CENTRE FOR SYMBIOSIS OF TECHNOLOGY ENVIRONMENT & MANAGEMENT
STEM
Reporter
SR-32/2026

MASTER PLANS & OTHER URBAN DEVELOPMENT ASSIGNMENTS

This Reporter of STEM narrates the experience and expertise gained from the assignments of three eras of Master Plans in India. Analyses of different aspects of Master Plans such as, adopting new technologies like drones, changes in land uses etc. are presented. Also, the capacity building initiatives of the organization, related to GIS and Master Plan are mentioned briefly.

Dr P.H. Rao
Member Secretary, STEM

MASTER PLANS IN INDIA

"*Master Plan* (also called Development Plan/Comprehensive Development Plan) is a statutory, long-term spatial plan for a notified planning area that assesses existing conditions, projects future needs, and sets land-use zoning, infrastructure, and development control regulations to guide orderly growth over a 20–30 year horizon."

- Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines, TCPO, Ministry of Urban Development, Government of India.

The Government of India initiated the *Atal Mission for Rejuvenation and Urban Transformation* (AMRUT) in 2015. The focus of the Mission is on developing basic infrastructure in cities and towns including water supply, sewerage and waste management, storm water drainage, green spaces, parks, and non-motorized urban transport.

Before AMRUT

Prior to AMRUT, many states used National Urban Information System 1:10,000 Geographical Information System (GIS) databases and Bhuvan layers and followed varied methods for base map preparation. This led to inconsistencies across cities and difficulties in inter-operability and plan updates. Before AMRUT, national support for geospatial master planning was not programmatically scaled to hundreds of cities, limiting coverage and consistency. Also, linkages between master plans, permitting, and implementation systems were weaker or manual, reducing traceability and service delivery impacts. National capacity building tied to a GIS planning standard was limited, contributing to uneven adoption and skill gaps across states.

AMRUT Era

Formulation of GIS-based Master/Development Plans for 500 AMRUT Cities is one of the important reforms under AMRUT. It is a 100% centrally funded sub-scheme. Data sets such as Remote Sensing data, Base maps, and Urban Land Use GIS databases, incorporating socio-economic attributes and administrative boundaries, are integrated into geospatial information. The goal is to create standardized base maps, land use maps, master plans, and an urban geo-portal using GIS technology. Utilisation of Very High-Resolution Satellite (VHRS) data for preparing large scale urban base map at 1: 4000 scale or better is recommended.

AMRUT 2.0 Phase

AMRUT 2.0 was launched in 2021, expanding coverage drastically to about 4,800 statutory towns across India, with populations ranging from 50,000 to 99,999. The AMRUT 2.0 Master Plans (MP) focus on the mission components such as *water supply, sewerage* and *septage management, water body rejuvenation, and green spaces*. The transition from AMRUT to AMRUT 2.0 brought significant changes in the preparation and implementation of master plans, emphasizing scaling, outcome-based approaches, digitalization, and reform-driven frameworks.

Geo Spatial Layers for Master Plans under AMRUT

S. No.	SPATIAL LAYER	SOURCE
1	Base Layers: Road, rail, bridges, flyovers, water bodies	Very High-Resolution satellite data
2	Urban Land Use/Land cover	Very High-Resolution satellite data
3	Building Footprints	Very High-Resolution satellite data
4	Utilities: Water Supply Network; Storm Water Drainage Network; Sewerage Network; Power Supply Network; Gas distribution Network.	Urban Local Bodies/ Sectoral Line Departments
5	Hypsography: Digital Elevation Model (DEM) Type Digital Terrain Model (DTM); Contour; Ground Control Points;	Topographic Survey; existing DEMs or contour maps.
6	Cadastral Layers	Urban Local Bodies /State Revenue Department
7	Boundaries: ○ Administrative; ○ Planning; ○ Municipal; ○ Others (Enumeration Block; Urban Framework Survey (WFS) & Mining Area.)	State Revenue Department; Urban Local Bodies; EB from Registrar General of India (RGI), UFS from National Sample Survey Organisation (NSSO) & Mining area boundary from concerned State Departments.
8	Hazard Prone Areas	Information from NRSC, ISRO, GSI, NDMA, Other State & Central Government Depts.

Source: TCPO – Formulation of GIS based Master Plans for 500 AMRUT Cities

STEM Master Plans in the Three Eras

Pre AMRUT

- **Kanakapura LPA**
- **Bangalore Development Authority***

AMRUT

- **Karnataka**
  - Chamarajanagara-Ramasamudra UDA
  - Package 2 (3 LPAs): Chickkamangaluru, Mangaluru and Udupi
  - Package 3 (3 LPAs): Chitradurga, Davangere and Ranebennuru
- **Ananthapuram and Hindupur Urban Development Authority (AHUDA) Region Phase-1**
- **Telangana**
  - Package 3 (3 Cities): Khammam UDA, Nalgonda and Suryapet
- **Uttar Pradesh**
  - Cluster 4 (3 RAs): Amroha, Chandausi and Sambhal

AMRUT 2.0

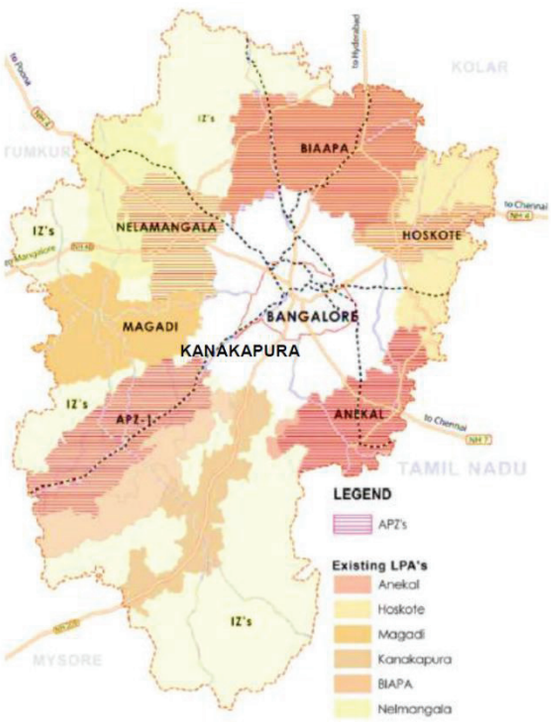
- **Tamil Nadu**
  - Package 7 (6 CLPAs): Dharmapuri, Gudiyatham, Krishnagiri, Pernampattu, Tirupathur and Vaniyambadi

* - The assignment was carried out by DHV Consultants, with STEM associated as a sub-consultant. The Team Leader, Mr. V.M. Hegde (Former Director DTCP, Karnataka) was the MD of STEM.

Pre-AMRUT Era

Kanakapura LPA (KLPA) MP 2031

KLPA was declared by the BMRDA in 2006. It is located in the south of the west part Bangalore Metropolitan Region (BMR).



The total extent of the KLPA is 412.78 sq.km, consisting of 85 villages and Kanakapura TMC. The structure Plan of 2011, provides the framework for the MP of the KLPA.

The Proposed Land Use will accommodate about six lakh population of the four urban areas namely Kanakapura, Harohalli, Sathanur, Kaggalipura and a population of 90,000 in the villages in the agricultural zone.

- Conurbation area is 11233.27 Hectares (Ha) i.e. urbanisable area, to achieve a density of 53 population per hectare (pph) reducing from 70 in 2012.
- The developed area between Kaggalipura-Harohalli is 204.42 Ha.
- Agriculture zone is 29,840.31 Ha. It comprises,
  - Agriculture – 27,645.35 Ha (67.0%);
  - Water Bodies – 1,249.86 Ha (3.0%) and
  - Forest – 945.1 Ha (2.3%).

Change in Share of Land Use Categories: The share for each category in Existing Land Use (ELU) was compared to that in Proposed Land Use (PLU), taking the total LPA as the base. The highest increase rates were proposed for housing (5.72%) followed by industrial (5.67%) and Transportation (3.43%). The additional land primarily comes from agriculture land, which experienced a decrease of 21.5%. The KLPA has some of the most fertile land in the BMR and designated as an Agri Export Zone. Hence, all new developments and land uses have been planned protecting the productive agricultural lands. The concept of 'phasing development' was the key principle adopted for preparing KLPA MP 2031. It is prepared with a view to promote the LPA's role as a counter magnet to Bangalore.

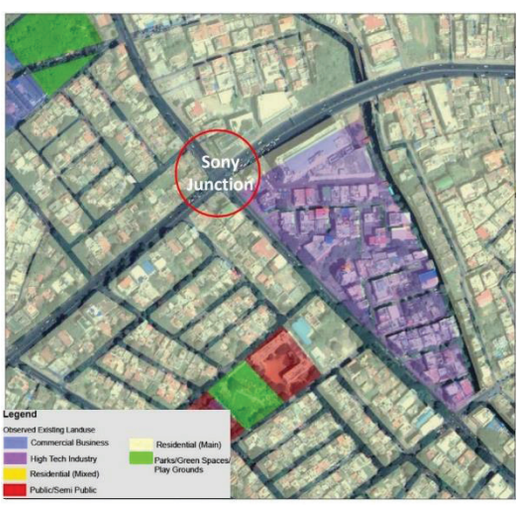
Provisional approved MP 2031 has an extent of 10,152.20 Ha, which has increased to 11,437.69 in the final Master Plan 2031.

Limitations: Lack of primary household data and primary traffic survey data.

Bangalore Revised MP (RMP) 2031

In the past the growth of Bangalore city was guided by Outline Development Plan 1972, Comprehensive Development Plans (CDP) 1984, CDP 1995 and RMP 2015. The LPA of Bangalore Development Authority (BDA) for RMP-2031, is 1206.97 Sq. km. Estimated population for 2031 ranges between 18-20 million.

It was observed that the PLU (what was proposed) in RMP 2015 and what has happened (as observed in ELU in 2015) at the Sony World Junction area in the Koramangala Planning District, are quite different. The provision of section 14 A (3) of Karnataka Town and Country Planning (KTCP) Act, 1961 and Zonal Regulations (ZR) of Mutation Corridor Land Use of RMP 2015, permitting mixed land use, which left no scope for road widening/improvement. This resulted in huge traffic jams.

Proposed Land Use in RMP 2015	Existing Land Use in 2015
	

The RMP-2031, modified the ZRs to avoid such situations in future.

The agricultural belt admeasuring nearly 323 sq.km. has been retained along the periphery of the entire LPA to act as a buffer between the LPA of BDA and the developments in the adjoining LPAs. The economic centres/ industrial areas and the amenity areas have been spatial distributed across the 42 Planning Districts of the LPA of BDA for balancing the growth at the LPA Level. The Eco-sensitive zones along with their extent of regulation boundaries like Arkavati, TG Halli and Bannerghatta National Park has been demarcated on the PLU Map. RMP 2031, for the first time, has classified the streams into primary, secondary and tertiary and earmarked on the PLU maps along with demarcation of buffers as per the orders of the National Green Tribune.

Limitations: The RMP 2031, was accorded approval (Provisional) in November 2017. Ultimately BDA has withdrawn the RMP 2031 in 2020.

AMRUT Era

Chamarajanagara – Ramasamudra UDA (CHUDA) MP 2041

CHUDA LPA had a population of 69,875 as per the census of 2011 and is estimated at 2,50,000 for the year 2041. For the Master Plan (Revision-II) 2041 for CHUDA LPA, the Base map was prepared using 0.5m 'Quick Bird image.' The ELU in 2017 was based on a total area of 12126.9 Ha. The existing development have been given priority in determining the proposed land use of the Master Plan (Revision-II)-2041. In most of the cases the existing land use has been retained to minimize public distress and loss of property.

Changes in Land Use Categories – CHUDA LPA

S. No.	LAND USE CATEGORY	% CHANGE FORM ELU TO PLU				
		ELU 2017		PLU 2041		%
		Area (Ha)	%	Area (Ha)	%	Change
A	**DEVELOPED/ URBANISED**	**1537.5**	**12.68**	**3408.77**	**28.17**	**15.49**
1	Residential	496.77	4.10	1852.34	15.31	11.21
2	Commercial	63.29	0.52	231.43	1.91	1.39
3	Industrial	52.44	0.43	88.72	0.73	0.30
4	Offices / Public-Semi Public	170.55	1.41	201.11	1.66	0.26
5	Traffic & Transportation	392.44	3.24	683.72	5.65	2.41
6	Parks, Open Space etc.	44.45	0.37	341.34	2.82	2.45
7	Public Utilities	20.95	0.17	10.11	0.08	-0.09
8	Vacant Land	296.61	2.45	0.00	0.00	-2.45
B	**Undeveloped Area**	10589.4	87.32	8691.13	71.83	-15.49
1	Water bodies	750.86	6.19	750.85	6.21	0.01
2	Agriculture	9066.68	74.77	6929.68	57.27	-17.49
3	Existing Developed Boundary of Villages & Rural Pockets	-	-	238.75	1.97	1.97
4	Hillocks & Quarry	771.86	6.36	771.85	6.38	0.01
	GRAND TOTAL	**12126.9**	**100**	**12099.9**	**100**	**0.00**

Source: CHUDA Master Plan Revision II 2041, ELU p. 42; PLU p. 52.

Change in Share of Land Use Categories: In PLU, talking the LPA as the base, the highest increase of 11.21% is proposed for Residential purpose, followed by Parks, Open Space & Playground (2.45%) and Traffic and transportation (2.41%). The additional land required predominantly comes from Agriculture land and to some extent from vacant lands.

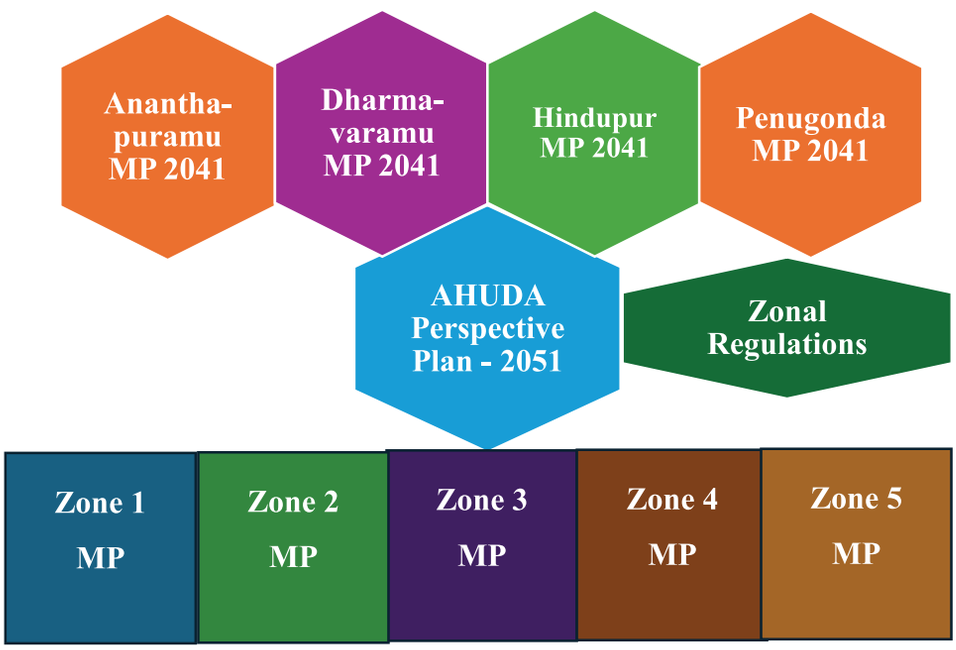
AHUDA Region Phase-1 MPs

The erstwhile, Anantapuramu is the largest district in Andhra Pradesh state with an area of 19,130 Sq.km. Anantapuramu-Hindupur Urban Development Authority (AHUDA) Region Phase-1 comprises four ULBs and 5 zones. AHUDA also comprises 180 villages spread across 18 mandals of Anantapuramu district.

For the entire AHUDA LPA of 3,120.05 sq.km. a Perspective Plan was prepared. The horizon period is 2051 for a projected population of 37,52,432.

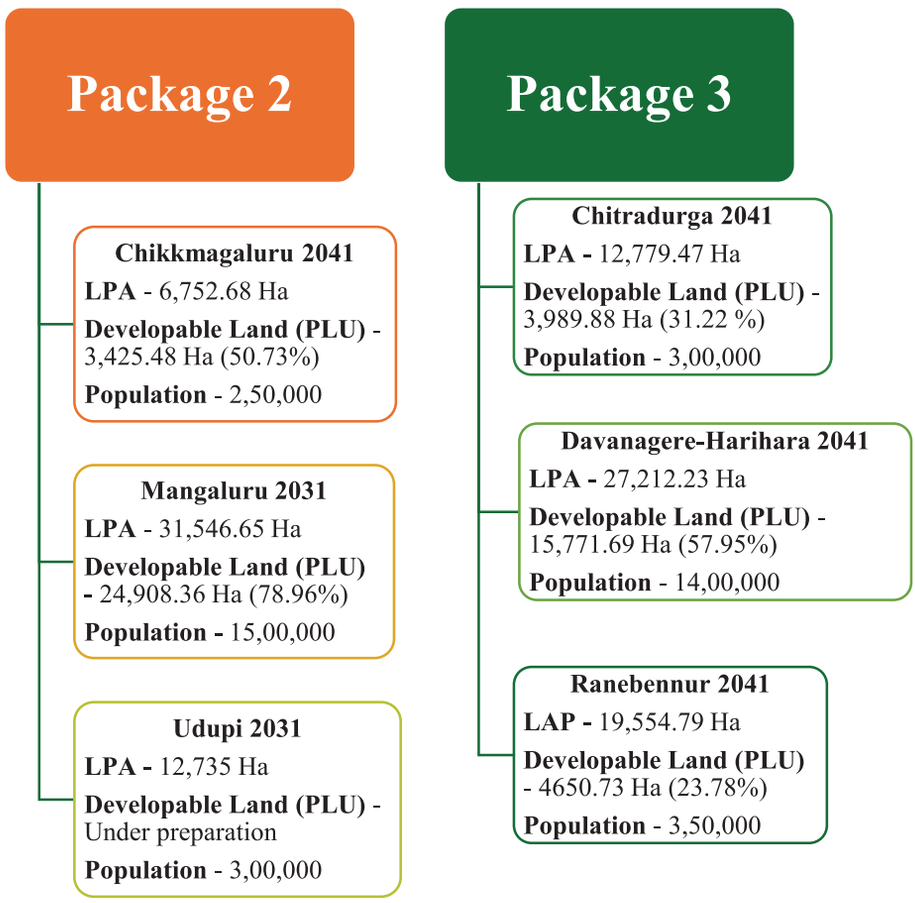
A MP has been prepared for each of the four ULBs (*Anantapuramu* Municipal Corporation; *Dharmavaram* Municipality; *Hindupur* Municipality and *Penugonda* Nagar Panchayat) and five Zones. Horizon period is 20 Years for MPs of individual Urban & Rural Settlements.

Components of AHUDA Region Phase -1 Master Plans



Imagery for Base Maps: 1:4,000 scale for detailed base map on for the conurbation areas of the LPA and 1:8,000 scale for the remaining areas, overlaid with available cadastral details were used. Satellite imagery obtained from National Remote Sensing Centre (NRSC) were used. Existing Base Maps were updated for the 3 towns and Base Map was prepared for the remaining AHUDA area.

Karnataka Package-2 and Package-3 Town MPs



Salient features of these MPs, taken up in 2019, are mentioned in the following part.

Chikkamagaluru LPA: Regio-Centric Concept Plan and Lineo-Corridor Development were adopted.

CLPA: Almost 50% of the developable land is recommended for residential uses. Commercial uses are proposed which are compatible to residential areas to establish efficient work-home relationship.

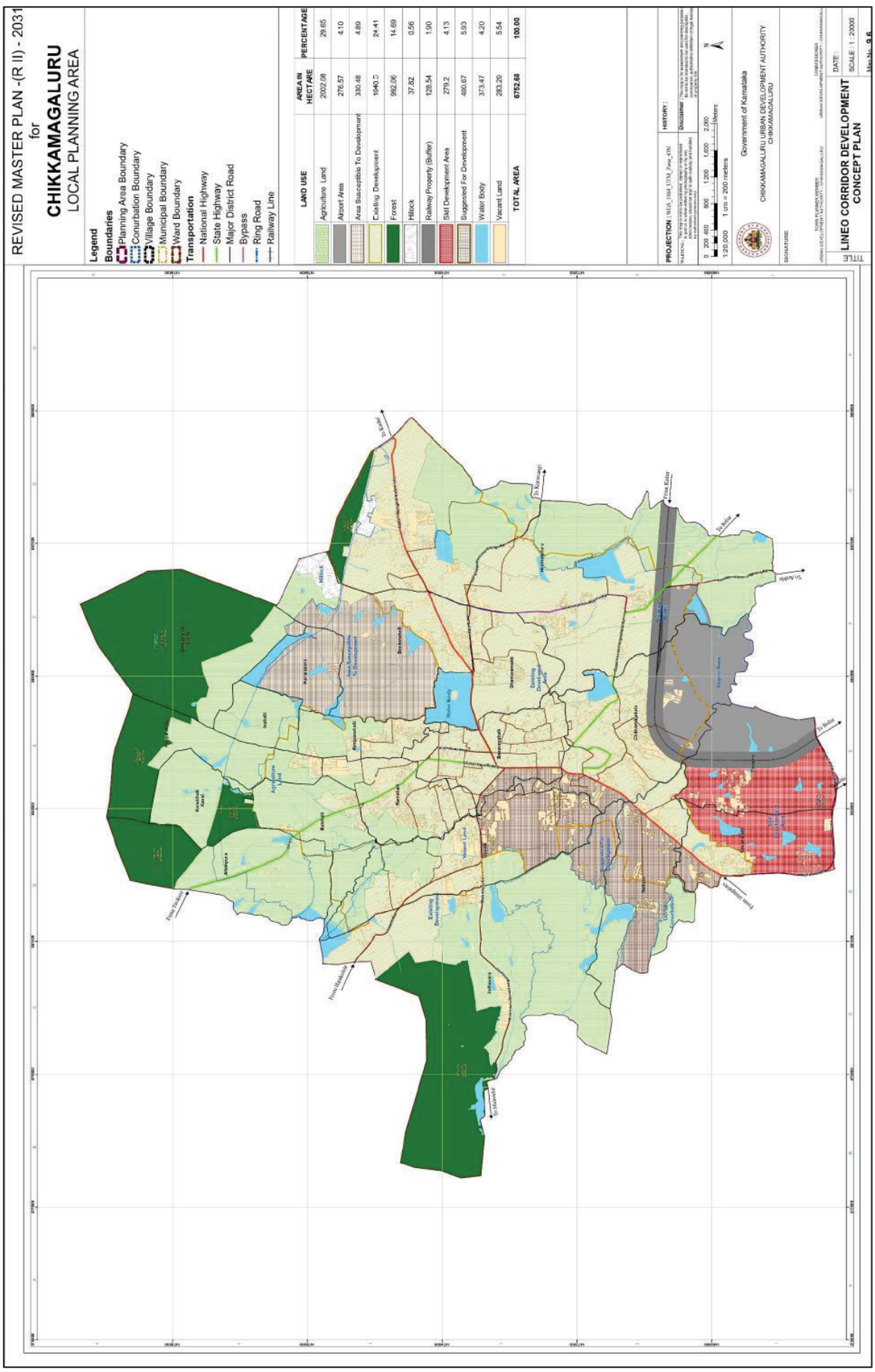
DLPA: The land-use categories and spatial allocations will guide the development of Davangere-Harihara into a modern, accessible, and thriving urban area.

MLPA: Total area of the LPA was extended to 306 from 210.5 sq.km. in 1996. The same is considered for 2031 MP.

RLPA: The Concept Plan provides facilities for businesses involved in manufacturing and processing, where the LPA is known for its agricultural activities. It is also based on the wildlife conservation.

ULPA: PLU is under finalization. Focuses on developing Residential area with P&SP uses; Commercial uses protecting the Costal area; and Ecology, Environment and Tourism.

Lineo- Corridor Development Concept Plan of Chikkamagaluru LPA



Telangana Package-3 Town MPs

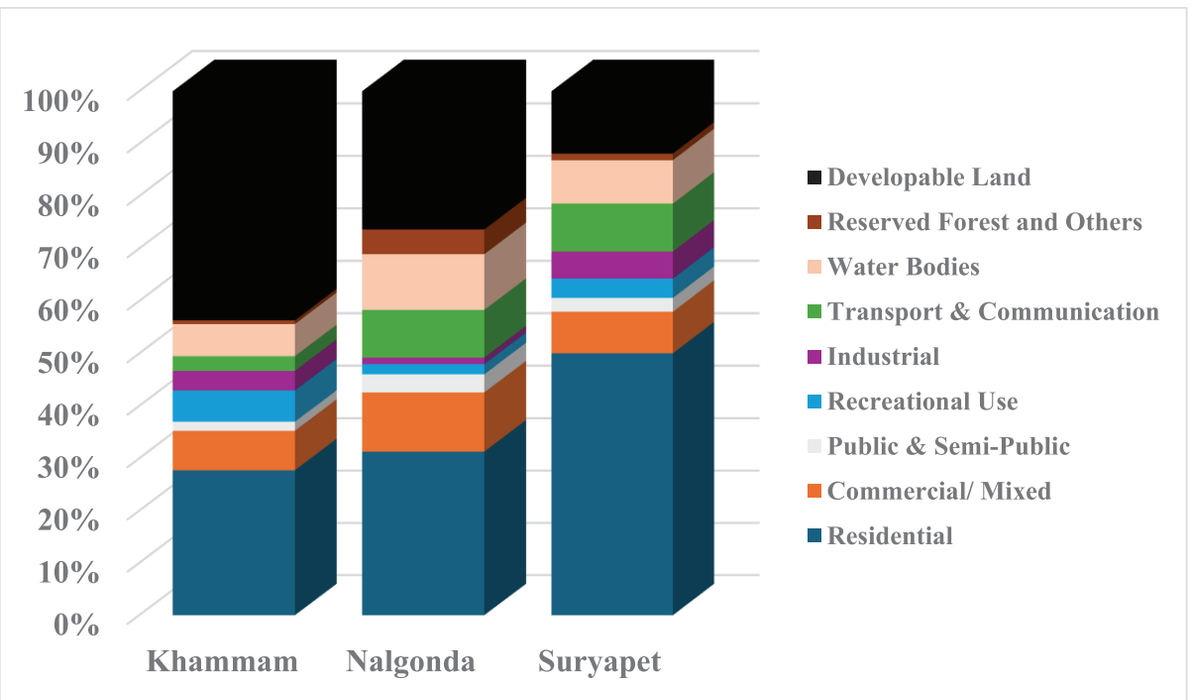
STEM prepared MPs for Khammam UDA (571.83 sq.km.**);** Nalgonda (107.49 sq.km.) and Suryapet (94.69 sq.km.). Horizon period of all three MPs is 2041.

Changes in Share of Land Use Categories: The share for each category in Existing Land Use (ELU) was compared to that in Proposed Land Use (PLU), taking the total LPA as the base.

- Khammam PLU 2041: Highest increase is in Residential use (27.1%) followed by Mixed/Commercial use (7.5%) and Recreational use (6%).
- Nalgonda PLU 2041: Highest increase is in Residential use (20.1%) followed by Mixed use (6.2%) and Transport and communication use (5%).
- Suryapet PLU 2041: Increase in Residential area is very substantial (40.7%), followed by 7.1% for Commercial use and 5.1% for Transport and Communication.

Planning Areas of all 3 towns of Telangana State have ear-marked a category as 'Developable Land' of the total proposed urbanisable area of the town, for the future development purpose. All the land-uses can be permitted, except the major polluting industries .

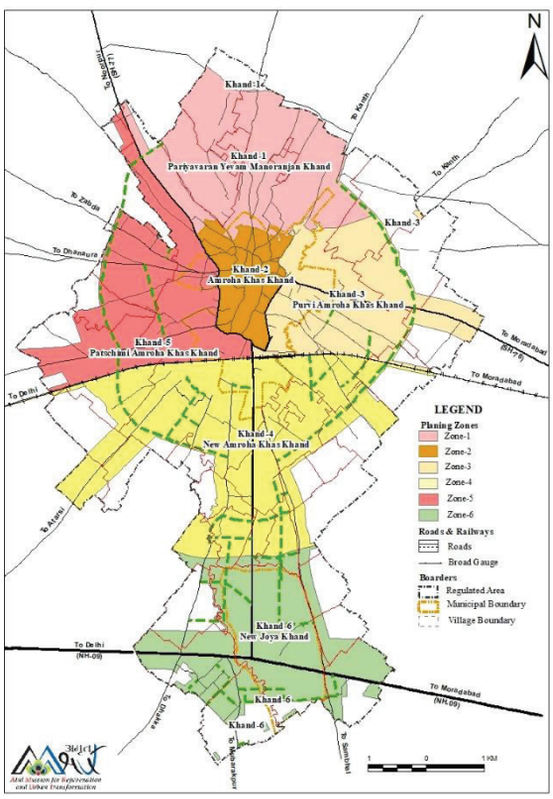
Comparative Land Use in PLUs of Khammam, Nalgonda and Suryapet



Uttar Pradesh Cluster-4 Town MPs

STEM has taken up preparation of MPs for the *Regulated Areas* of three town of Cluster 4 in Uttar Pradesh under AMRUT in 2019.

Planning Zones: For implementation purpose, the MPs in UP has been divided into 6 Planning Zones, based on its estimated population, physical features and contiguity of the land uses and envisaged development proposals.



Phasing of Development Activity: The activities of the Master Plan in UP are divided as Short, Mid and Long term.

Financing Options: Some of the important financing options suggested for the MPs in UP include,

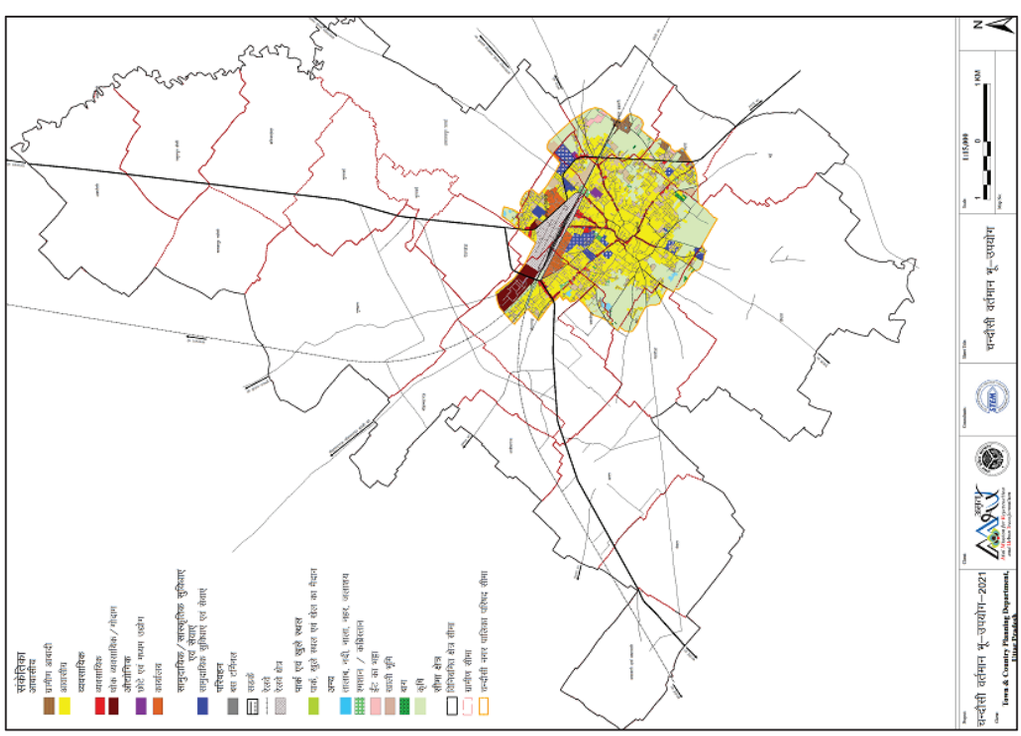
- enhancing conventional source of income;
- improve the coverage of Property tax collection;
- Market Linked assessment of Property Tax;
- Increase income from non-tax revenue i.e. user charges- improve recovery of user charge; and
- Identify land for monetization.

Significant Land Use Changes: Change for a Land Use Category was calculated based on its share in the PLU compared to that in ELU. Total LPA is taken as the base for this purpose.

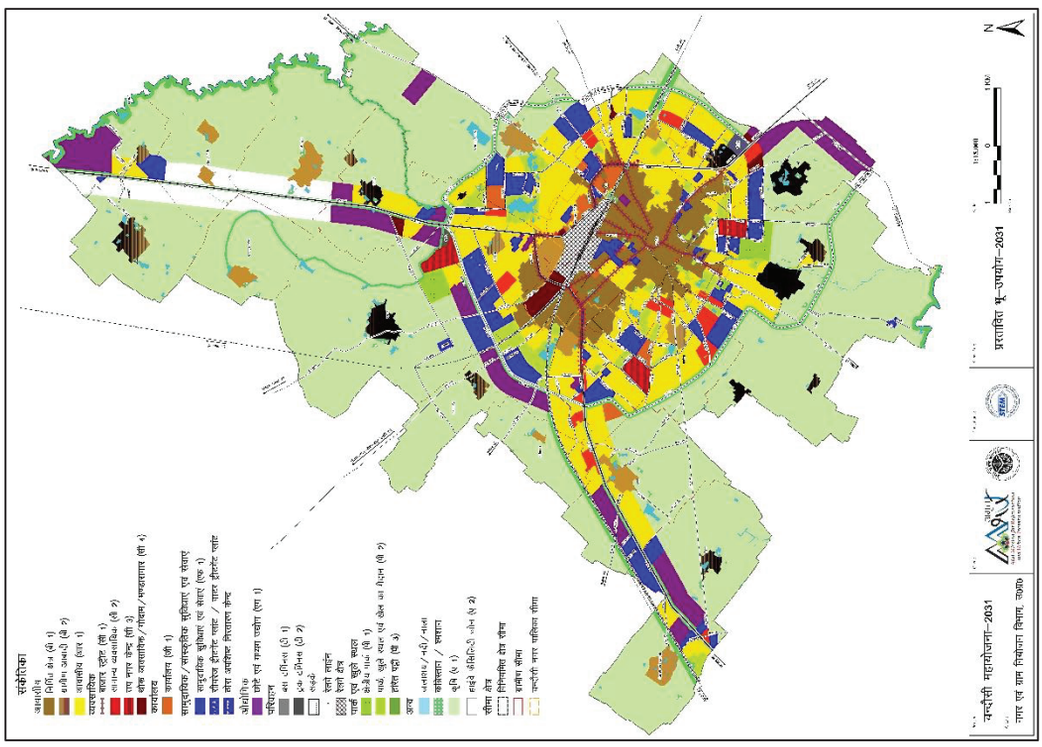
Significant Increases in Land Use Categories of Cluster-4 UP Towns

Amroha (LPA - 7504 Ha)	Chandausi (LPA - 9007 Ha)	Sambhal (LPA - 7635 Ha)
• Built up Area - 8.88% • Parks - 7.52% • Residential - 6.19%	• Parks - 5.50% • Residential - 5.32% • Built up Area - 4.68%	• Industrial - 7.61% • Park - 6.94% • Built up Area - 6.63%

Existing Land Use Chandausi 2021



Proposed Land Use Chandausi 2031



Tamil Nadu MPs 2041

Master Plans preparation for six towns of Package 7 *viz*. Dharmapuri, Gudiyatham, Krishnagiri, Pernampattu, Tirupathur and Vaniyambadi, under AMRUT 2.0, has started in 2024.

Tasks and Deliverables of MPs in Tamil Nadu

Task 1 -
- Baseline study - study of available data and regulations
- **Deliverable 1: Inception Report**

Task 2 &3
- Procurement of **Drone Images**;
- Preparation of base map layers using high resolution drone images as per AMRUT design and standards for drones/UAV technology, 2022
- **Deliverable 2: Spatial attribute collection and vetting of base maps**

Task 4&5
- Preparation of base maplayers using cadastral maps
- Preparation of Existing Land Use (ELU) map
- **Deliverabale 3: ELU map**

Task 6
- Engagement Interface/ Communication Platform
- A website exclusive for the master plan to be launched

Task 7&8
- Survey and data collection
- Exisitng situation analysis and Sectoral issue assessment
- **Deliverable 4: Situation analysis report**

Task 9
- Stakeholder engagement
- **Deliverable 5: Vision Plan and formulation of objectives through stakeholder consultations**

Task 10&11
- Projected requirements
- Concept plan, Projects and Strategy formulation
- **Deliverable 6: Draft proposals**

Task 12
- Preparation of Draft Master Plan
- **Deliverable 7: Draft Master Plan report**

Task 13
- Final Master Plan as per Master Plan (Preparation, publication and sanction) Rules, 2019
- **Deliverable 8: Final Master Plan Report**

Changes in Land Use

Preparation of a MP involves studying the ELU of the LPA of a town/city; projecting the population and density for the 'plan horizon' (often 20 to 30 years); estimating the requirement of various social and physical infrastructure and preparation of the PLU, accordingly. Appropriate ZRs are spelt out, to ensure proper use of the provisions made in the MP.

Change for a Land Use Category was calculated based on its share in the PLU compared to that in ELU. Total LPA is taken as the base for this purpose. An *inter-state* analysis, as how the ELU has changed, for important categories of land use, in the MPs, prepared by STEM is presented below.

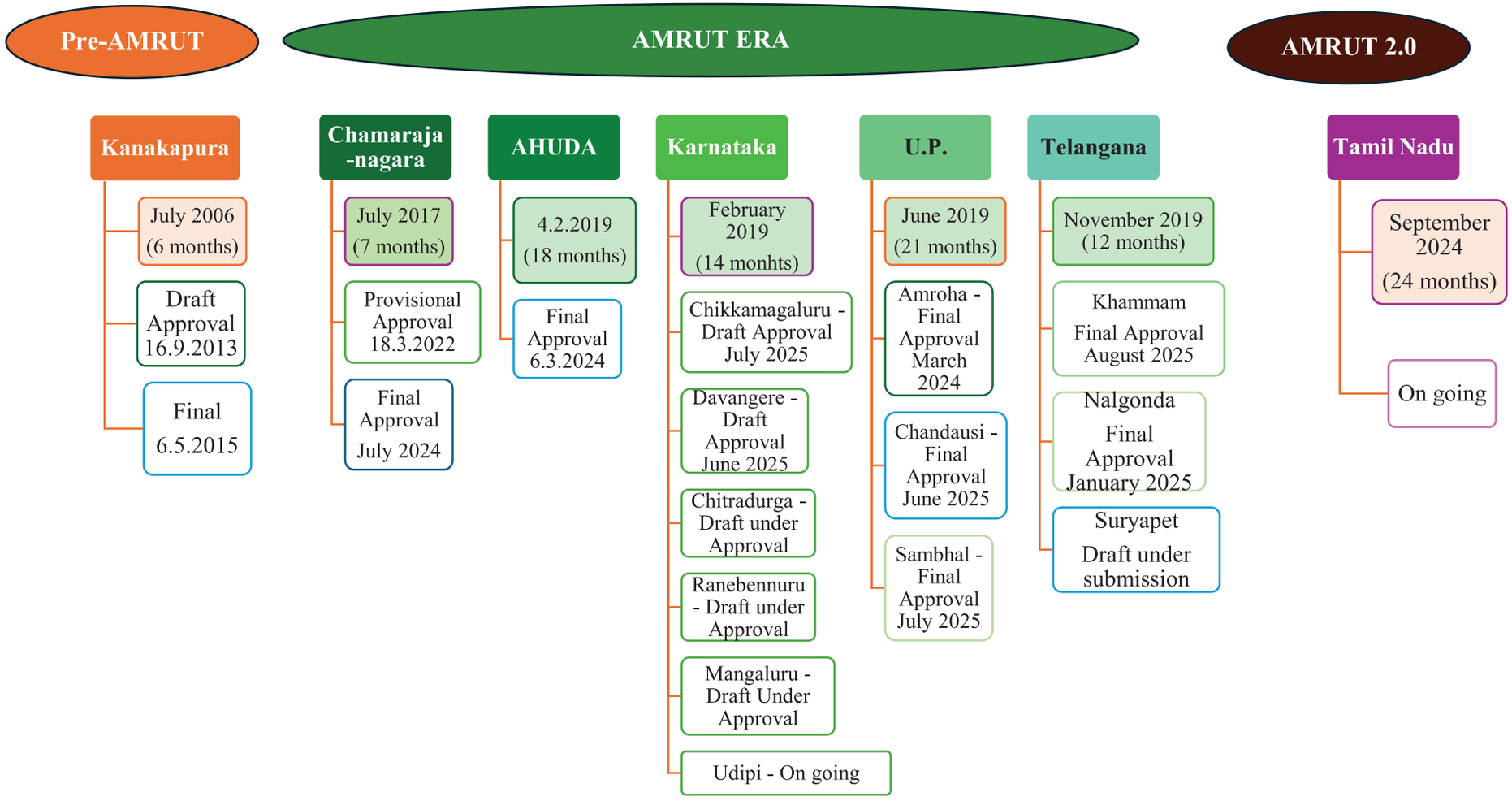
Changes in the Share of Important Land Use Categories - An Inter-State Comparison

S. No.	LAND USE CATEGORY	% CHANGE FORM ELU TO PLU			
		AP	KAR	UP	TS
		AHUDA	Chikka-magaluru	Chandausi	Nalgonda
	Planning Horizon	2051	2041	2031	2041
	Population	37,52,432	2,50,000	3,21,857	3,85,447
1	Residential	6.30	15.67	5.31	20.09
2	Commercial	0.40	0.77	2.12	4.62
3	Industrial	1.40	1.25	2.35	0.75
4	Public and semi-public	0.50	1.61	3.60	0.96
5	Traffic & Transportation	2.20	2.56	2.57	5.04
6	Parks and Open Spaces	3.70	4.72	1.85	1.76
7	River / Nala/ Water bodies	0.00	0.78	0.04	-0.31
8	Vacant Land / Land not in use	-2.9	-5.48	-2.59	-12.00
9	Agriculture	-14.2	-23.12	-27.06	-52.56
10	Protected/Notified Forest	0.00	-0.06	0.01	-0.08
	PLU TOTAL (Ha)	**3,11,977.67**	**6,752.68**	**9,007.80**	**10,748.67**

Increase in the share of the area for Residential use is the highest in the project town of all four states, with Nalgonda showing the highest among the four with 20.09%. The second highest increase is in the share of Traffic and Transportation in Nalgonda (5.04%); for Public and Semi-public category in Chandausi (3.6%); for Parks and open spaces in Chikkamagaluru (4.72%) and AHUDA (3.70%). Decrease in the share is the highest in land for Agriculture, with the highest decrease of about half in case of Nalgonda.

Completion of the Master Plans

Time Taken for Completion of Various Master Plans of STEM



Major Challenges

- Getting Required Data in Time: Accurate and Up To Date data are required from a number of line departments. This is a cumbersome and time-consuming process.
- Quality of Satellite Imagery and Base Maps: STEM used imagery procured from *NRSC* (AHUDA, Telangana and UP); *Karnataka State Remote Sensing Applications Centre*; drones for Tamil Nadu MPs. Images provided by the state government agencies, sometimes don't meet the quality requirements, hence are a bottleneck in the progress of the assignment.
- Schedule of Payment: The payment terms are often biased towards the Government. Substantial deliverables need to be completed before revenues start flowing in.
- Release of Payments: Getting payments, even after completing a mile stone, is a herculean task. Approvals at different levels are required and funds may come from different sources.
- Ownership of the Master Plan: The contract may be signed with one agency, while the responsibility of payment could be of another entity. In Karnataka, the onus of making payment, was transferred from DTCP to respective LPAs, mid-way.
- Interests of Stakeholders: During the working out the *PLU*, additional land (agricultural, vacant etc.) needs to be acquired. Interests and influence of some stakeholders' take precedence. Categorization of land, alignment of ring road etc. often are influenced by powerful entities. Amicably handling objections to PLU from affected stakeholders is crucial for approval of the final MPs.
- Disasters: Covid affected the Master Plans under AMRUT.
- Project Completion: Ultimately completing the assignment within the time assigned, becomes virtually impossible. All the MPs took more time than the duration as per the agreement signed.

Lessons Learnt

1. Adoption of New Technologies: Developing new skill sets like employment of Drones in conjunction with DGPS surveys is imminent and are future oriented.
2. Balancing Project Expenditure with the Revenues: Shrewdness is required in balancing the project expenditure and revenue to ensure the project does not become a red flag. Primary surveys need to be scheduled as per the progress of the work/ deliverables. as they require huge resources – financial and human. Astute handling the project funder is a difficult but crucial aspect.
3. ZR: They are an integral part of the MPs. Can be leveraged effectively, by learning from the past (like Sony World Junction in Bangalore) and its enforcement ensure proper land use and development.
4. Stakeholder Expectations: Ultimately, the realization that MPs assignments are more of meeting the expectations/ aspirations of

different stakeholders, which is highly sensitive, than simply employment of technical expertise of urban planners, GIS experts and other professionals or adoption of newer technologies.

5. Time Taken for Completion: Preparation of MPs is a time-consuming process. Getting approvals/ funds from the Government of India and other sources; the urgency and importance of completing the MP, all take their own time. Be prepared for the extended period.
6. Land Use Categories: Types and names used differ from state to state and also some times with in a ULB in ELU and PLU Tables. In Telangana and Andhra Pradesh, Agriculture and Vacant Land are clubbed under a third Category 'Developable Area'. Such category is not used in Karnataka and UP Master plans.

Future Directions

- Duration of MP Assignments: Both the Government agencies (like DTCP, ULBs) and consultants need to work out and agree upon a more realistic time frames for preparation and approvals of MPs.
- Data from Government Departments: State Government agencies are aware of data requirements from line departments, for preparation of MPs under AMRUT. ULBs and the Line Departments should be forewarned and be ready to share relevant data with the project consultants, in time.
- Approval Process: Need to be streamlined, to ensure the progress of MPs is smooth.
- Release of Payments: The agencies awarding the MPs should be able to mobilize the required funds, so that the consultants can be paid in time.
- Consultants: Need to be equipped with competent and adequate man power with requisite skills, at different stages, so that the progress can meet the expectations of the Government agencies.

CAPACITY BUILDING INITIATIVES

STEM has successfully translated its experience and expertise in MPs, especially use of GIS and related applications, in to learning endeavors.

- **Computer Application for Land Use Planning.** TWO batches in 2018, for 'Senior Officials of Chennai Metropolitan Development Authority.'
- **Technical Software (s) / Application of Geo. – Informatics in Urban Projects.** THREE baches in 2023 for Officials of ULBs and other Organizations of Government of Tamil Nadu.
- **Software Applications for Urban Water Supply Systems and Implementation of GIS System**. FIVE batches in 2023 for Officials of ULBs and other Organizations of Government of Tamil Nadu.

SELECT LIST OF URBAN DEVELOPMENT ASSIGNMENTS

S.NO	ASSIGNMENT NAME	CLIENT	YEAR
1	Technical Support for Implementation of Comprehensive Capacity Building Program under JnNURM	Ministry of Urban Development (MoUD), Govt. of India	2013-2015
2	Capacity Building and Training Programs (CBTPs) for the Urban Sector in Tamil Nadu – Urban Governance & Management (KfW assisted SMIF-TN II P2 Program)	Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL), Govt. of Tamil Nadu (GoTN).	2023-2025
3	Preparation of Rajasthan Urban Database Indicators (RUDBI) under RUIS for Six Cities (Jaipur, Jodhpur, Udaipur, Ajmer, Bikaner & Kota) in Rajasthan	Dept. of Information Technology & Communication, Govt. of Rajasthan	2007-2009
4	Tools and Guidelines for Implementation of the Social Sustainability and Grievance Management Framework for TNUHDB	Tamil Nadu Urban Habitat Development Board *(TNUHDB),* GoTN).	2024-2025
5	City Development Plans (CDPs) for Three Cities in Madhya Pradesh (Ambah, Raisen & Begumganj)	Urban Administration & Development Department (UADD), Govt. of Madhya Pradesh	2008-2010
6	General Town Plans (GTPs) for Four Towns in Andhra Pradesh (Kurnool, Nizamabad, Karimnagar & Guntakal) (DFID funded)	Andhra Pradesh Urban Services for the Poor (APUSP), Govt. of Andhra Pradesh.	2007-2008
7	City Development Plan (CDP) for Mangalore	Karnataka Urban Infrastructure Development & Finance Corporation (KUIDFC), Govt. of Karnataka (GoK).	2009-2010
8	Infrastructure Development and Investment Plan (IDIP) for Bangalore Urban Agglomeration under Mega City Scheme	KUIDFC, GoK.	2004-2005
9	City Level Investment Plans (CLIPs) for 15 ULBs in Three Districts.	KUIDFC, GoK.	2007-2009
10	Project Identification, Feasibility and Finance Operating Plans (FOPs) for ULBs in Tamil Nadu.	Tamil Nadu Urban Development Project, GoTN.	1992-1995
11	Effective Demand for Housing in Tamil Nadu - Urban & Rural across 21 Districts	TNUDP, GoTN.	1991
12	Housing & Land Development Program (HALDEP) for Seven Towns in Karnataka	Karnataka Housing Board, GoK.	1990-1991

S.NO	ASSIGNMENT NAME	CLIENT	YEAR
13	Housing & Land Development Program (HALDEP) for Three Towns in Tamil Nadu	Project Management Group, GoTN.	1995
14	Integrated Plan for Infrastructure & Municipal Services (IPIMS) for Greater Mangalore: 1996-2001	Mangalore Urban Development Authority (MUDA), GoK.	1995-1996
15	Integrated Environmental Infrastructure Development and Capital Investment Planning.	Dept. of Housing, GoK.	1997-1998
		DTCP, GoTN.	1997
16	Development Plan for Poorly Urbanized Towns in Tamil Nadu.	Directorate of Town and Country Planning, GoTN.	1998-1999
17	Concept Plan on Slum Upgradation and Development Programme (SUDP) for 21 Class I Cities in Karnataka	Karnataka Slum Clearance Board, GoK.	1999-2000

CURRENT PROJECTS

- Capacity Building and Training Programs for the Urban Sector in Tamil Nadu – Package IV under the KfW assisted SMIF-TN
- Evaluation of Pradhan Mantri Krishi Sinchayee Yojana (Other Interventions) in Karnataka (2019 20 to 2023 24)
- Evaluation of Karnataka Integrated Urban Water Management Investment Programme (2013-14 to 2023-24).
- Technical Support Unit for Achievement of the Disbursement Linked Indicators and Program Action Plan under TNCRUDP
- Master Plans for Package 2 and 3 for 6 Towns in Karnataka
- Master Plans for Package 3 for 3 Towns in Telangana.
- Master Plans for Package 7 for 6 Towns in Tamilnadu

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