



AMITY UNIVERSITY
— UTAR PRADESH —

17.2.1 University initiatives for inputs into SDG policy development by Governmental and Non-Governmental organizations

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- 1. Partnership Conclave 2023 titled “ENVISIONING SUSTAINABLE NATIONAL CAPITAL REGION 2030”**
- 2. Inception Workshop on “Water and River sensitive urban development”**
- 3. Student internship with governmental and non-governmental organizations**



PARTNERSHIP CONCLAVE 2023

ENVISIONING SUSTAINABLE NATIONAL CAPITAL REGION 2030

Date: 12th-13th April, 2023

Outcome Report

Urban development is fundamental for urbanization and serves as an engine of economic growth for our cities. It is governed by urban planning machinery and capacity building with respect to technical, organizational, and institutional development in spatial planning and design. Delhi-NCR, though being the economic, administrative, cultural hub of the India in many ways, unfortunately is not able to meet the increasing demands of high urbanisation and witnesses lack of capacity building, technological advancements, social cohesion, demeaning the liveability aspect. With this backdrop of the Delhi-NCR region and the mission of the Amity School of Architecture and Planning *“to serve the society by achieving pre-eminence in rational and sensitive thinking towards the built environment for resolving present and upcoming challenges faced”*, the institution was motivated to take forward the initiation of Partnership Conclave 2023. The aim of the Conclave was to provide a discussion platform to key players involved in urban transformation processes to deliberate on current issues towards physical, social, and environmental urban developments of Delhi-NCR region for the Sustainable Development Goals and Agenda 2030.

The criteria to invite eminent speakers at the Conclave was to attain insights and perspective on the themes through their rich field experience and also how they could help to reinforce learning of the subject matter with innovative ideas and fresh perspective among the attendees. They were selected on the criteria of their Connectivity with the field, coordination with National and Local Governments for projects of Delhi-NCR region, along with the relevant industry knowledge and expertise in the invited theme of the Conclave. These invited speakers were instrumental in construction and implementation of the Nation Capital Region’s planning and policy framework development, and were closely involved with the delivery of the projects that focussed on critical issues of the region.

Future collaborations to organize events, knowledge sessions and jointly engage in research/urban development projects have been conveyed and planned with the connected speakers and organizations. For Instance, on 2nd may, 2023, ASAP and National Institute of Urban Affairs jointly organised a workshop on Water and River Sensitive Urban Development as part of Academic collaboration between the two institutes. The event output was to enhance the academic engagement towards the government projects and involve various stakeholders under one umbrella towards sustainable growth. 2 students from planning domain have been placed for internship at TCPO on GIS Based planning projects. NCRTC (National Capital Region Transport Corporation), extended support for future employability of the students at the organization. Several experts have also volunteered to convert the dialogues of the Conclave subject discussions further into department’s’ academic curriculum through guest lectures,

webinars, research and consultancy projects. These future prospects create tangible gains not only for the students but also for the faculties and researchers of the institute alike.

Following novel points as urban planning strengths were emphasized by the speakers to promote Sustainable Delhi-NCR region 2023:

- **Adaptability:** Urban planning that is adaptable to changing social, economic, and environmental conditions that are accommodating evolving needs and challenges of changing demographics, technological advancements, and environmental changes of the region.
- **Expansion:** Urban planning that allows for controlled and well-managed expansion can promote orderly growth and development of urban areas. Strategic planning that considers factors such as land availability, transportation networks, infrastructure provision, and environmental impacts can help cities grow in a planned and sustainable manner.
- **Incremental:** Urban planning that allows for incremental development and small-scale interventions can promote community participation, entrepreneurship, and innovation. Incremental planning approaches that enable residents and stakeholders to contribute to the development of their neighbourhoods, such as through placemaking, participatory design, and tactical urbanism, can create more inclusive and vibrant urban spaces.
- **Human scale:** Urban planning that prioritizes human-scale development and design can create cities that are walkable, accessible, and liveable for people of all ages and abilities. Planning that focuses on creating pedestrian-friendly streets, mixed-use neighbourhoods, public spaces, and active transportation options can promote healthier lifestyles, social interaction, and community cohesion.
- **Unified approach:** Urban planning typically involves multiple stakeholders, including government agencies, private developers, community organizations, and residents. Achieving a unified approach that integrates diverse perspectives and interests may provide fresh perspectives.
- **Plug and play models:** Plug and play models involve pre-designed, modular, and scalable solutions for urban services that can be easily replicated or adapted in different urban contexts. These models often leverage technology, data, and standardization to streamline service delivery and promote efficiency, interoperability, and scalability.
- **Infusing services into planning:** Urban-style services may involve integrating service provision into the urban planning process itself. This can include incorporating service-oriented design principles, such as walkability, accessibility, and sustainability, into urban planning and development, and ensuring that service provision is a key consideration in urban design, land use, and transportation planning.
- **Interdependent inter-agency collaboration/coordination:** Urban-style services may require collaboration and coordination among different agencies, departments, and stakeholders involved in service delivery. This can include inter-agency partnerships, public-private collaborations, and community engagement processes that foster coordination, information sharing, and joint decision-making to optimize service delivery and ensure that services are provided in a coordinated and coherent manner.

Participants: the members from international and national universities/institutes, research institutions, government organizations, planners and decision makers, field personnel, consultants, technical experts, research scholars, students. (No.- Approx. 150)

Chief Guest- Sri. Ajit Pai (<i>Chairman, DUAC and former Head of Economics & Finance, Niti Aayog</i>)
Guest of Honor Sri R. Srinivas (<i>Former Town and Country Planner and presently visiting faculty School of Planning and Architecture</i>)
Guest of Honor Sri Naresh Kumar Dhiran (<i>Additional Chief Planner, TCPO</i>)
Guest of Honor Sri Rajeev Malhotra (<i>Former Chief Planner, NCR Planning Board</i>)
Guest of Honor Sri A.K. Jain (<i>Former Commissioner, Planning, DDA</i>)

LIST OF GUEST SPEAKER

Theme I: Sustainable Urban Development	
Topic	Speakers
Integrated Regional Planning for Urban Transitions	Sri Sandeep Kumar (<i>Principal architect, Plural Designs</i>)
Solid Waste Management	Ms. Paramita Datta Dey (<i>Head, Resources & Waste & Program Lead</i>)
Urban Resilience and Climate Change	Dr. Chandan Ghosh (<i>Prof. & Head, Resilience infrastructure Division, NIDM</i>)
Placemaking	Prof. (Dr.) Arunava Dasgupta (<i>Professor, Department of Urban Design, Coordinator; President, Institute of Urban Designers, India – IUDI</i>) Sri Deependra Prasad (<i>Principal Architect, DPAP Studio</i>)
Theme II: Urban Infrastructure	
Topic	Speakers
Smart City Initiatives	Prof. (Dr.) Amit Hajela (<i>Director and Domain Head, APD</i>) Sri Anirudh Gupta (<i>Director Government Advisory BDO Consulting, India</i>)
Blue-Green-Grey Infrastructure	Sri Jacob Manohar A.P (<i>Associate Town Planner, TCPO</i>) Sri Lovlesh Sharma (<i>Danida Fellow & Senior Water and Urban Infrastructure Expert, at National Institute of Urban Affairs (NIUA) – New Delhi, India</i>)

Theme III: Urban Mobility

Topic	Speakers
Eco mobility and Tactile urbanism	Sri P.S. Uttarwar (<i>Former additional commissioner DDA, worked in UTIPEC</i>)
Intelligent transport system	Dr. Pawan Kumar (<i>Associate Town Planner, TCPO</i>) Ms. Meetushree (<i>Former Advisor, NRCTC</i>)
Last Mile Connectivity	Prof. (Dr.) Sewa Ram (<i>Professor and HoD, Transport Planning, SPA, New Delhi</i>) Sri Abhinav Kumar (<i>Assistant Manager, Transport Planning, NCRTC</i>)

Theme IV: Technology in urban development

Topic	Speakers
Smart Solutions (IoT; AI; Sensors, etc)	Sri Vikas Chandra (<i>Advisor, Deloitte Touche Tohmatsu India LLP, New Delhi</i>) Sri Ashish Bahal (<i>Lucent Worldwide</i>)
Urban simulation models (GIS and BIM)	Mohd. Monis Khan (<i>Town & Country Planner, TCPO</i>)
Affordable Housing	Sri Pankaj Gupta (<i>Deputy Chief, BMTPC</i>)

Theme V: Technology in urban development

Topic	Speakers
Institutional Capacity Building	Sri Divya Kush (<i>Ex- President, IIA</i>)
Co-creating solutions with Multiple Stakeholders	Sri Dipika Tuteja (<i>Founder, In AWE</i>)
Management of Resources: Human, Natural and financial	Sri T Chakravarty (<i>Urban Economist</i>) Ms. Aparna Kanojia (<i>Visitng Faculty, SPA</i>)

Theme VI: Participatory Approach

Topic	Speakers
Decentralization	Prof. (Dr.) K.K. Pandey (<i>Professor, IIPA</i>)
Bottom-up Approach in Development	Ms. Alka Arya (<i>Director, DDA (NCRPB)</i>)
Roping in NGOs/CSOs	Ms. Banashree Banarjee (<i>Architect-Planner</i>)

Institutional IQAC's working/ progress and Quality initiatives



INCEPTION WORKSHOP

ON

WATER AND RIVER SENSITIVE URBAN DEVELOPMENT

MAY 2, 2023

VENUE: AMITY SCHOOL OF ARCHITECTURE AND PLANNING, NOIDA

TENTATIVE PROGRAMME AGENDA

TIME	SESSION DETAILS	TRAINER/MODERATOR
11:-11:15	Registration	
11:15-11:25	Introduction & Context Setting	Mr. Lovlesh Sharma, <i>Head, Centre of Youth Affairs, NIUA</i>
11:25-11:45	Special Address	Dr. Amit Hajela, <i>Director, Amity School of Architecture and Planning</i>
11:45-11:55	Rivers & Water in Urban Scenario	Shilpi Chakraborty, <i>Junior Research Specialist, NIUA</i>
11:55-12:05	Energiser	
12:05-12:20	NIUA Portfolio	Ms. Jyoti Verma, <i>Senior Research Specialist, NIUA</i>
12:20-12:30	Glimpses of Academic Engagement	Ms. Manju Rajeev Kanchan <i>Research Associate, NIUA</i>
12:30-12:40	Way Forward	
12:40-12:50	Reflections from Students	Mr. Lovlesh Sharma, <i>Head, Centre of Youth Affairs, NIUA</i>
12:50-13:05	Reflections from Faculties	
13:05-13:15	Concluding Session and Group Photo	

Institutional IQAC's working/ progress and Quality initiatives



Institutional IQAC's working/ progress and Quality initiatives





नगर एवम् ग्राम नियोजन संगठन
आवासन और शहरी कार्य मंत्रालय
भारत सरकार
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Town and Country Planning Organisation
Ministry of Housing and Urban Affairs
Government of India
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File No.2-2017/CRT/TCPO/Vol.IV

Dated: 21st July, 2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Ishika Dixit, student of Amity University, Noida has successfully completed her Internship with Town and Country Planning Organisation, Ministry of Housing and Urban Affairs, Government of India for the period of five weeks (29.05.2023 to 30.06.2023). During the Internship period, she was deputed to work in URIS Division under the guidance of Mohd. Monis Khan, Town and Country Planner, on the subject "Critical Analysis of Sub-schemes on GIS based Master Plan formulation for AMRUT 2.0". During her period of internship she has worked diligently and completed the assigned task successfully and submitted a report. She has been found to be sincere and hardworking. Her performance has been found to be satisfactory.

We wish her every success in her life and career.

(R. Muralidhara Naik)
Town & Country Planner

(Naresh Kumar Dhiran)
Additional Chief Planner

**“Critical Analysis” of sub-schemes on GIS based
Master Plan formulation for AMRUT 2.0**

Submitted By-
Ishika Dixit
Under the Guidance of - Sh. Mohd. Monis Khan



Town & Country Planning Organization

—
Ministry of Housing and Urban Affairs
Government of India

—
June 2023



ACKNOWLEDGEMENT

I would not have undertaken this journey without my guide Sh. Mohd. Monis Khan sir for providing their knowledge and expertise at each step of my thesis. Their critical reviews and comments help me get through a better understanding of my topic. I'm grateful to Sh. Arvind Kaushik for being a constant support throughout my internship at the Town and Country Planning Organization.

Ishika Dixit

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About Town and Country Planning Organization

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). TPO was set up in 1955 to formulate the First Master Plan for Delhi. The TPO completed the assigned task of formulation of Master Plan for Delhi in September 1962. Subsequently in 1957, Government of India set up another organization called Central Regional and Urban Planning Organization (CRUPO) to evolve a plan for Delhi Region and to advise on the development of steel towns, river valley projects and other matters related with urban and regional planning. CRUPO started functioning activity from September 1959 in an advisory capacity to the Central Ministries of the Government of India, Planning Commission, State Governments, Local Bodies and Public Undertakings. The organization also initiated studies on various aspects of urban and regional planning and development. The first conference of State Ministers dealing with Town and Country Planning was organized by CRUPO in 1960 which made a beginning for undertaking a countrywide programme for preparation of master plans, enactment of town planning legislation, setting up of Town Planning Departments in the States and Union Territories and augmentation of facilities in education and training in town and country planning.

AMRUT Scheme

Atal Mission for Rejuvenation and Urban Transformation (AMRUT) was launched on 25th June 2015 in selected 500 cities and towns across the country. The Mission focuses on 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. A set of Urban Reforms and Capacity Building have been included in the Mission.

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. So far, States/UTs have taken up 5,873 projects worth ₹82,222 crore, of which 4,676 projects worth ₹32,793 crore have been completed, and another 1,197 projects worth ₹49,430 crore have been grounded which are at various stages of implementation. Further, overall works worth around ₹66,313 crore have been physically completed and expenditure of ₹59,615 crore has been incurred.

Till date, 134 lakh water tap connections and 102 lakh sewer connections (including households covered through Faecal Sludge and Septage Management - FSSM) have been provided through AMRUT & in convergence with other schemes against targeted 139 lakh water connections and 145 lakh sewer connections respectively.

AMRUT Mission has been subsumed under AMRUT 2.0, which was launched on 01st October, 2021 and ongoing projects of AMRUT 1.0 will be funded with CA till 31st March 2023.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0 scheme, which has been launched on 01 October, 2021 for the period of 05 years i.e. from the financial year 2021-22 to the financial year 2025-26, is designed to provide universal coverage of water supply through functional taps to all households in all the statutory towns in the country and coverage of sewerage/septage management in 500 cities covered in first phase of the AMRUT scheme.

AMRUT 2.0 will promote circular economy of water through development of City Water Balance Plan (CWBP) for each city focusing on recycle/reuse of treated sewage, rejuvenation of water bodies and water conservation. It will help cities to identify scope for projects focusing on universal coverage of functional water tap connections, water source conservation, rejuvenation of water bodies and wells, recycle/reuse of treated used water, and rainwater harvesting. Based on the projects identified in CWBP, Mission envisages to make cities 'water secure' through circular economy of water.

Mission also has a reform agenda on ease of living of citizens through reduction of non-revenue water, recycle of treated used water, rejuvenation of water bodies, augmenting double entry accounting system, urban planning, strengthening urban finance etc.

Other components of AMRUT 2.0 are:

- i. Pey Jal Survekshan to ascertain equitable distribution of water, reuse of wastewater, mapping of water bodies and promote healthy competition among the cities /towns.
- ii. Technology Sub-Mission for water to leverage latest global technologies in the field of water.
- iii. Information, Education and Communication (IEC) campaign to spread awareness among masses about conservation of water.

The total indicative outlay for AMRUT 2.0 is ₹2,99,000 crore including Central share of ₹76,760 crore for five years. This outlay includes funding of ₹22,000 crore (₹10,000 crore as Central Assistance) for ongoing projects of AMRUT till March 2023.

AMRUT Reforms

A set of Reforms and Capacity Building have also been included in the Mission. The Mission mandates a set of 11 Reforms which have to be implemented by all the States and 500 Mission cities within a period of 4 years.

The reforms are at various stages implementation and expected to be completed in the mission period 2015-2020. The AMRUT reforms are to be implemented will Improve transparency, governance and delivery of quality service with improved environmental conditions in cities. These reforms also account for the Good governance, accountability, service delivery system and improved environmental conditions. These broadly covered–Municipal Governance, Finance, Municipal service delivery, and Environment etc. As per AMRUT budget Mission statement /guidelines a provision of 10% as a incentives is earmarked in budget for the States which implement these reforms.

AMRUT 2.0

MoHUA has launched AMRUT 2.0 on October 1, 2021, under which a sub-scheme on 'For Class-II towns with the population 50,000 - 99,999' has been proposed with the objectives to develop standardized base maps, land use maps, master plans, and urban geo-portal using Geographical Information System (GIS).

Formulation of GIS based Master Plan for AMRUT cities.

Introduction

Title: Formulation of GIS Based Master Plans for AMRUT cities.

Objectives: To develop common digital geo-referenced base maps and land use maps using GIS and Master Plan Formulation for 500 cities selected as AMRUT cities.

Rationale: i. Master Plan for decision-making.
ii. Effective land use management and utilization.
iii. Spatial growth management.
iv. Project Planning
v. Urban Management.

NRSC- QGIS on Bhuwan Portal.

Scope and Coverage: i. Cities which do not have Master Plans
ii. Whose Master Plans are about to expire by 2021.

Major Deliverables: i. Base Map and Thematic maps: 1:4000 scale.
ii. Urban Database Creation: Sector-wise data collection and data analysis.
iii. Formulation of Master Plan: as per State Town and Country Planning Act.
iv. Capacity Building

Process of formulation of GIS based Master Plans:

1. Demarcation of mapping area
2. Satellite data acquisition
3. GPS Survey
4. Geo-referencing
5. Topology Building
6. Ground Training
7. Value Addition from line departments
8. Quality check and vetting
9. GIS base map
10. Primary and Secondary surveys
11. Spatial attribute data collection
12. Thematic map generation
13. Identification of issues and potentials
14. Projected Requirements
15. Policy Formulation
16. Draft Proposals
17. Draft Master Plan

Roles and Responsibilities

Role of Central Government

The MoUD/ Town and Country Planning Organization (TCPO) will monitor and coordinate the implementation of the scheme besides preparation of Design & Standards and model RFP documents etc. for States/Cities for procurement for consultancy services for the Master Plan Formulation component.

MoUD will coordinate the satellite data acquisition and final base map preparation at 1:4000 scale will be undertaken by NRSC, Department of Space.

Role of State Government

It is the nodal agency implementing the Reform at State level.

The identification of priority AMRUT cities and demarcation of area of mapping will be done by respective State Mission Directorate in consultation with State Town Planning Departments and the ULB concerned.

- Priority may be given to cities whose existing Master Plans are in force, but the validity is only till 2020 or earlier.
- The state keeping in mind the size and importance of cities and the status of existing plans or lack of it may decide further priorities.
- Ideally, the phasing should not go beyond three years to cover all AMRUT cities. The State Mission Directorate in association with State Town & Country Planning Departments/ ULBs will formulate the GIS based master/ development plans and the procurement of consultancy services for the master plan component (including spatial attribute data collection, urban data collection, and preparation of draft master plan document) will be done by them.

Role of Urban Local Bodies

Urban Local Bodies will do urban database creation including sector-wise data collection and data analysis report. There is a 25-spectrum format provided in the manual for Design & Standards prepared and circulated by the TCPO in August 2015. ULBs will also be responsible for the spatial attribute data collection and vetting of maps, in association with State Mission Directorates. Once prepared, ULBs will have the mandate to put these GIS based maps to maximum use for planning, monitoring and other requirements.

Timeline

The total time-period for base map generation including data acquisition, geo-referencing, GPS Survey, data processing, ground truthing, generation of thematic layers, etc. as per Design & Standards for 500 cities would be 24 to 36 months. Time period for urban data collection, data analysis and master plan formulation up to draft proposal stage to be 24 months.

Budget Estimate

The Ministry of Urban Development has worked out unit cost norms and estimated expenditure for supporting this activity for 500 AMRUT cities. These will be subject to approval by Apex Committee. As per the estimates, the total cost for five years to support this reform activity is estimated to be as follows:

Total Cost: Rs. 515.00crores

Estimate	Cost (Rs Cr)*
Geodatabase Creation	115.9
Plan formulation	388.25
Capacity Building	10.85

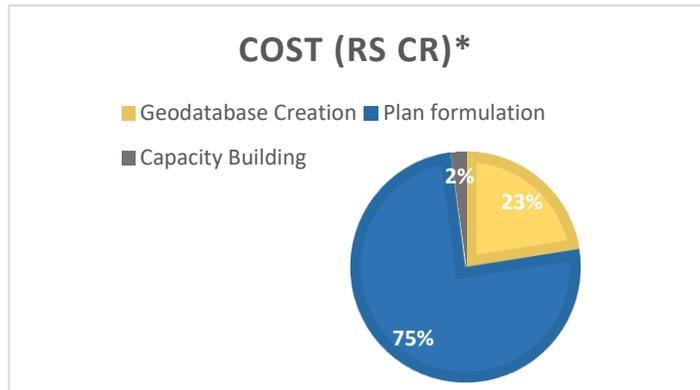


Figure 1 Total budget estimate

This will be met out of AMRUT funds under relevant heads including “Capacity Building and Reforms Support” resources. Funding will be provided by Government of India based on existing norms and unit costs set by the Apex Committee following AMRUT guidelines. No separate budget head or scheme is proposed for this.

The year wise budget allocation is estimated as under:

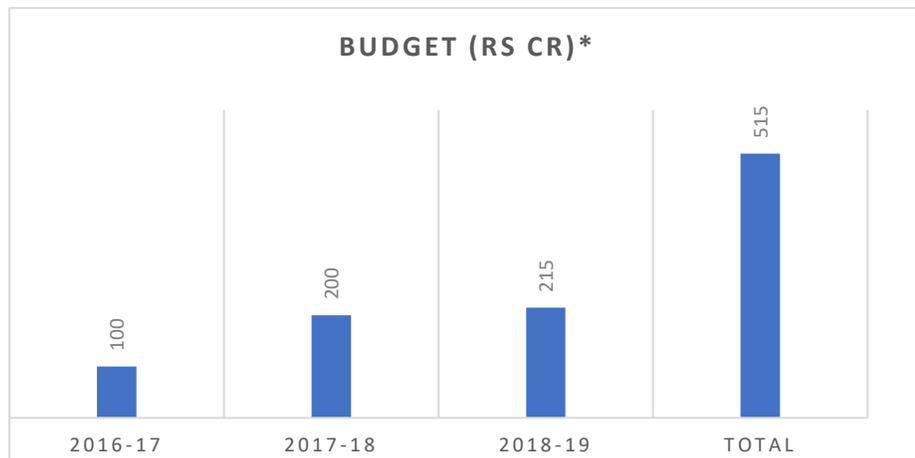


Figure 2 Year wise budget allocation

Structure and Fund Management

As per AMRUT Mission Statement and Guidelines, funds under AMRUT will be allocated by Ministry of Urban Development to States through the Apex Committee following the mission guidelines. There are three main steps for achieving this reform:

1. Geospatial Database Creation

2. Master Plan Formulation Component

3. Capacity Building Component

- i. **Funding for Geospatial Database Creation:** The schedule of release of funds will be as per memorandum of understanding between states, MoUD and NRSC.
- ii. **Funding for Master Plan Formulation Component:** The State Mission Directorate will manage the funds for GIS-based Master Plan Formulation for the plan formulation component.
- iii. **Funding for Capacity Building Component:** The State Mission Directorate will manage the funds for GIS-based Master Plan Formulation for the capacity building component. Convergence with existing schemes for capacity building will be ensured.
- iv. **Fund Flow:** The Scheme envisages a pattern of release of funds wherein-
 - 20% of the project cost will be released on approval of the SAAP, as an advance for data acquisition and collection of socio-economic data.
 - 40% of the project cost for base map & thematic map creation, vetting, and data analysis report.
 - Next 20% on submission of draft master plan and
 - Final 20% installment on approval of final master plan
 - Funds at every stage will be released subject to furnishing of the utilization certificate and physical progress of deliverables duly reported by competent authority.
 - The State may specify the exact pattern of release of funds as per their requirements.
- v. **Admissible Components:** Satellite data acquisition, data generation through primary, secondary and DGPS surveys, data analysis, value addition, vetting, capacity building and master plan formulation.
- vi. **Inadmissible Components:** Hardware & software, site development, wages & staff component, furniture and fixtures. Further the funding under the Scheme shall not include any recurring costs.

Review and Monitoring Mechanism: Although, all the Reform activities under AMRUT are proposed to be reviewed on a regular basis, this particular reform will be monitored as follows:

- i. **At State Level:**
 - State Level Technical Committee (SLTC) will oversee the progress of the technical implementation of the Reform.
 - State level High Powered Steering Committee (SHPS) will look into overall coordination and implementation of the Reform.
- ii. **At Centre Level:**
 - Periodic and detailed monitoring and review of the reform state-wise will be carried out by Space Technology Application Cell created at TCPO by MoUD (mohua the above said Cell will examine and submit its recommendations to a Monitoring and Review Committee. The composition of Monitoring and Review Committee is as under:

- Chief Planner, TCPO Chairman
- Group Head, Urban Studies and Geo-informatics, NRSC Member
- Professor of Planning, School of Planning & Architecture, Delhi Member
- Town & Country Planner Member
- Town & Country Planner Member Convener
- The Monitoring and Review Committee will report to the Technical Advisory Committee under the Chairmanship of JS(UD) constituted vide order no. K-14011/2/2012-UCD (part) dated 17.03.2015, which will further report to Apex Committee of AMRUT.
- The Apex Committee will monitor/ review overall progress and achievements and address any inter-agency issues.

Sub-Scheme on Formulation of GIS based Master Plans of Towns having population 50,000 - 99,999 under AMRUT 2.0

Introduction

Objective: To develop standardized base maps, land use maps, master plans, and urban geo-portal using Geographical Information System (GIS) for towns having population 50,000 - 99,999.

Rationale

The master plans of cities will help in decision-making and efficient land use leading to holistic urban management. It is also expected to contribute to achieving AMRUT 2.0 objectives through better project planning in the water sector.

Scope and Coverage

AMRUT 2.0 guidelines mandate this reform, which envisages covering all Class-II Towns with population of 50,000 - 99,999. However, in case of hilly and north-eastern States and UTs, alongside Class II towns, the next class of statutory towns may also be taken up. The number of cities/ towns proposed to be covered in the Sub-Scheme is 675. The State Town & Country Planning Departments/ State Mission Directorates of AMRUT shall prioritize the cities to be taken up in the sub-Scheme through State Action Plan (SAP).

Major Deliverables:

- i. Creation of Geo-database
- ii. Formulation of GIS-based Master Plan
- iii. Capacity Building
- iv. Development of centralized National urban geo-portal
- v. Development of integrated mobile application

Process of formulation of GIS based Master Plans:

1. Demarcation of mapping area
2. Satellite data acquisition
3. GPS Survey
4. Geo-referencing
5. Topology Building
6. Ground Training
7. Value Addition from line departments
8. Quality check and vetting
9. GIS base map
10. Primary and Secondary surveys
11. Spatial attribute data collection
12. Thematic map generation
13. Identification of issues and potentials
14. Projected Requirements

15. Policy Formulation
16. Draft Proposals
17. Draft Master Plan

Roles and Responsibilities

Role of Central Government

The MoHUA/ TCPO will monitor and coordinate the implementation of the Sub-Scheme besides preparation of State Action Plan template, model Request for Proposal (RFP) documents for procurement for consultancy services for creation of geo-database and master plan formulation components, course curriculum for capacity building etc. for States/Cities. MoHUA/TCPO will coordinate with concerned agencies.

Role of State Government

The State Town & Country Planning Departments will be the nodal agency implementing the Reform at the State level in association with AMRUT State Mission Directorate.

Role of Urban Local Bodies

Urban Local Bodies will assist State Nodal Agencies in collection of urban databases including socio-economic data collection and analysis report for master plan formulation. ULBs will also assist for the spatial attribute data collection and vetting of maps. Once prepared, the States/ ULBs will have the mandate to put these GIS based maps to maximum use for planning, monitoring and other requirements.

Timelines

- i. The AMRUT 2.0 Mission desires Reforms to be implemented in the first four years of the Scheme.
- ii. In this regard, total time period for base map generation including data acquisition, georeferencing, GPS survey, data processing, vetting and attribute data collection, generation of final base maps, etc. as per the technology specified in above mentioned Design & Standards documents will be implemented within the first three years of AMRUT 2.0 Mission.
- iii. Time period for urban data collection, data analysis and master plan formulation will be implemented within the first four years of AMRUT 2.0 Mission.
- iv. Development of Centralized National Urban Geo-portal and Development of Integrated Mobile Application will be implemented within the first year of AMRUT 2.0 Mission.

Budget Estimate

MoHUA has worked out unit cost norms and estimated expenditure for supporting this activity for 675 cities/towns. These will be subject to approval by Apex Committee. As per the estimates, the total cost to support this reform activity is estimated to be Rs. 631.13 crores i.e.

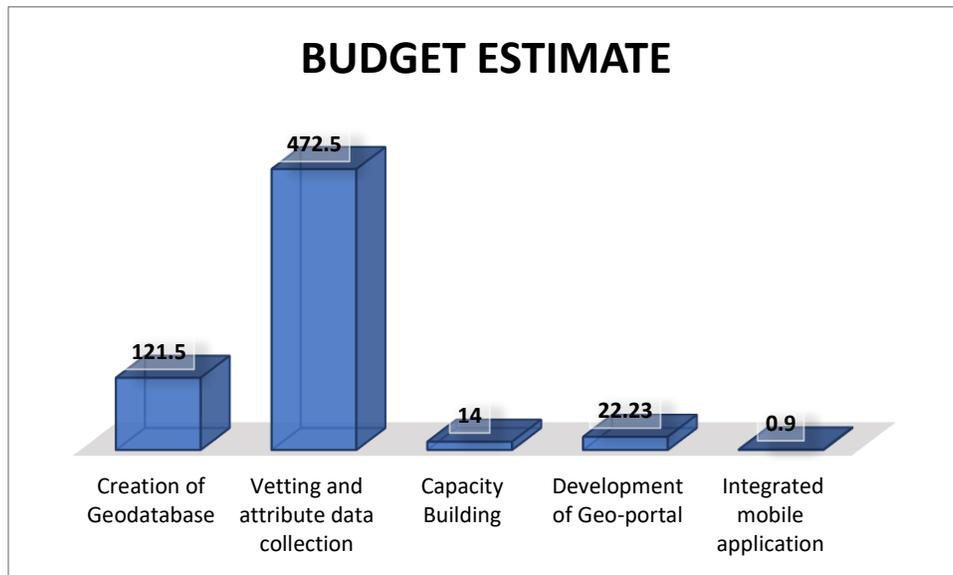


Figure 3 Budget estimate

This will be met out of AMRUT 2.0 funds under relevant heads. No separate budget head or scheme is proposed for this. The year wise budget allocation is estimated as under:

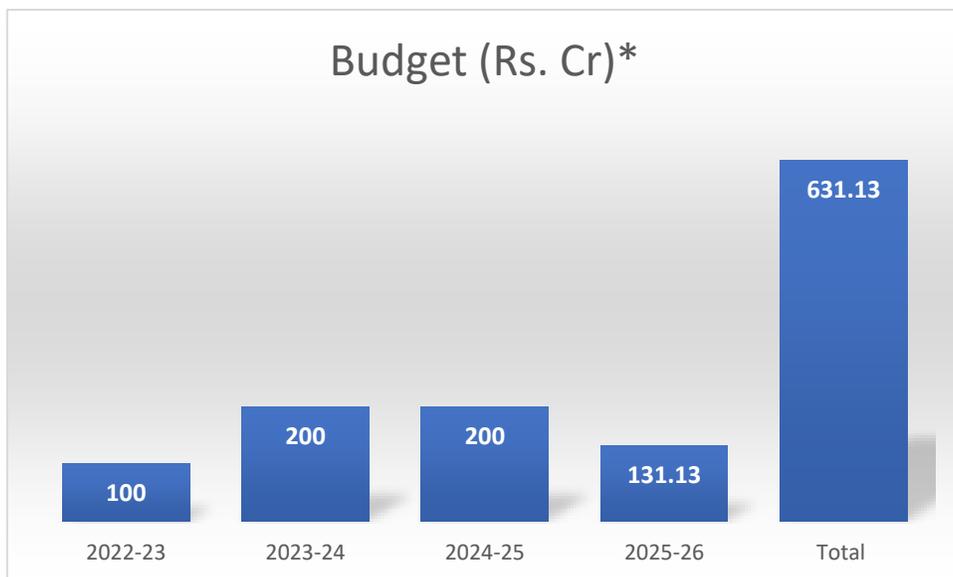


Figure 4 Year wise budget allocation

Structure of Fund Management

1. Funding for Geo-database creation
2. Funding for formulation of GIS-based Master Plan
3. Funding for capacity building
4. Funding for Development of Centralized National Urban Geo-portal
5. Funding for Development of Integrated Mobile Application
6. Fund Flow
 - i. State/ UT Governments
 - ii. National Mapping Agencies/ NIC/ IIRS

Review and Monitoring Mechanism

Although, all the Reform activities under AMRUT 2.0 are proposed to be reviewed on a regular basis, this reform will be monitored as follows:

At Central Level:

- i. Periodic and detailed monitoring and review of the reform state-wise will be carried out by TCPO/MoHUA.
- ii. TCPO/MoHUA will periodically visit the National Mapping Agencies, State/UT Governments, NIC and IIRS, to oversee the progress of the AMRUT 2.0 Sub-Scheme and will report to the National Monitoring and Review Committee (NMRC).

At State Level:

The Consultant's work will be monitored and reviewed by a Consultancy Evaluation and Review Committee (CERC) while in-housework will be administered by a Monitoring and Review Committee (MRC).

The CERC/ MRC will report to the State Level Technical Committee (SLTC).

Comparison of both the schemes

Formulation of GIS Based Master Plans for AMRUT Cities	Formulation of GIS Based Master Plans for towns having population of 50,000-99,999
<ol style="list-style-type: none"> 1. Objective: To develop common digital geo-referenced base maps and land use maps using GIS and Master Plan Formulation for 500 cities selected as AMRUT cities. 2. Scope and Coverage: Cities which do not have Master Plans and whose Master Plans are about to expire by 2021. 3. Major Deliverables: <ol style="list-style-type: none"> i. Base Map and Thematic maps: 1:4000 scale. ii. Urban Database Creation: Sector-wise data collection and data analysis. iii. Formulation of Master Plan: as per State Town and Country Planning Act. iv. Capacity Building 4. For total 500 cities. 5. Timeline: Total time for base map generation including data acquisition, geo-referencing, GPS Survey, data processing, ground truthing, generation of thematic layers, etc. as per Design & Standards for 500 cities would be 24 to 36 months. Time period for urban data collection, data analysis and master plan formulation up to draft proposal stage to be 24 months. 6. Budget: Total Cost: Rs. 515.00crores. 	<ol style="list-style-type: none"> 1. Objective: To develop standardized base maps, land use maps, master plans, and urban geo-portal using Geographical Information System (GIS) for towns having population 50,000 - 99,999. 2. Scope and Coverage: Covering all Class-II Towns with population of 50,000 - 99,999. In case of hilly and north-eastern States and UTs, alongside Class II towns, the next class of statutory towns may also be taken up. 3. Major Deliverables <ol style="list-style-type: none"> i. Creation of Geo-database ii. Formulation of GIS-based Master Plan iii. Capacity Building iv. Development of centralized National urban geo-portal v. Development of integrated mobile application 4. For a total of 675 cities. 5. Timelines: Total time-period for base map generation including data acquisition, georeferencing, GPS survey, data processing, vetting and attribute data collection, generation of final base maps, etc. Time period for urban data collection, data analysis and master plan formulation will be implemented within the first four years of AMRUT 2.0 Mission. Development of Centralized National Urban Geo-portal and Development of Integrated Mobile Application will be implemented within the first year of AMRUT 2.0 Mission. 6. Budget: Total cost to support this reform activity is estimated to be Rs. 631.13 crores

Overview

Urban development including urban planning comes under the purview of State Government. The Ministry of Housing and Urban Affairs (MoHUA) supports States/ Union Territories by issuing advisories, design standards and schematic interventions for optimal use of technology for integrated urban planning.

Under Atal Mission for Rejuvenation and Urban Transformation (AMRUT), a sub-scheme on 'Formulation of GIS based Master Plan for AMRUT Cities' has been approved to facilitate States and cities to take up Master Planning and is being implemented in 456 towns of 35 States/ UTs.

Further, Ministry of housing and Urban Affairs has launched AMRUT 2.0 on October 1, 2021, under which a sub-scheme on 'Formulation of GIS based Master Plans for Class-II towns with the population 50,000 - 99,999' has been proposed with the objectives to develop standardized base maps, land use maps, master plans, and urban geo-portal using Geographical Information System (GIS).

Master Plan/Development Plan is the major tool for urban land management, providing detailed land use allocation for the sustainable development of city/town. Most master/development plans are made for 20-year periods, in phases of five years for periodic review and revision. The most crucial information for formulation of Master Plan is an accurate and updated Base Map of the planning area, showing roads and building layouts, spatial extent of development and information on the use of each parcel of land etc. Preparation of base maps from Very High-Resolution Satellite (VHRS) Images and Geographic Information System (GIS) technology can be time and cost-effective solution. Although State Town and Country Planning Departments (STPDs) had initiated the utilisation of NUIS database at 1:10000 scale for Master Plan formulation on Bhuvan, it was felt that 1:10000 scale database content and accuracy was inadequate for this purpose.

Formulation of GIS-based Master/Development Plans for 500 AMRUT Cities is one of the important reforms under AMRUT, which has been approved as a 100% centrally funded subscheme with budget outlay of Rs. 515.00 crores.

Apart from all this, formulation of schemes for any project is the major step while studying and implementing a reform or a project. The project we are working upon is one of the reforms in AMRUT mission. The first scheme/guideline and the stepwise methodology was prepared in November 2015 with an agenda of "Formulation of GIS-Based Master Plans for AMRUT Cities". It was having a methodology covering the following heads:

- i. Objectives
- ii. Rationale
- iii. Scope and coverage
- iv. Major deliverables
- v. Process of formulation of GIS-based Master Plan
- vi. Roles and Responsibilities
- vii. Timelines
- viii. Budget Estimate
- ix. Structure of fund management
- x. Review and monitoring

And describing them by covering every detail of work and the whole process. Urban planners and designers have studied the scheme thoroughly and tried to work accordingly. But the speed of work was not that much i.e., Till 2017 only some of the work was done which is mentioned below:

- i. Prioritization of cities
- ii. Demarcation of area of map
- iii. Procurement of satellite images/Data acquisition
- iv. Geo-referencing
- v. Base map preparation from satellite data
- vi. Topology Building
- vii. Ground Truthing and incorporation value addition from line departments
- viii. Quality check
- ix. Draft Map Generation
- x. Vetting of maps by State Governments
- xi. Final Map Delivery (Hard/Soft GIS Copy)
- xii. Finalization of RFPs for plan formulation
- xiii. Tendering & outsourcing for plan formulation
- xiv. Approval by SHPSC
- xv. Contract signing
- xvi. Data Collection and surveys by consultant

And the rest of the activities were carried forward to next year.

After some time, a new sub-scheme was formulated with an agenda of “Formulation of GIS based Master Plans of Class-II Towns with population of 50,000 - 99,999” in August 2022 with the same methodology but different approach and some changes. For example:

- i. It specified Master Plan formulation for towns having population of 50000 to 99999 under AMRUT 2.0
- ii. The sub-scheme is expected to contribute to achieving AMRUT 2.0 objectives through better project planning in the water sector as it is the most crucial issue in the present scenario.
- iii. Two extra points were added to “Major Deliverables” as –
 - a. Development of centralized National Urban geo-portal.
 - b. Development of integrated mobile application
- iv. The first scheme has taken 500 cities while the sub-scheme has taken 675 cities.
- v. There is also a change in the timelines of the project.
- vi. As the no. of cities has increased, the total budget of the project has also increased i.e., from 515 crores to 631.13 crore.

Recommendations

1. Lack of Comprehensive Planning Approach

Comprehensive planning is an ordered process that determines community goals and aspirations in terms of community development.

Sub-scheme 1

The data collection, surveys, even the capacity building will be done for 500 cities. Even the priority will be given to cities which do not have master plan or whose master plan is about to expire in 2021.

It is mentioned that the use of technology will enhance the planning process but not how about the community development.

Sub-scheme 2

Sub-scheme 2 has a different criterion like the development of nation-wide geo-portal for the ease of collecting satellite data and development of an integrated mobile application for the purpose of ground-truthing. Nothing is done in order to focus on the holistic development of the entire community.

2. Stakeholder's Participation

The approach of planning should be shifted from top-down to bottom-up approach to make the planning process more inclusive and sustainable. Greater public acceptability is desirable, to ensure that plans are relevant. People can participate in the development process in the following realms:

Pre-plan participation in decision making in vision development, for identification of development priorities.

Post-plan participation before finalization and implementation of development programs and priorities.

Participation during implementation and evaluation of development programs and projects.

Participation and sharing the benefits of development, managing the assets etc.

e-Platform and crowd sourcing are coming up as new modes of obtaining feedback speedily.

Here none of the sub-schemes have emphasized participation of people for whom they are planning it.

3. Resource Mobilization

Resource Mobilization is the identification, organization, and utilization of the available material resources within the country (including financial resources) to further its objectives of development missions and plans. Although it's a centrally funded scheme (100%), still there should be a proper use of resources which are available.