



# TUMKUR DISTRICT



## QUADRIMESTRAL TECHNICAL REPORT

**August to November.**

### SUBMITTED BY

**Chathura H Gowda**

**District NRDMS Centre**

**Zilla Panchayath Tumkur.**

### ADMINISTRATIVE YEAR

**2025-26.**

### DATE OF SUBMISSION

**10/09/2025.**

**Geospatial Database for Sustainable  
Development.**

# **CONTENTS**

# **PAGE NO.**

- **BASIC INFORMATION OF THE DISTRICT** 1
- **NRDMS BACKGROUND OF THE DISTRICT** 2-7
- **GEOGRAPHICAL FEATURES** 8-14
- **NRDMS SPATIAL AND NON-SPATIAL DATA** 15-16
- **AVAILABLE IN DISTRICT NRDMS CENTRE** 17
- **NRDMS CENTRE ACTIVITIES (AUGUST  
- NOVEMBER 2025)** 17
- **TRAINING PROGRAMMES ATTENDED** 17
- **TRAINING IMPARTED TO LINE  
DEPARTMENTS** 17
- **SCIENCE OUTREACH ACTIVITIES** 17
- **CONCLUSION** 17
- **ANNEXURES.** 18-26.

# BASIC INFORMATION OF THE DISTRICT.



**District Name: Tumkur.**

**Division: Bengaluru.**

**Establishment Year:1997-1998.**

**Headquarter: Zilla Panchayath, Ward No-18  
Tumkur.**

**Chief Planning Officer: Mr Sannamasiyappa (K.A.S).**

**Chief Executive Officer: Mr Prabhu G (I.A.S).**

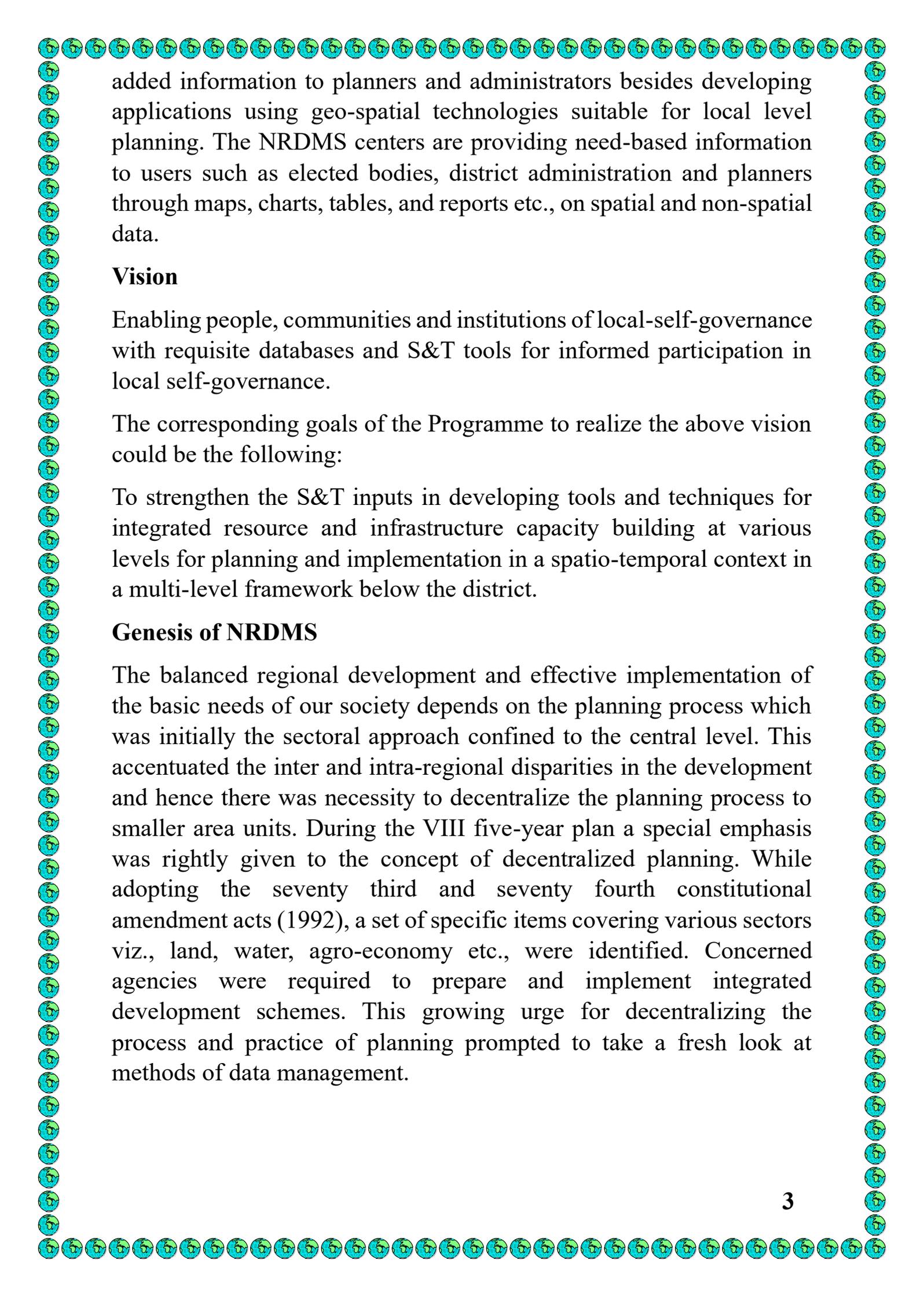
# NRDMS BACKGROUND OF THE DISTRICT.

Natural Resources Data Management System (NRDMS) program started in 1992. Since then established in Tumkur District 1997-98 with active support and funding from Department of Science & Technology (DST) Government of India and Government of Karnataka. NRDMS program is a multi-disciplinary and multi-institutional program of the Council aimed at developing methodologies for building and promoting the use of spatial data management and analysis technologies in local area planning. The initial approach of planning based on macro level assessment of resources did not yield the desired results. The introduction of the concept of spatial planning to micro-levels by the Planning commission paved the way for evolution of NRDMS program. The vision of the NRDMS program during its inception was to provide S&T inputs for operationalising the concept of decentralized planning of the country by developing computer compatible spatial databases on natural resources, socio and agro-economic parameters to further the concept of area specific decentralized planning.

Resource knowledge and resource inventory is crucial to spatial planning. At the core of this concept lies an integrated approach to planning in contrast to

the sectoral method. This requires a detailed knowledge of the interrelations and interdependencies between various sectors to resolve often-conflicting demands. This leads to a requirement for appropriate data management and analyzing tools and techniques and a large matrix of sectoral data, in digital format, on natural resources, demography, socio-economy etc. and integrating them to generate appropriate information/applications required for plan preparation.

The district NRDMS centers since inception have created an exhaustive database of natural resources, socio-economic parameters, infrastructure etc. The NRDMS centres are providing analyzed/value



added information to planners and administrators besides developing applications using geo-spatial technologies suitable for local level planning. The NRDMS centers are providing need-based information to users such as elected bodies, district administration and planners through maps, charts, tables, and reports etc., on spatial and non-spatial data.

### **Vision**

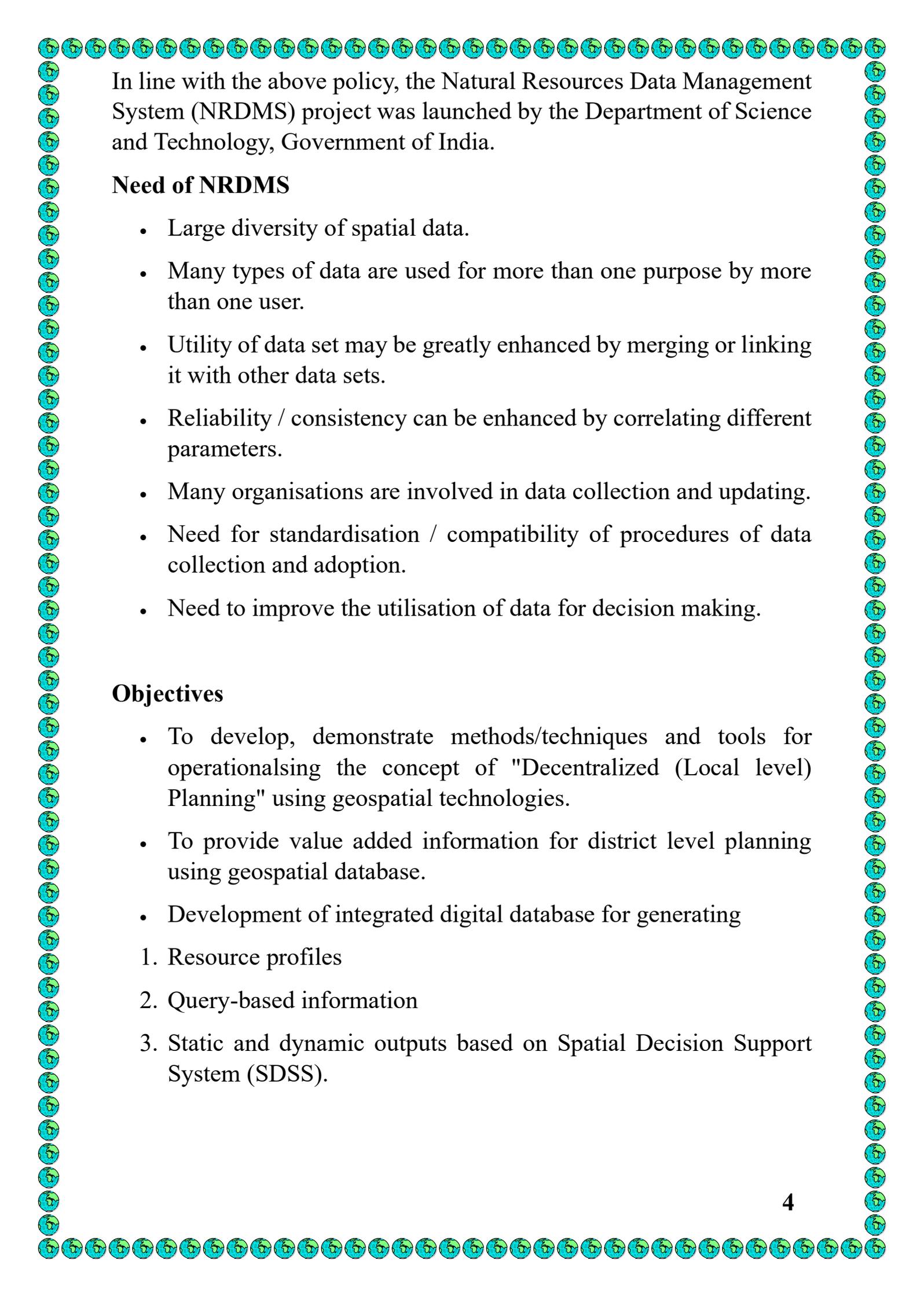
Enabling people, communities and institutions of local-self-governance with requisite databases and S&T tools for informed participation in local self-governance.

The corresponding goals of the Programme to realize the above vision could be the following:

To strengthen the S&T inputs in developing tools and techniques for integrated resource and infrastructure capacity building at various levels for planning and implementation in a spatio-temporal context in a multi-level framework below the district.

### **Genesis of NRDMS**

The balanced regional development and effective implementation of the basic needs of our society depends on the planning process which was initially the sectoral approach confined to the central level. This accentuated the inter and intra-regional disparities in the development and hence there was necessity to decentralize the planning process to smaller area units. During the VIII five-year plan a special emphasis was rightly given to the concept of decentralized planning. While adopting the seventy third and seventy fourth constitutional amendment acts (1992), a set of specific items covering various sectors viz., land, water, agro-economy etc., were identified. Concerned agencies were required to prepare and implement integrated development schemes. This growing urge for decentralizing the process and practice of planning prompted to take a fresh look at methods of data management.



In line with the above policy, the Natural Resources Data Management System (NRDMS) project was launched by the Department of Science and Technology, Government of India.

### **Need of NRDMS**

- Large diversity of spatial data.
- Many types of data are used for more than one purpose by more than one user.
- Utility of data set may be greatly enhanced by merging or linking it with other data sets.
- Reliability / consistency can be enhanced by correlating different parameters.
- Many organisations are involved in data collection and updating.
- Need for standardisation / compatibility of procedures of data collection and adoption.
- Need to improve the utilisation of data for decision making.

### **Objectives**

- To develop, demonstrate methods/techniques and tools for operationalising the concept of "Decentralized (Local level) Planning" using geospatial technologies.
- To provide value added information for district level planning using geospatial database.
- Development of integrated digital database for generating
  1. Resource profiles
  2. Query-based information
  3. Static and dynamic outputs based on Spatial Decision Support System (SDSS).

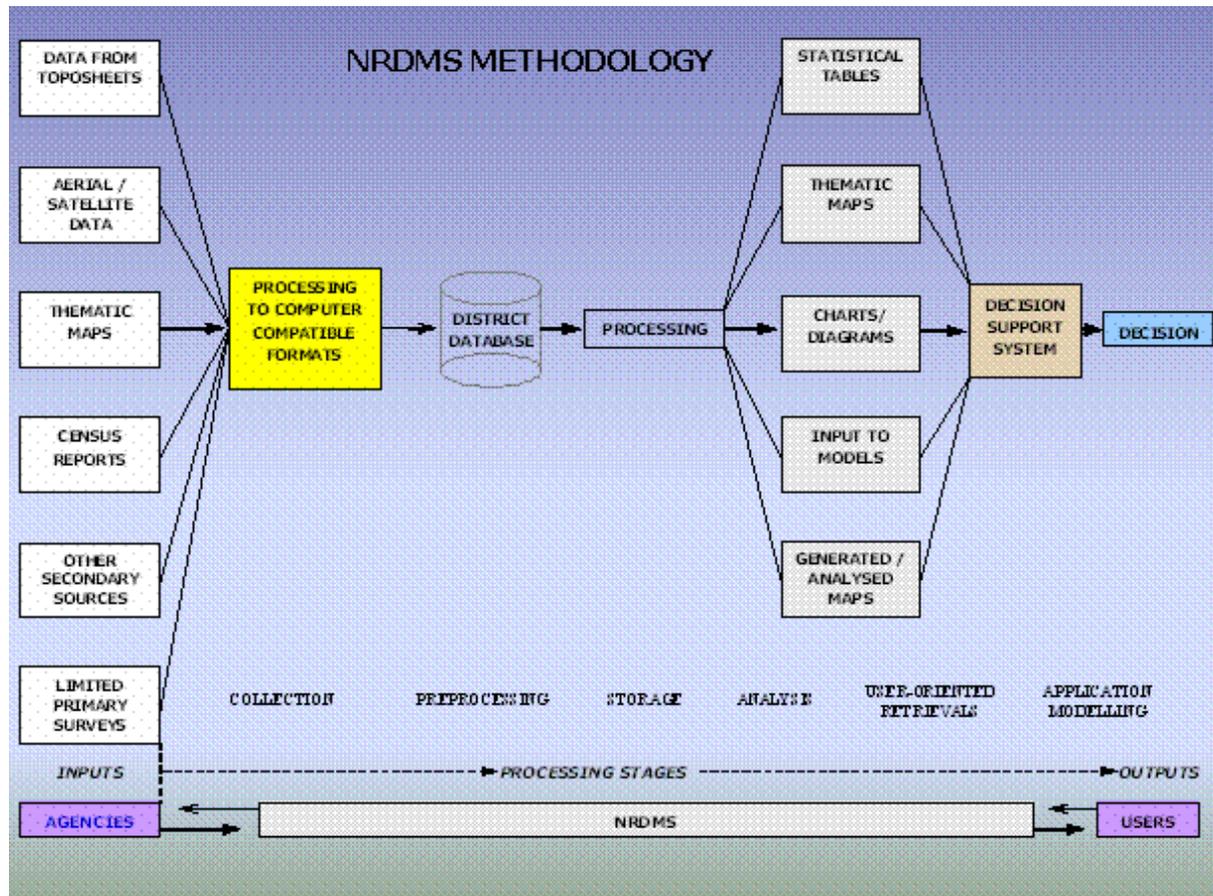
- Interaction through workshops with line department officials and stakeholders at multi-level to assess their information needs in implementing the schemes and capacity building.
- To develop local specific applications using GIS tools.
- To create awareness among end-users about the utility of GIS technologies by conducting regular training programs and workshops.
- Documentation and dissemination.
- To establish district NRDMS centers in all the districts to develop database and applications that are relevant to planning and administration.

### **NRDMS Methodology**

NRDMS programme aims to analyze the evolution of methodologies and techniques for formulating development strategies. In a scenario of large diversity of data sets, data users and data generating agencies, the programme aims at developing and demonstrating the use of spatial decision support tools for integrated planning and management of resources at the local level. The NRDMS programme uses both maps and textual data collected from various data generating agencies and remote sensing sources. Maps are digitized and stored on a computer as a series of thematic data layers. Depending on the real unit of planning, maps on 1:250,000, 1:50,000 and cadastral scales are utilized. Data on natural resources, demography, agro & socio-economy and infrastructural facilities for a district form the core database. Those pertaining to specific problems of an area constitute the sectoral database. Textual data obtained from secondary sources are normally stored with village as a unit. Data gaps are filled in by limited primary surveys. Various decision support systems\ modules built into the system help process the data and generate alternative scenarios for making optimal planning decisions. Outputs in the form of thematic

maps, tables and reports based on spatial analysis are obtained from the database as per the user requirements.

The diagram below indicates broadly the methodology adopted in the NRDMS project.



## Geographical Information System [GIS]

A geographic information system (GIS), captures, stores, analyzes, manages, and presents data that is linked to location. Technically, GIS is geographic information systems which includes mapping software and its application with remote sensing, land surveying, aerial photography, geo-positioning system, mathematics, photogrammetry, geography, and tools that can be implemented with GIS software. GIS applications are tools that allow users to create interactive queries (user created searches), analyze spatial information, edit data, maps, and present the results of all these operations.



GIS have taken advantage of rapid developments in Information technology over the past several decades to address the spatial challenges of storing and analyzing spatial data. GIS belongs to the class of computer systems that require the building of large databases before they actually become useful. Actually, the use of a GIS requires that large spatial database be created, appropriate hardware / software be procured and installed, applications be developed, installed, integrated and tested before users can use the GIS and realize the benefit.

The role of a GIS in a government setup is more than simply automating a few obvious tasks for the sake of efficiency. A local government or zilla panchayath should view the GIS project as an opportunity to introduce fundamental change into the way its business is conducted. Just as MIS / EIS in corporate business world, the adoption of GIS effectively reorganises the data and information that the government collects, maintains and uses to conduct its affairs. This will lead to major changes in the institution both effectiveness and efficiency of operations. NRDMS uses corporate database concept to integrate GIS data for all units of Zilla Panchayath participating in a co-operative GIS program. Establishing the corporate database is much more a question of policy, management co-operation and co-ordination.

An effective corporate database does require co-operation on the part of all users, both for collection and entry of data in the database and in developing applications in a shared data context. This may result in some individual applications or uses being less efficient, however the overall benefits to the organization can easily outweigh these inefficiencies. Greater emphasis must be placed on maintaining a high quality of data and services to users.

# GEOGRAPHICAL FEATURES.

## Location & Boundaries

**Location:** 13.3710° N, 76.6413° E

**Kneighboring districts:** Chitradurga,  
Chikkaballapura, Bangalore Rural, Ramanagara,  
Mandya, Hassan & Chikkamagaluru.

**Kneighboring states:** Andhra Pradesh.

**Number of Taluks:**10

**Number of Hoblis:** 50

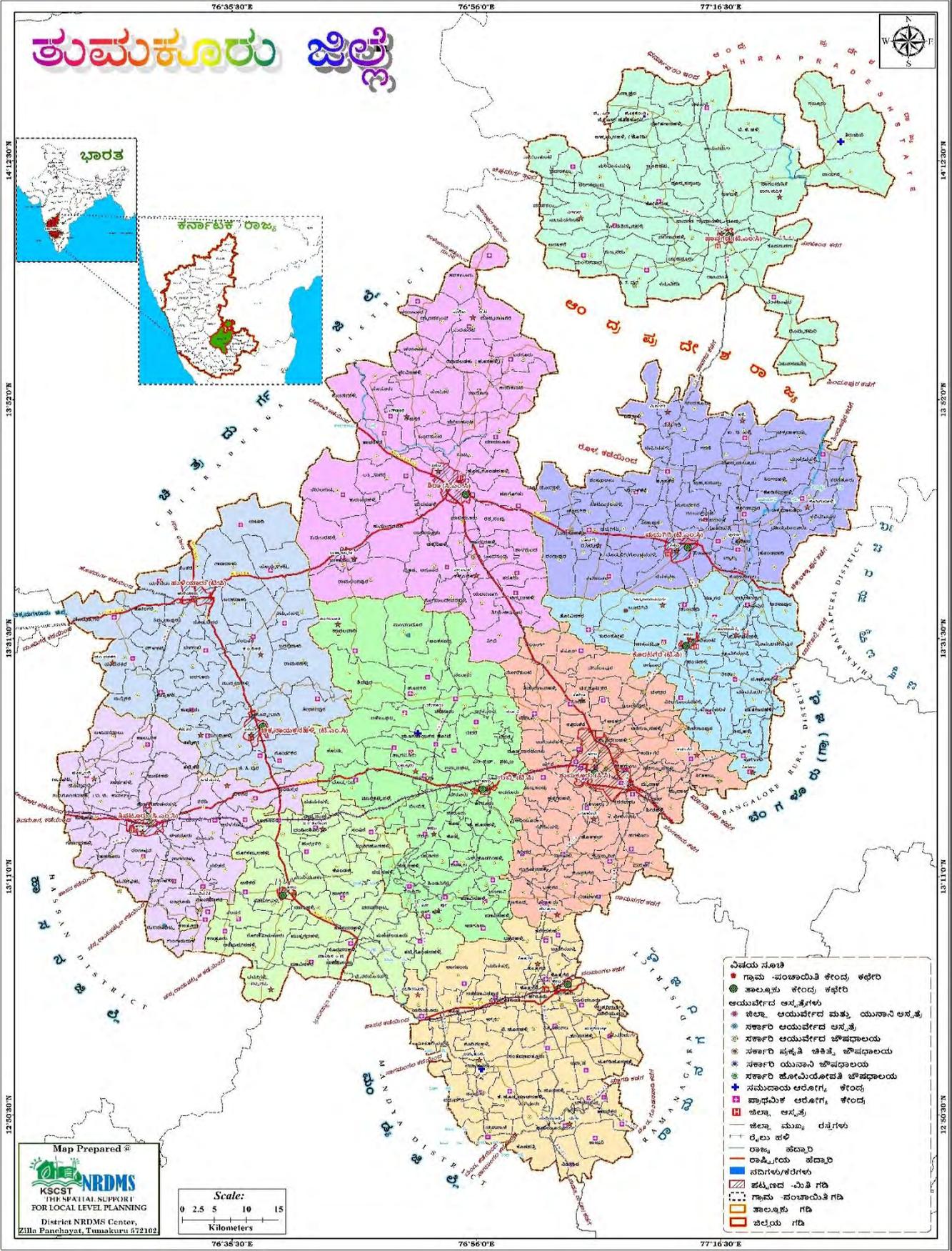
**Number of Villages:**2715

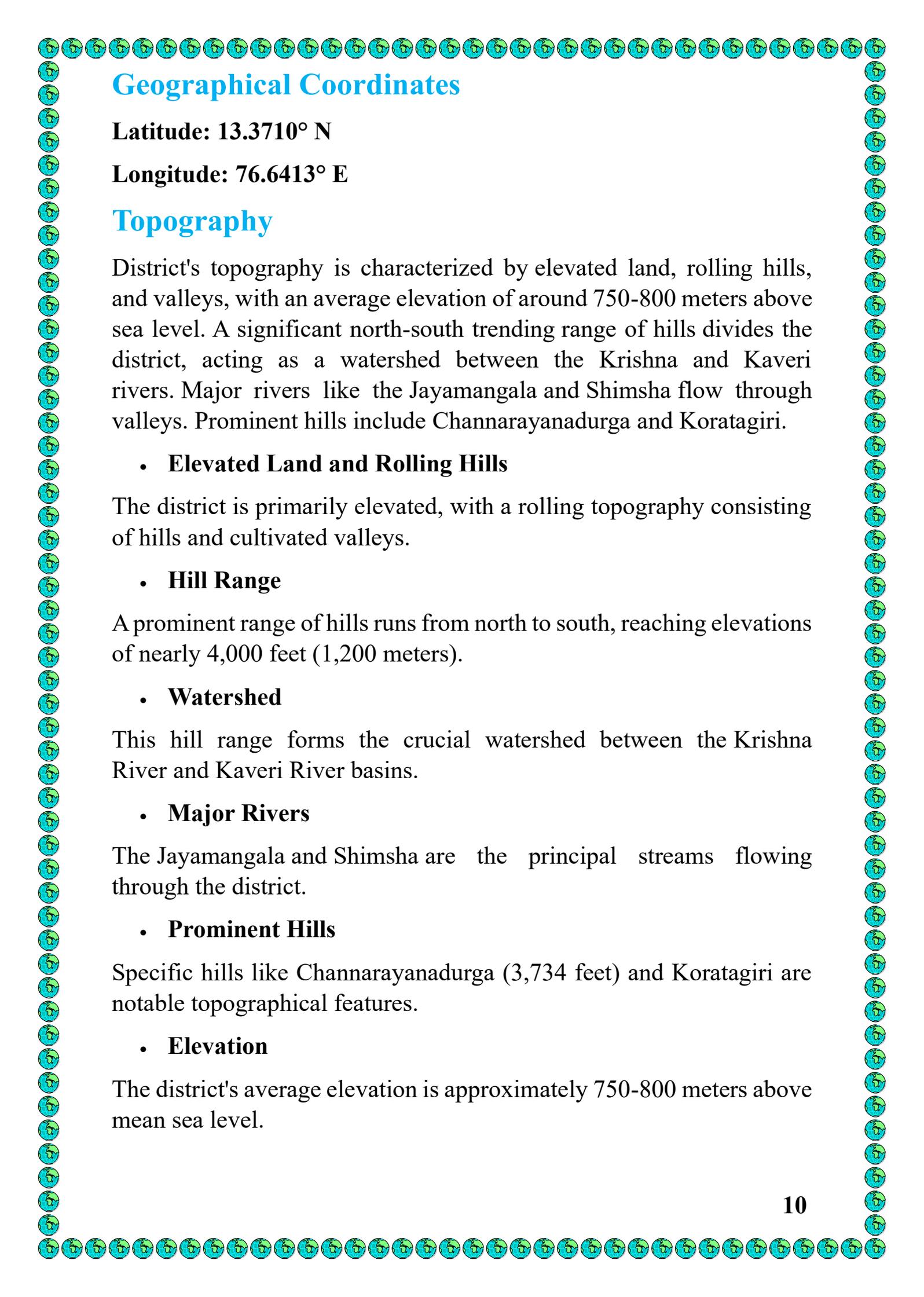
**Number of Urban Local Bodies (ULBs):**11

- Tumakuru (CC) - City Corporation
- Tiptur (CMC) - City Municipal Council
- Sira (CMC) - City Municipal Council
- Chikkanayakanahalli (TMC) - Town Municipal Council
- Madhugiri (TMC) - Town Municipal Council
- Pavagada (TMC) - Town Municipal Council
- Kunigal (TMC) - Town Municipal Council
- Koratagere (TP) - Town Panchayat
- Gubbi (TP) - Town Panchayat
- Turuvekere (TP) - Town Panchayat
- Hulyar (TP) - Town Panchayat.

# District Map

## ತುಮಕೂರು ಜಿಲ್ಲೆ





## Geographical Coordinates

**Latitude:** 13.3710° N

**Longitude:** 76.6413° E

## Topography

District's topography is characterized by elevated land, rolling hills, and valleys, with an average elevation of around 750-800 meters above sea level. A significant north-south trending range of hills divides the district, acting as a watershed between the Krishna and Kaveri rivers. Major rivers like the Jayamangala and Shimsha flow through valleys. Prominent hills include Channarayanadurga and Koratagiri.

- **Elevated Land and Rolling Hills**

The district is primarily elevated, with a rolling topography consisting of hills and cultivated valleys.

- **Hill Range**

A prominent range of hills runs from north to south, reaching elevations of nearly 4,000 feet (1,200 meters).

- **Watershed**

This hill range forms the crucial watershed between the Krishna River and Kaveri River basins.

- **Major Rivers**

The Jayamangala and Shimsha are the principal streams flowing through the district.

- **Prominent Hills**

Specific hills like Channarayanadurga (3,734 feet) and Koratagiri are notable topographical features.

- **Elevation**

The district's average elevation is approximately 750-800 meters above mean sea level.

- **Slope**

Topography includes low-lying areas to moderately sloping hills, with slopes ranging from 0-1% to 5-10%

## **Climate**

**Average Rainfall:** 687.9mm

**Temperature Range:** Varies from 15.9°C to 37.3°C.

**Climatic Zones:** Agro-Climatic Zones

- **Central Dry Zone**

This is the primary agro-climatic zone for Tumkur.

- **Climate:** Semi-arid with moderate temperatures and rainfall.
- **Soil:** A mix of black, red, and laterite soils.

- **Eastern Dry Zone**

Some areas of the district may also be considered within this zone.

- **Climate:** Also, semi-arid, similar to the CDZ.

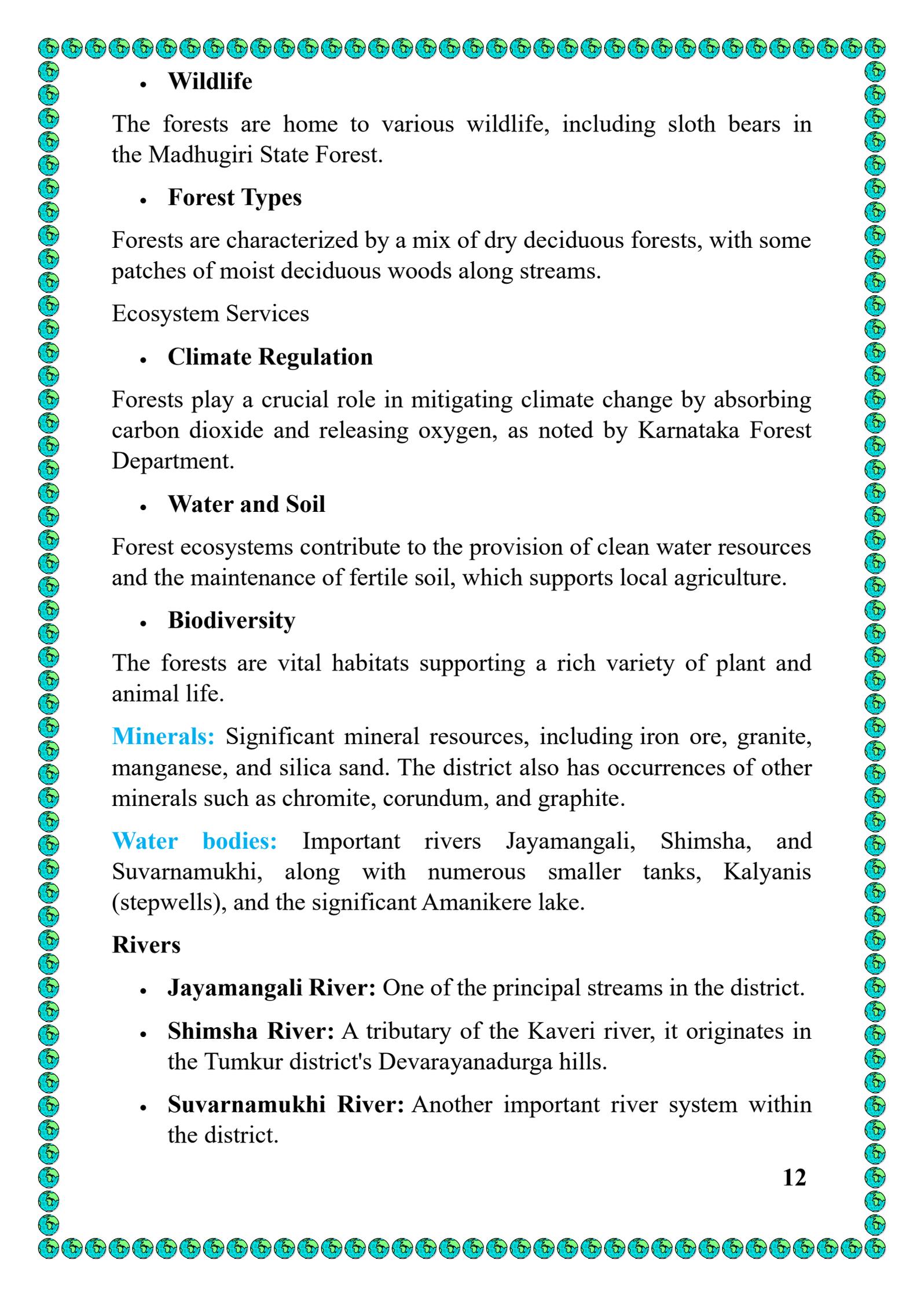
## **Natural Resources**

**Forests:** The primary natural resource from Tumkur's forests is medicinal plants, particularly found in the Devarayanadurga and Siddarabetta hill ranges. The forests themselves provide vital ecosystem services like providing fresh air and water resources, contributing to biodiversity, and supporting climate change mitigation. The district has dry and moist deciduous forest types, including wildlife habitats and protected areas such as the Jayamangali Blackbuck Conservation Reserve.

### **Specific Forest Resources**

- **Medicinal Plants:**

The hill ranges of Devarayanadurga and Siddarabetta are known for harboring diverse varieties of medicinal plants.



- **Wildlife**

The forests are home to various wildlife, including sloth bears in the Madhugiri State Forest.

- **Forest Types**

Forests are characterized by a mix of dry deciduous forests, with some patches of moist deciduous woods along streams.

Ecosystem Services

- **Climate Regulation**

Forests play a crucial role in mitigating climate change by absorbing carbon dioxide and releasing oxygen, as noted by Karnataka Forest Department.

- **Water and Soil**

Forest ecosystems contribute to the provision of clean water resources and the maintenance of fertile soil, which supports local agriculture.

- **Biodiversity**

The forests are vital habitats supporting a rich variety of plant and animal life.

**Minerals:** Significant mineral resources, including iron ore, granite, manganese, and silica sand. The district also has occurrences of other minerals such as chromite, corundum, and graphite.

**Water bodies:** Important rivers Jayamangali, Shimsha, and Suvarnamukhi, along with numerous smaller tanks, Kalyanis (stepwells), and the significant Amanikere lake.

### **Rivers**

- **Jayamangali River:** One of the principal streams in the district.
- **Shimsha River:** A tributary of the Kaveri river, it originates in the Tumkur district's Devarayanadurga hills.
- **Suvarnamukhi River:** Another important river system within the district.

## Lakes & Reservoirs

- **Amanikere Lake:** A well-known lake with a historical and cultural significance, serving as a water source and an eco-tourism spot.
- **Marconahalli Reservoir:** A medium irrigation project located in the Kunigal taluk.

## Other Water Bodies

- **Kalyanis (Stepwells)**

There are approximately 450 Kalyanis in Tumkur district, serving as traditional water harvesting structures.

- **Minor Irrigation Tanks**

The district is home to a vast number of minor irrigation tanks, with 1642 recorded tanks providing irrigation to a significant portion of the land.

- **Groundwater**

Groundwater resources, with aquifer systems in areas like Sira taluk.

**Soil:** Soils in the district include creaceous red loamy soils, red sandy loam soils, sandy clay loam, and loamy soils. These soils, which range from moderately acidic to slightly alkaline, are characterized by low to medium nitrogen, but varying phosphorus and potassium levels. Nutrients like iron, manganese, and copper are often deficient or excessive, requiring careful management for sustainable agriculture, especially given the widespread overexploitation of the region's soil resources.

## Soil types by formation

- Red loamy soils: Common throughout the district.
- Red sandy loam soils: Also found in the region.
- Sandy clay loam soils: Another type identified in Tumkur.
- Loamy soils: Present in various areas.
- Sandy soils: Also encountered in Tumkur.

## Soil Characteristics

- **Acidity:** Soils generally range from moderately acidic to slightly alkaline.
- **Organic Carbon:** Typically low, with some exceptions.
- **Nutrient Levels:** Available nitrogen and phosphorus are low to medium, while potassium varies.
- **Micronutrients:** Iron, manganese, zinc, and copper levels are also variable.

## Management & Fertility

- **Overexploitation**

Soil resources are being overexploited, necessitating sustainable management.

- **Nutrient Management**

Intensive soil nutrient management is needed.

- **Fertility**

Studies reveal a need for improved management, particularly in coconut-growing areas.

- **Soil Depth**

Soils range from deep to very deep, with many areas affected by moderate erosion.

## Major Rivers/Water Sources

District includes the major rivers Jayamangali, Shimsha, and Suvarnamukhi, along with numerous smaller tanks, Kalyanis (stepwells), and the significant Amanikere lake.



# NRDMS SPATIAL AND NON-SPATIAL DATA AVAILABLE IN DISTRICT NRDMS CENTRE.

## Spatial data

### Taluk Level Data

#### 1. Boundaries

- Gram Panchayath Boundary
- Hobli Boundary
- Taluk Panchayath Boundary
- Zilla Panchayath Boundary
- Village Boundary.

#### 2. Headquarters

- Gram Panchayath Headquarters
- Hobli Headquarters
- Taluk Panchayath Headquarters.

#### 3. Settlements

- Village Settlement's.

#### 4. Facilities

- Bank Facilities
- Communication Facilities
- Credit Societies Facilities
- Drinking Water Facilities
- Educational Facilities
- Medical Facilities
- Post And Telegraph Facilities
- Recreational And Cultural Facilities etc.

## **District Level Data**

### **5. Boundaries**

- Gram Panchayath Boundary
- Hobli Boundary
- Taluk Panchayath Boundary
- Zilla Panchayath Boundary
- Village Boundary.

### **6. Headquarters**

- Gram Panchayath Headquarters
- Hobli Headquarters.

### **7. Settlements**

- Line department building assets etc.

### **8. Facilities**

- Communication Facilities
- Credit Societies Facilities
- Drinking Water Facilities
- Educational Facilities
- Medical Facilities
- Post And Telegraph Facilities
- Recreational And Cultural Facilities, etc.

### **Non-spatial data**

- 2001 & 2011 Census Data
- Line department Statistical data
- Bhuvan data
- Ground Water data (CGWB & KGWA) etc.

# NRDMS CENTRE ACTIVITIES (AUGUST - NOVEMBER 2025).

## Activities and Data collection

- **Planning dept**-Action plan
- **Swaccha Bharat Mission (Rural)**-SBMG IHHL report
- **Statistics**-Avalokana Software Handling
- **Election**-Rationalization of Polling Stations
- **GIS-Project**-Creating a 1:1000 scale village settlements database.

## TRAINING PROGRAMMES ATTENDED.

- **Yuktdhara Geospatial Planning Portal Training** held in mysure on 10-09-2025.

## TRAINING IMPARTED TO LINE DEPARTMENTS.

**Not imparted.**

## SCIENCE OUTREACH ACTIVITIES.

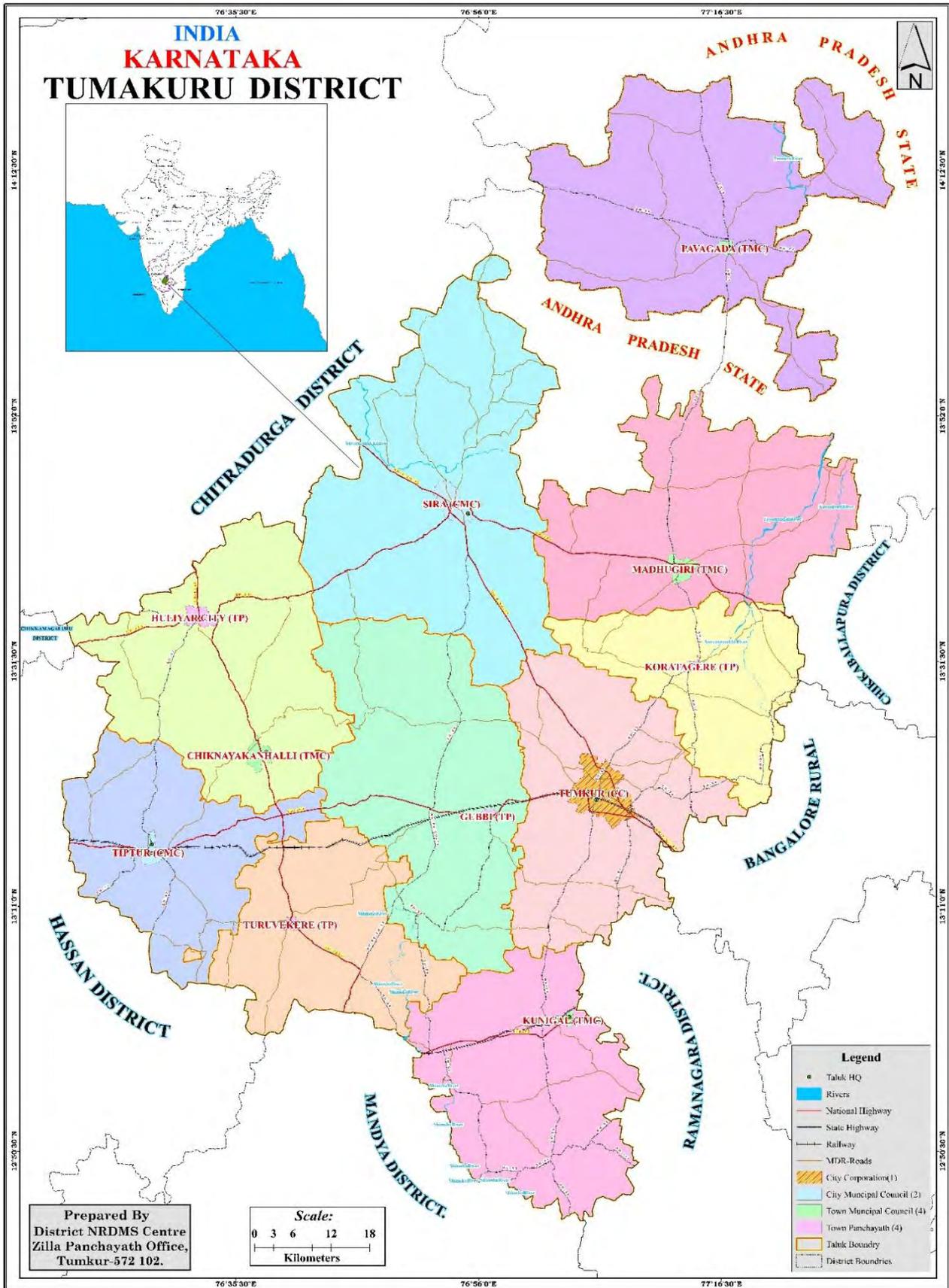
**Nil.**

## CONCLUSION.

- IHHL report collection is a vast activity, but took a longer period of time to collect the data by teams/personals finally SBMG Nodal officer quickly manipulate the circulars & instructions, finally get data by time to time during busy month schedule also.
- **Potential areas for improvement or focus:** - Health, Education and Agriculture.
- Today mapping is a large and growing sector of the economy as well as an important social, cultural, and political phenomenon. Mapping is also important for lifelong learning. Spatial thinking skills are used in many fields, careers, and pastimes.

# ANNEXURES-MAPS.

## Main Transportation Facilities.

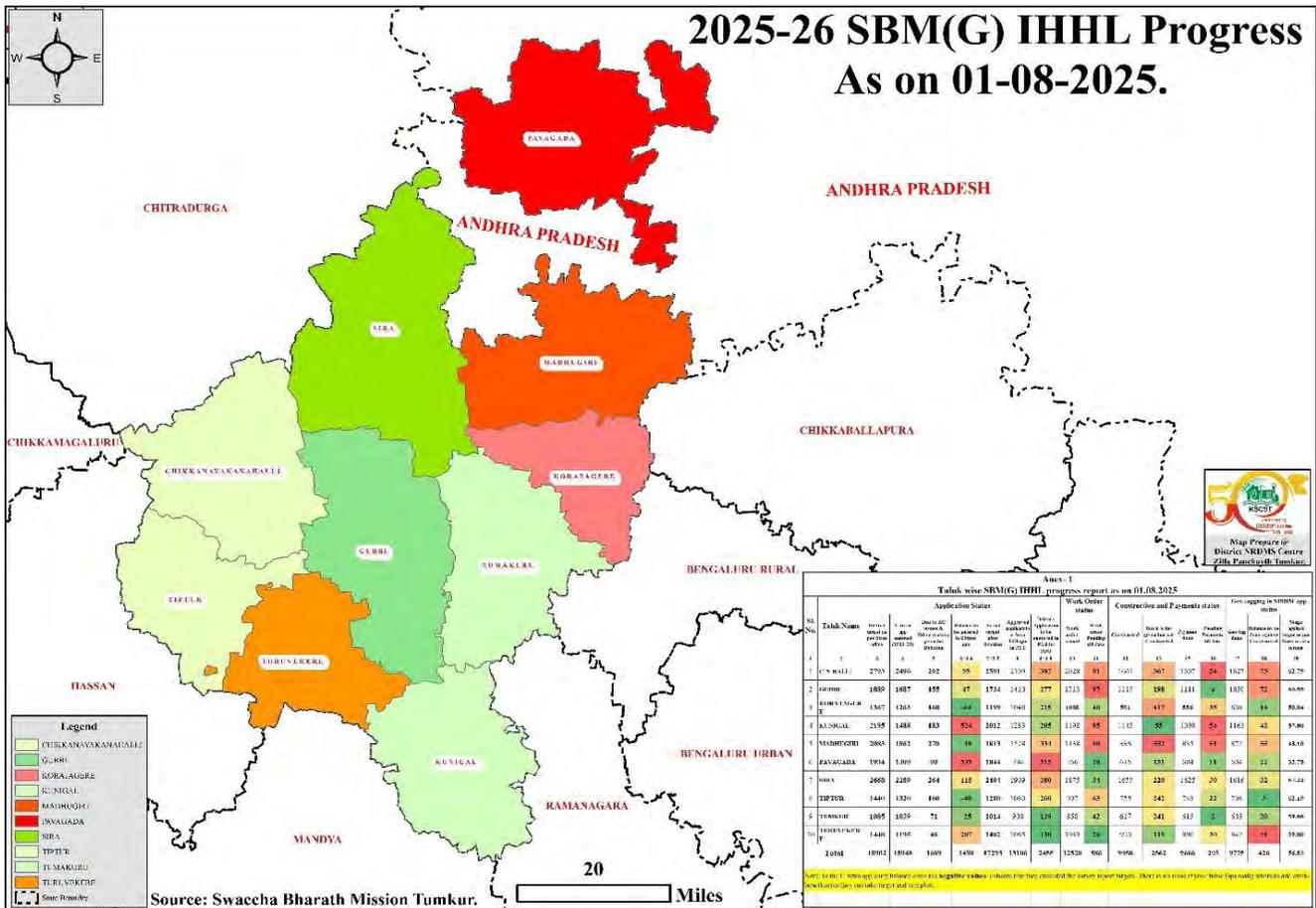


# SBM-IHHL maps.

Anex-1  
Taluk wise SBM(G) IHHL progress report as on 01.08.2025

Sl. No.	Taluk Name	Application Status							Work Order status		Construction and Payments status				Geo tagging in MSBM app status		
		District target as per State office	Citizen app entered (2023-25)	Due to RC issues & Other reasons given for Deletion	Balance to be entered in Citizen app	Actual target after deletion	Approved applicatio n from EOlogin in P.2.0	Balance Application to be entered in P.2.0 by PDO	Work order issued	Work order Pending till date	Constructed	Work order given but not Constructed	Payment done	Pending Payments till date	Geo tag done	Balance to be done against Constructed	%age against target as per State review format
1	2	3	4	5	6=4-6	7=3-5	8	9=4-8	10	11	12	13	15	16	17	18	19
1	C N HALLI	2793	2496	202	95	2591	2109	387	2028	81	1661	367	1607	54	1627	75	62.79
2	GUBBI	1889	1687	155	47	1734	1410	277	1313	97	1115	198	1111	4	1050	72	60.55
3	KORATAGER E	1367	1263	168	-64	1199	1048	215	1008	40	591	417	556	35	600	14	50.04
4	KUNIGAL	2195	1488	183	524	2012	1283	205	1198	85	1143	55	1090	54	1163	42	57.80
5	MADHUGIRI	2083	1862	270	-49	1813	1528	334	1438	90	886	552	835	51	872	55	48.10
6	PAVAGADA	1934	1309	90	535	1844	794	515	766	28	615	151	604	11	604	22	32.75
7	SIRA	2668	2289	264	115	2404	1909	380	1875	34	1655	220	1625	30	1616	32	67.22
8	TIPTUR	1440	1320	160	-40	1280	1060	260	997	63	755	242	733	22	796	3	62.19
9	TUMKUR	1085	1039	71	-25	1014	900	139	858	42	617	241	615	2	605	20	59.66
10	TURUVEKER E	1448	1195	46	207	1402	1065	130	1039	26	920	119	890	30	842	91	99.00
<b>Total</b>		<b>18902</b>	<b>15948</b>	<b>1609</b>	<b>1498</b>	<b>17293</b>	<b>13106</b>	<b>2455</b>	<b>12520</b>	<b>586</b>	<b>9958</b>	<b>2562</b>	<b>9666</b>	<b>293</b>	<b>9775</b>	<b>426</b>	<b>56.53</b>

Note: In the Citizen app entry balance clmn the **negative values** indicate that they exceeded the survey report targets. There is no issue if your taluk Gps really wants to add extra beneficiaries they can take target and complete.

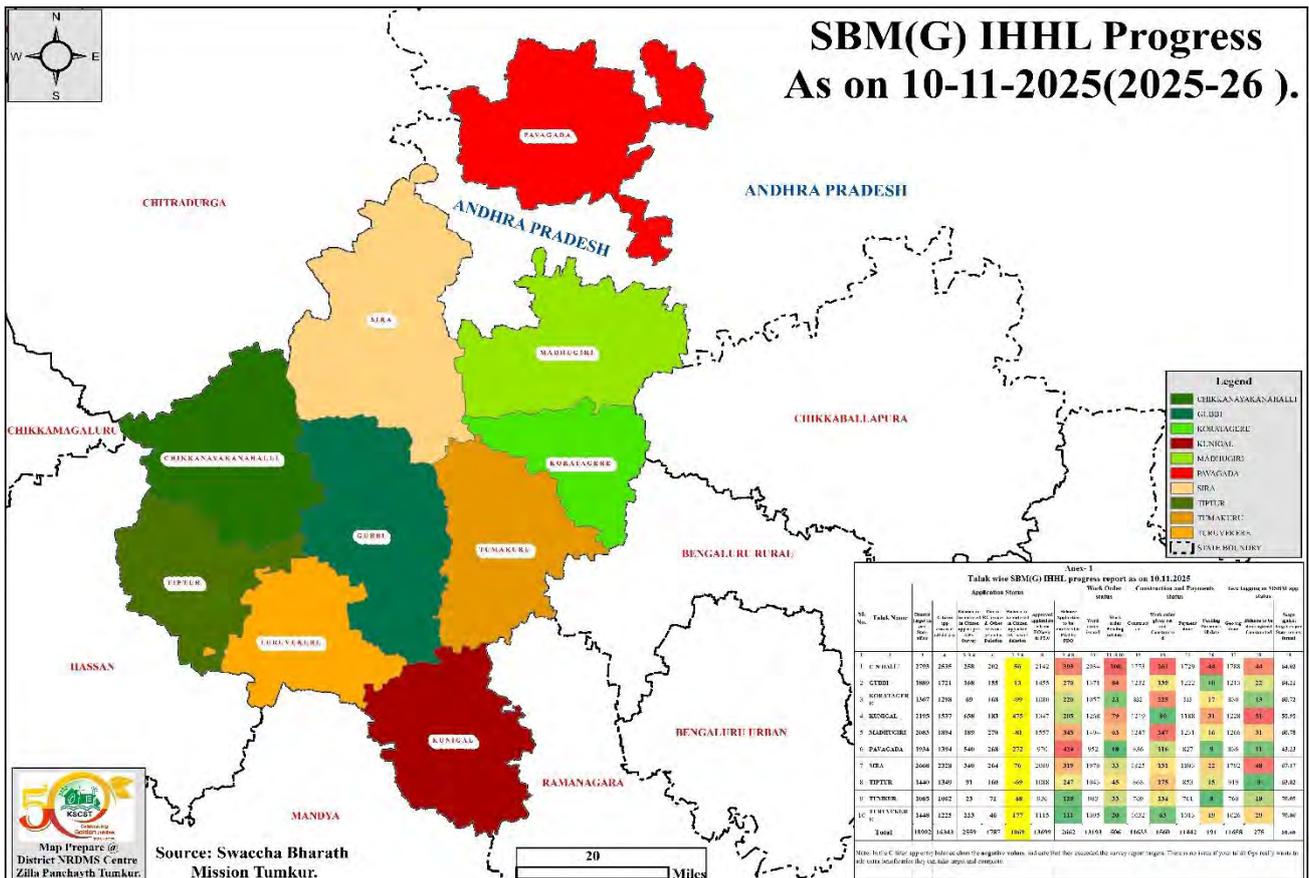




**Anex- 1**  
**Taluk wise SBM(G) IHHL progress report as on 10.11.2025**

SL No.	Taluk Name	Application Status							Work Order status		Construction and Payments status				Geo tagging in MSBM app status		
		District target as per State office	Citizen app entered (2023-25)	Balance to be entered in Citizen app as per GPs Survey	Due to RC issues & Other reasons given for Deletion	Balance to be entered in Citizen app after RC issue/deletion	Approved application from EOlogin in P2.0	Balance Application to be entered in P2.0 by PDO	Work order issued	Work order Pending till date	Construct ed	Work order given but not Construct ed	Payment done	Pending Payments till date	Geo tag done	Balance to be done against Constructed	%age against target as per State review format
1	2	3	4	5=3-4	6	7=5-6	8	9=4-8	10	11=8-10	12	13	15	16	17	18	19
1	C N HALLI	2793	2535	258	202	56	2142	393	2034	108	1773	261	1729	44	1788	44	64.02
2	GUBBI	1889	1721	168	155	13	1455	270	1371	84	1232	139	1222	10	1213	22	64.21
3	KORATAGER E	1367	1298	69	168	-99	1080	220	1057	23	832	225	815	17	830	13	60.72
4	KUNIGAL	2195	1537	658	183	475	1347	205	1268	79	1219	49	1188	31	1228	51	55.95
5	MADHUGIRI	2083	1894	189	270	-81	1557	345	1494	63	1247	247	1231	16	1266	31	60.78
6	PAVAGADA	1934	1394	540	268	272	970	424	952	18	836	116	827	9	836	11	43.23
7	SIRA	2668	2328	340	264	76	2009	319	1976	33	1825	151	1803	22	1792	48	67.17
8	TIPTUR	1440	1349	91	160	-69	1088	247	1043	45	868	175	853	15	919	8	63.82
9	TUMKUR	1085	1062	23	71	-48	936	128	903	33	769	134	761	8	760	18	70.05
10	TURUVEKER E	1448	1225	223	46	177	1115	111	1095	20	1032	63	1013	19	1026	29	70.86
<b>Total</b>		<b>18902</b>	<b>16343</b>	<b>2559</b>	<b>1787</b>	<b>1069</b>	<b>13699</b>	<b>2662</b>	<b>13193</b>	<b>506</b>	<b>11633</b>	<b>1560</b>	<b>11442</b>	<b>191</b>	<b>11658</b>	<b>275</b>	<b>61.68</b>

Note: In the Citizen app entry balance clmn the **negative values** indicate that they exceeded the survey report targets. There is no issue if your taluk Gps really wants to add extra beneficiaries they can take target and complete.



# Yukthadhara E-Saksham course certificate.

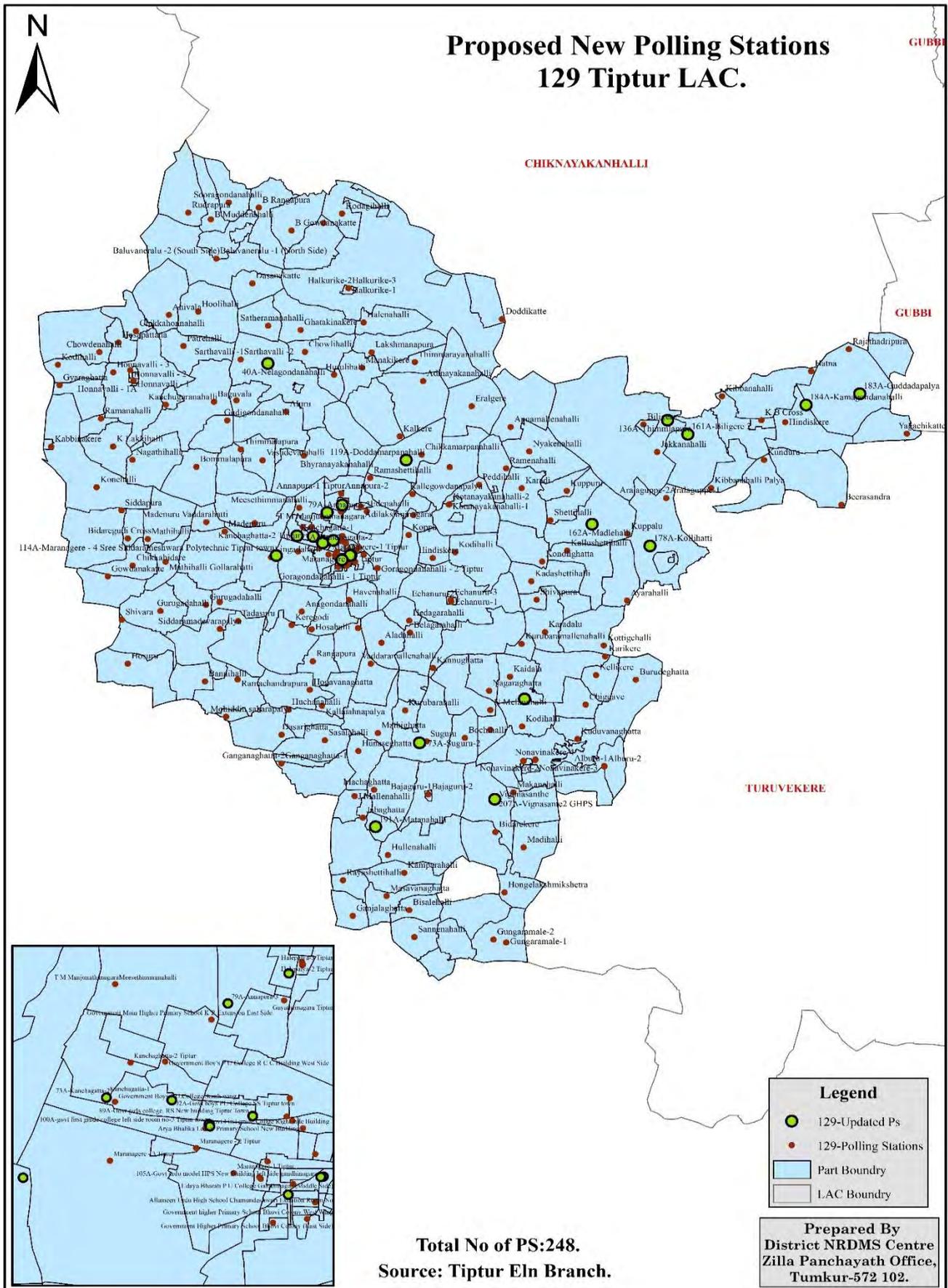


# Tumkur-Dasara-2025.

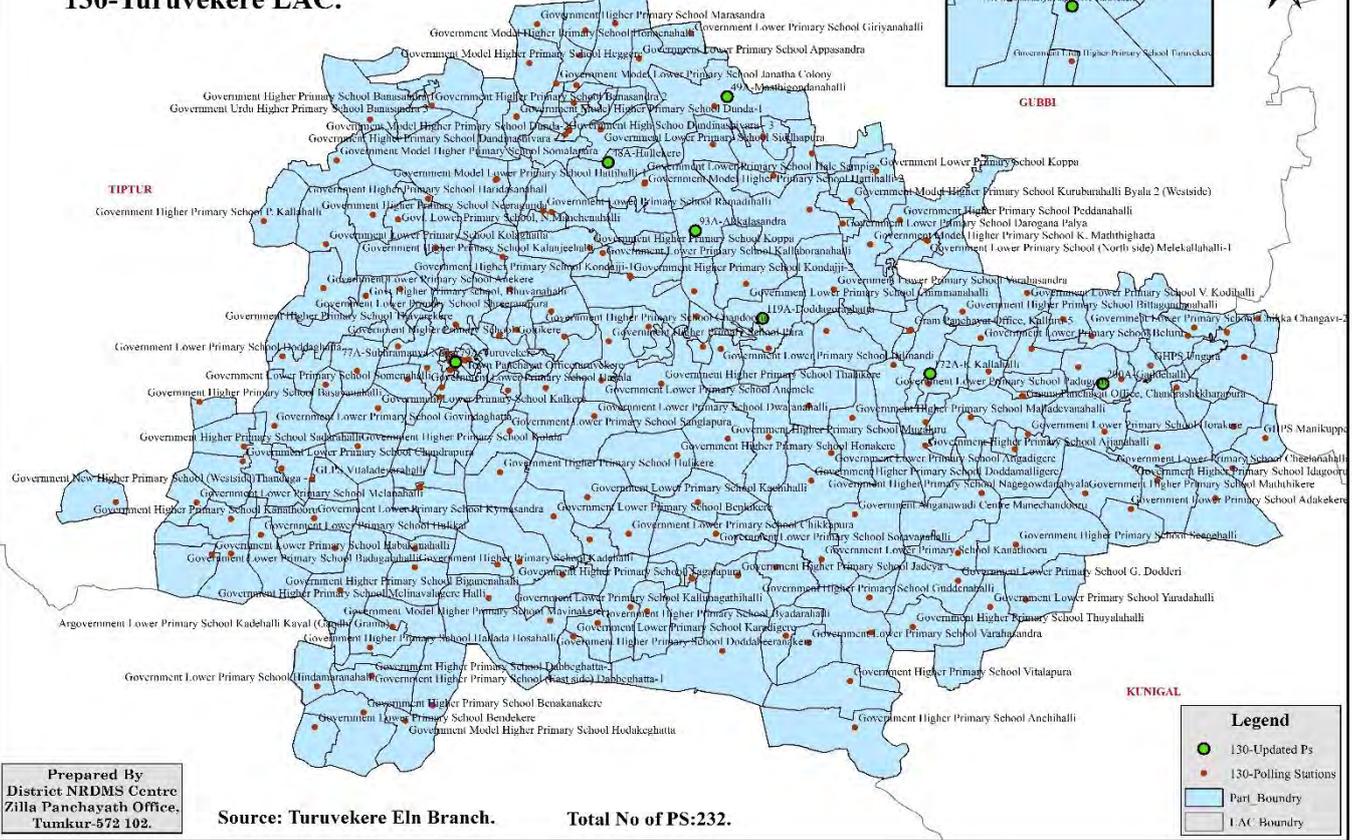


# Election-Rationalization of Polling Stations.

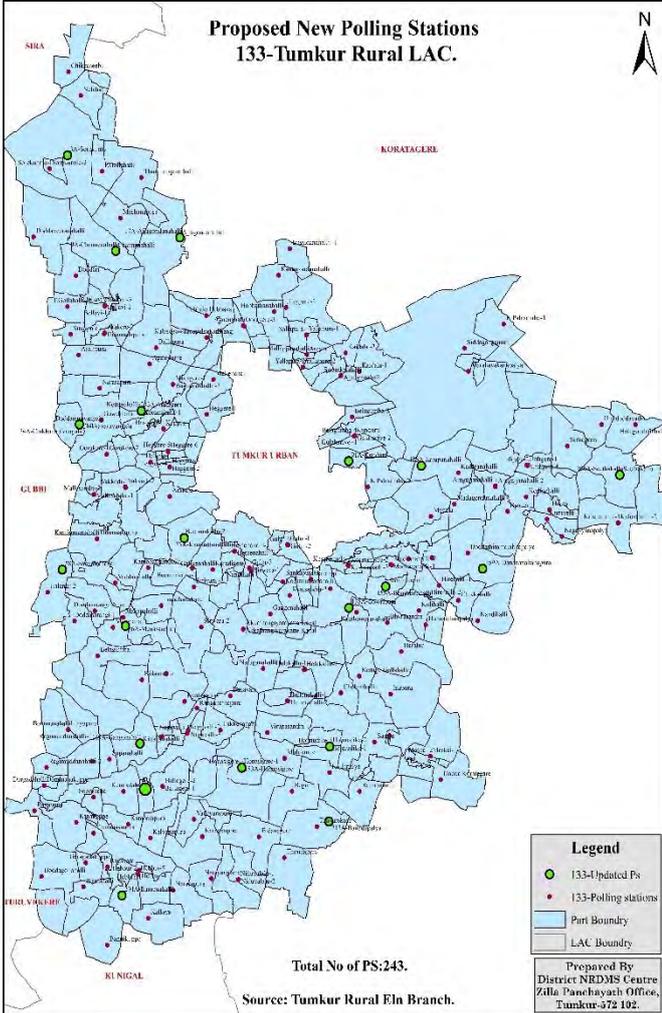
## Proposed New Polling Stations 129 Tiptur LAC.



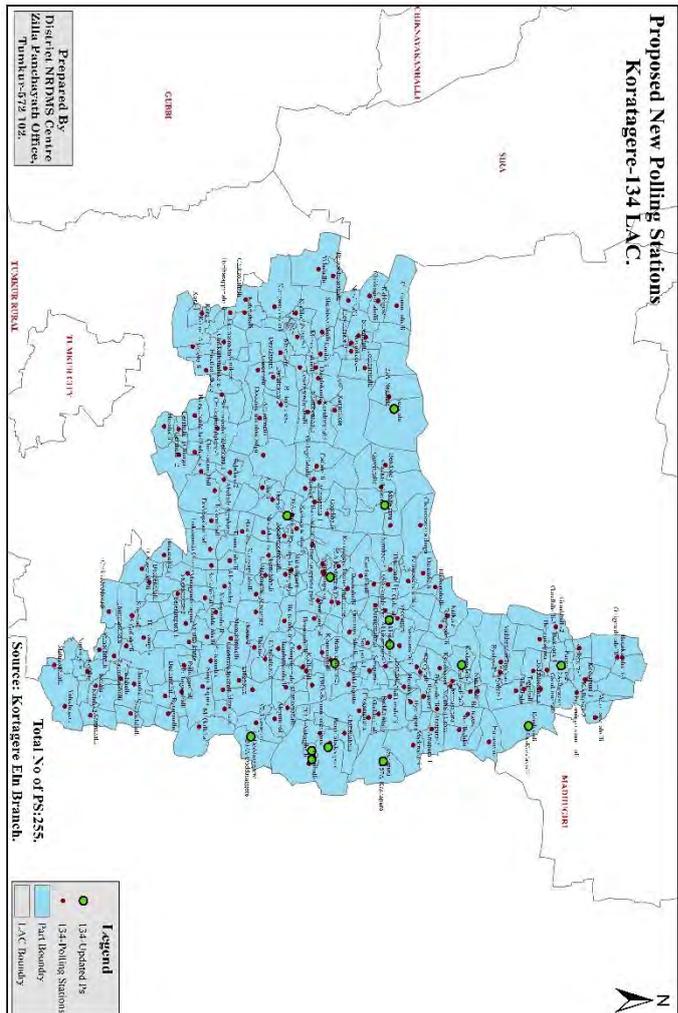
**CHIKNAYAKANHALI**  
**Proposed New Polling Stations**  
**130-Turuvekere LAC.**



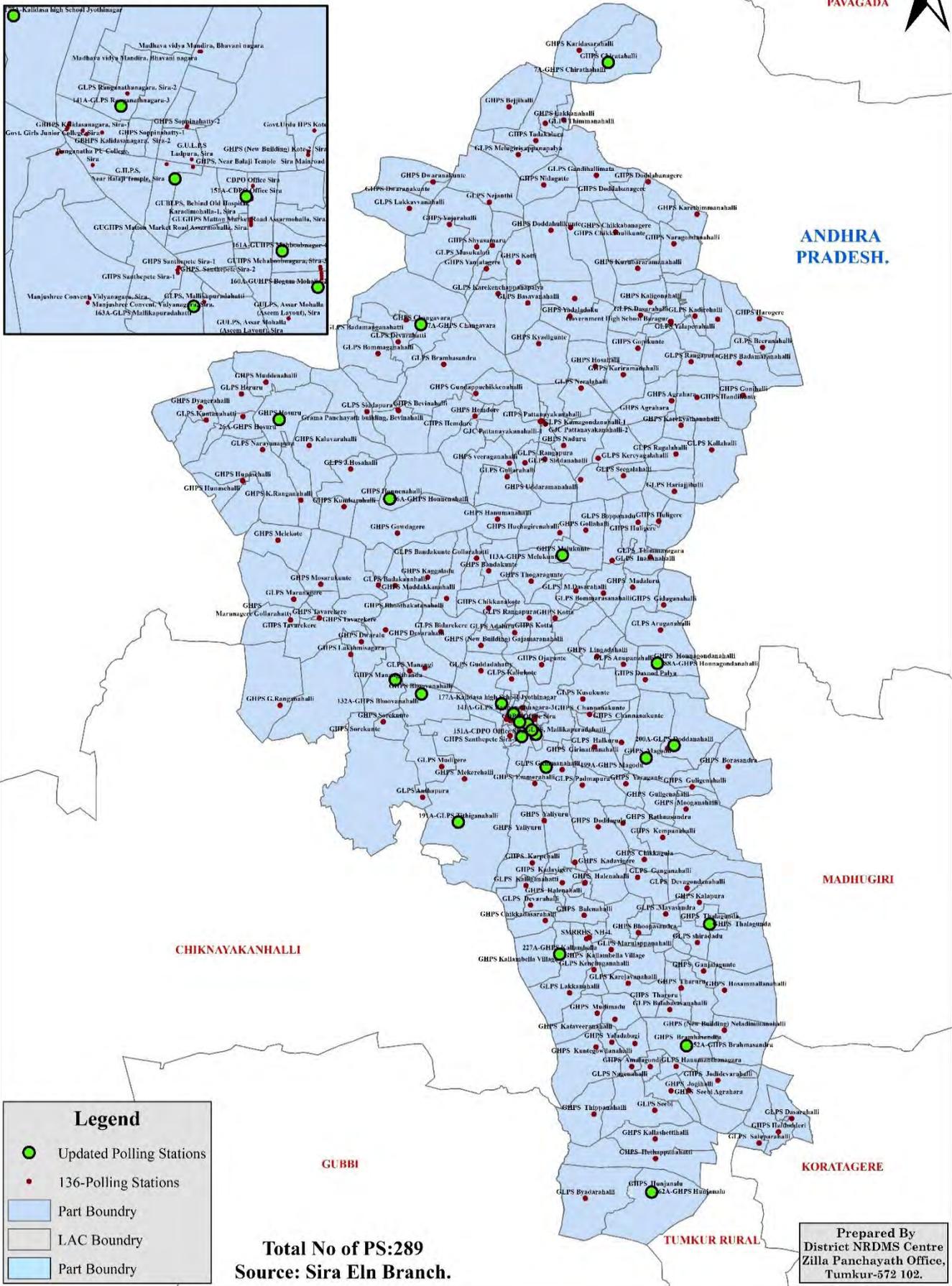
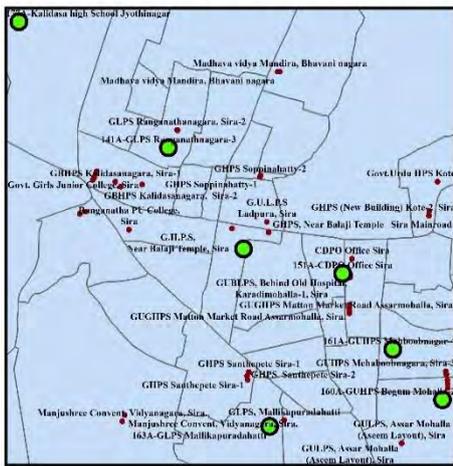
**SIRA**  
**Proposed New Polling Stations**  
**133-Tumkur Rural LAC.**



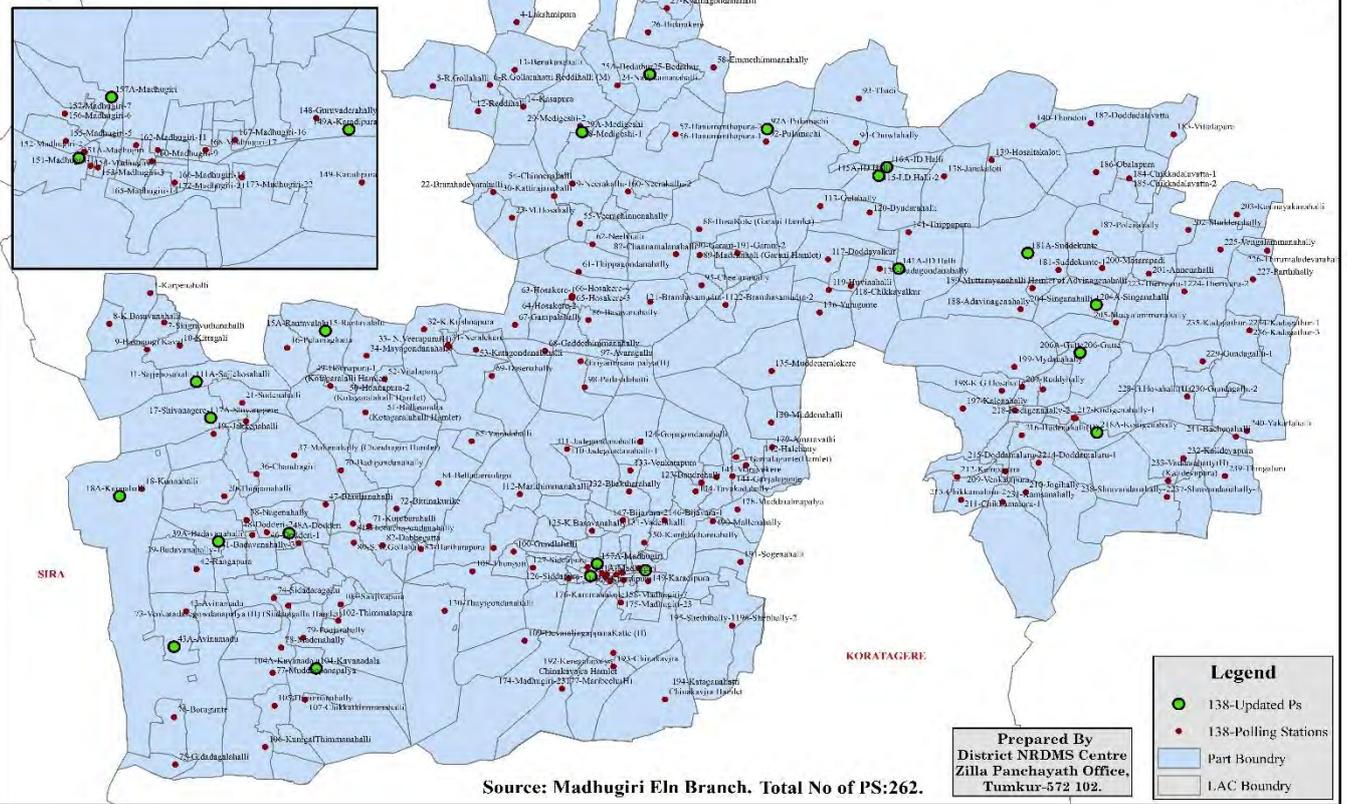
**Proposed New Polling Stations**  
**Koratageri-134 LAC.**



# Proposed New Polling Stations 136-Sira LAC.



# Proposed New Polling Stations 138-Madhugiri LAC.



# Village settlements Map

