	116	Uttar Pradesh	Bijnor
10	Madhya Pradesh	Ashoknagar	117	Uttar Pradesh	Bisalpur
11	Madhya Pradesh	Ashta	118	Uttar Pradesh	Biswan
12	Madhya Pradesh	Balaghat	119	Uttar Pradesh	Budhana

13	Madhya Pradesh	Barwani	120	Uttar Pradesh	Chandpur
14	Madhya Pradesh	Basoda	121	Uttar Pradesh	Chhibramau
15	Madhya Pradesh	Biaora	122	Uttar Pradesh	Chitrakoot
16	Madhya Pradesh	Bina- Etawa	123	Uttar Pradesh	Deoband
17	Madhya Pradesh	Dhar	124	Uttar Pradesh	Dhampur
18	Madhya Pradesh	Gadarwara	125	Uttar Pradesh	Faridpur
19	Madhya Pradesh	Gohad	126	Uttar Pradesh	Gajrauli
20	Madhya Pradesh	Harda	127	Uttar Pradesh	Gangoh
21	Madhya Pradesh	Itarsi	128	Uttar Pradesh	Garhmukteshwar
22	Madhya Pradesh	Jaora	129	Uttar Pradesh	Gola bazar
23	Madhya Pradesh	Joura	130	Uttar Pradesh	Gola gokarannath
24	Madhya Pradesh	Khurai	131	Uttar Pradesh	Gulaothi
25	Madhya Pradesh	Maihar	132	Uttar Pradesh	Hasanpur
26	Madhya Pradesh	Mandideep	133	Uttar Pradesh	Hata
27	Madhya Pradesh	Mandla	134	Uttar Pradesh	Jahangirabad
28	Madhya Pradesh	Narsinghpur	135	Uttar Pradesh	Jais
29	Madhya Pradesh	Nowgong	136	Uttar Pradesh	Jalapur
30	Madhya Pradesh	Pandhurna	137	Uttar Pradesh	Jalaun
31	Madhya Pradesh	Panna	138	Uttar Pradesh	Kairana
32	Madhya Pradesh	Pipariya	139	Uttar Pradesh	Kalpi
33	Madhya Pradesh	Porsa	140	Uttar Pradesh	Kannauj
34	Madhya Pradesh	Raghogarh -Vijaypur	141	Uttar Pradesh	Khalilabad
35	Madhya Pradesh	Raisen	142	Uttar Pradesh	Khatauli
36	Madhya Pradesh	Sabalgarh	143	Uttar Pradesh	Khora makanpur
37	Madhya Pradesh	Sarangpur	144	Uttar Pradesh	Kiratpur
38	Madhya Pradesh	Sendhwa	145	Uttar Pradesh	Konch
39	Madhya Pradesh	Shahdol	146	Uttar Pradesh	Laharpur

40	Madhya Pradesh	Shajapur	147	Uttar Pradesh	Mahmudabad
41	Madhya Pradesh	Sheopur	148	Uttar Pradesh	Mahoba
42	Madhya Pradesh	Shujalpur	149	Uttar Pradesh	Mauranipur
43	Madhya Pradesh	Sidhi	150	Uttar Pradesh	Menhdawal
44	Madhya Pradesh	Sihora	151	Uttar Pradesh	Mubarakpur
45	Madhya Pradesh	Sironj	152	Uttar Pradesh	Muhamadabadgohna
46	Madhya Pradesh	Tikamgarh	153	Uttar Pradesh	Nagina
47	Rajasthan	Abu road	154	Uttar Pradesh	Najibabad
48	Rajasthan	Anta	155	Uttar Pradesh	Nawabganj
49	Rajasthan	Anupgarh	156	Uttar Pradesh	Obra
50	Rajasthan	Balotra	157	Uttar Pradesh	Padrauna
51	Rajasthan	Bandikui	158	Uttar Pradesh	Pukhrayan
52	Rajasthan	Banswara	159	Uttar Pradesh	Rath
53	Rajasthan	Bari	160	Uttar Pradesh	Rudauli
54	Rajasthan	Barmer	161	Uttar Pradesh	Sahaswan
55	Rajasthan	Bayana	162	Uttar Pradesh	Sandila
56	Rajasthan	Bhadra	163	Uttar Pradesh	Sewarhi
57	Rajasthan	Bhinmal	164	Uttar Pradesh	Shahabad
58	Rajasthan	Bidasar	165	Uttar Pradesh	Sherkot
59	Rajasthan	Bilara	166	Uttar Pradesh	Sikandarabad
60	Rajasthan	Chaksu	167	Uttar Pradesh	Tanda
61	Rajasthan	Dausa	168	Uttar Pradesh	Tilhar
62	Rajasthan	Deedwana	169	Uttar Pradesh	Tundla
63	Rajasthan	Deeg	170	Uttar Pradesh	Ujhani
64	Rajasthan	Deoli	171	West Bengal	Alipurduar
65	Rajasthan	Dungarpur	172	West Bengal	Arambagh
66	Rajasthan	Fatehpur	173	West Bengal	Baduria

67	Rajasthan	Jaisalmer	174	West Bengal	Baruipur
68	Rajasthan	Jalore	175	West Bengal	Bishnupur
69	Rajasthan	Jhalawar	176	West Bengal	Bolpur
70	Rajasthan	Karauli	177	West Bengal	Budge Budge
71	Rajasthan	Kekri	178	West Bengal	Chakdah
72	Rajasthan	Khairtal	179	West Bengal	Contai
73	Rajasthan	Khetri	180	West Bengal	Cooch Behar
74	Rajasthan	Kotputli	181	West Bengal	Dalkhola
75	Rajasthan	Kuchaman City	182	West Bengal	Dankuni
76	Rajasthan	Ladnu	183	West Bengal	Dhulian
77	Rajasthan	Lalsot	184	West Bengal	Dhupguri
78	Rajasthan	Laxmangarh	185	West Bengal	Diamond-Harbour
79	Rajasthan	Makrana	186	West Bengal	Domkal
80	Rajasthan	Mertaciry	187	West Bengal	Falakata
81	Rajasthan	Nasirabad	188	West Bengal	Gangarampore
82	Rajasthan	Nathdwara	189	West Bengal	Garulia
83	Rajasthan	Nawalgarh	190	West Bengal	Gayeshpur
84	Rajasthan	Neem Ka Thana	191	West Bengal	Ghatal
85	Rajasthan	Nimbahera	192	West Bengal	Gobardanga
86	Rajasthan	Niwai	193	West Bengal	Islampore
87	Rajasthan	Nohar	194	West Bengal	Jhargram
88	Rajasthan	Nokha	195	West Bengal	JiaganjAzimganj
89	Rajasthan	Phalodi	196	West Bengal	Kalimpong
90	Rajasthan	Pilani	197	West Bengal	Kaliyaganj
91	Rajasthan	Pilibanga	198	West Bengal	Kalna
92	Rajasthan	Pratapgarh	199	West Bengal	Kandi
93	Rajasthan	Raisinghnagar	200	West Bengal	Katwa

94	Rajasthan	Rajgarh (Churu)	201	West Bengal	Konnagar
95	Rajasthan	Rajsamand	202	West Bengal	Kurseong
96	Rajasthan	Ratangarh	203	West Bengal	Memari
97	Rajasthan	Rawatbhata	204	West Bengal	Murshidabad
98	Rajasthan	Sangaria	205	West Bengal	Nalhati
99	Rajasthan	Sardarshahar	206	West Bengal	New Barrackpore
100	Rajasthan	Shahpura	207	West Bengal	Old Malda
101	Rajasthan	Shahpuraa	208	West Bengal	Panskura
102	Rajasthan	Sirohi	209	West Bengal	Rampurhat
103	Rajasthan	Sojat	210	West Bengal	Ranaghat
104	Rajasthan	Sri Dungargarh	211	West Bengal	Sainthia
105	Rajasthan	Sri Vijaynagar and Gulabpura	212	West Bengal	Suri
106	Rajasthan	Suratgarh	213	West Bengal	Tamluk
107	Rajasthan	Tijara			

Glossary

Term	Definition
Base Map	Foundational geographic mapping layer used for land use, drainage, water bodies, and environmental features in Master Plan preparation.
Blue-Green Infrastructure	An integrated approach combining water (blue) and vegetation (green) to create resilient urban systems (e.g., wetlands, urban lakes, green corridors, rainwater harvesting).
Development Authority	The statutory agency responsible for preparing and implementing the Master Plan, often established under the T&CP Act.
Development Control Regulations (DCRs)	Regulations that implement the Master Plan vision through controls on land use, building height, setbacks, FAR, parking, etc.
Eco-sensitive Zones / Environmental Sensitivity Overlay	Designations within Master Plans that protect ecologically important areas around rivers, wetlands, and habitats.
Floodplain Zoning	Delineation of flood-prone areas and regulation of development within those zones.
Ganga Action Plan (GAP)	Early pollution control program focusing on sewage diversion and treatment; carried out over multiple phases.
Ganga Basin States (GBS)	States along the Ganga River and its tributaries. Includes 11 states: Haryana, Uttarakhand, Himachal Pradesh, Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Bihar and Delhi NCR

Interstate Planning	The main objective for setting up the Inter-State Planning concept is to promote economic growth and balanced development of the Region (two or more than two states) for providing suitable infrastructural development through inter rail and road-based transportation networks, minimizing the adverse environmental impact, developing selected urban settlements with urban infrastructure facilities. In India a number of Inter-State planning organizations have been established to achieve the above said objectives.
Local Area Plans (LAPs) and Town Planning (TP) Schemes	Local, detailed plans for smaller pockets within the Master Plan area; used to implement broader strategies at the ground level. LAPs and TP Schemes are used to translate Master Plan policy into concrete, ground-level actions and protections, including riverfront and water-body areas. Under the TP Scheme, the state appoints a quasi-judicial official, the Town Planning Officer (TPO), who interacts with landowners and prepares physical and financial plans. A trained urban planner with no influence from local authorities holds this position, which helps to ensure fair and independent decisions.
Master Plan	A legal document and statutory tool that regulates and promotes urban planning in India through land-use allocations, bye-laws and Development Control Regulations (DCRs).
Namami Gange Programme (NCP)	The flagship initiative of the Government of India for rejuvenation of the Ganga River.
NCR Planning Board (NCRPB)	Inter-state planning mechanism for the National Capital Region, coordinating regional plans across Delhi and neighbouring states.
NIDM (National Institute of Disaster Management)	Government institute that develops guidelines for disaster risk reduction within planning laws.
NIDM Model Law 2004	Model provisions by the National Institute of Disaster Management for disaster-prone areas, natural hazards, and mitigation within planning documents.
NMCG (National Mission for Clean Ganga)	The nodal agency under the Ministry of Jal Shakti, Government of India, responsible for the Namami Gange programme.

River-City Alliance	An initiative by NMCC and NIUA to foster institutional engagement on the urban-river interface.
River Zoning and Buffers	Spatial designations and setbacks around rivers to protect ecological health, regulate development, and create green/blue corridors.
SPV (Special Purpose Vehicle)	A jointly owned entity (often by state government and ULBs) used to implement riverfronts, projects, or other programs with dedicated governance and financing.
State Regulatory Body	The role of this State Body would be to regulate and monitor the functioning of Development bodies. The regulatory authority at the state level may function as an appellant authority to address the grievances redressal.
Town and Country Planning (T&CP) Act)	State-level law regulating town planning and the preparation of Master Plans and related development controls.
Transferable Development Rights (TDRs)	A tool to transfer development rights from one area to another to raise revenue, incentivize preservation of certain zones, or enable redevelopment.
URDPFI (Urban and Regional Development Plan Formulation and Implementation) Guidelines	National guidelines (1996, revised 2015) for planning and implementing master plans, including environmental considerations.
URMP (Urban River Management Plan)	City-level or town-level non-statutory plans focusing on river management, conservation and rejuvenation.
Zonal Plan	Detailed land use plan that translates the broad Master Plan into finer details.
74th Constitutional Amendment	Expanded urban planning and local governance roles for municipalities, enabling local planning functions and urban development authorities.