

NATURAL RESOURCES DATA MANAGEMENT SYSTEM (NRDMS)

MONTHLY ACTIVITY REPORT
April - July 2025

Submitted by
District NRDMS Centre
Zilla Panchayat,
Kodagu



Submitted to
Karnataka State Council for
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Indian Institute of Science Campus,
Bengaluru – 560012

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➤ BASIC INFORMATION OF KODAGU DISTRICT

Division: Mysore

District Establishment Year: 1956

Headquarters: Madikeri, Kodagu

Current CPO (Chief Planning Officer): Abdul Nabi, CPO

Current CEO (Chief Executive Officer, Zilla Panchayat): Anand Prakash Meena, CEO

NRDMS Background – Kodagu District

1. Introduction to NRDMS

The Natural Resources Data Management System (NRDMS) is a flagship program initiated by the Department of Science & Technology (DST), Government of India, with active support from the Karnataka State Council for Science & Technology (KSCST). The program was conceptualized to create spatial data infrastructures at the district level that would support scientific, data-driven, and decentralized planning.

The core principle of NRDMS is to make reliable data available in a usable form for administrators, planners, researchers, and local self-government bodies. By integrating GIS (Geographic Information System), Remote Sensing, and Database Management Systems, NRDMS bridges the gap between scientific data collection and its application in local-level governance and development programs.

2. Objectives of NRDMS

- Develop spatial and non-spatial databases at the district and taluk levels.
- Support sector-specific applications such as natural resources planning, infrastructure development, health and education services, water resources, and tourism.
- Strengthen the process of decentralized planning by empowering Zilla Panchayats, Taluk Panchayats, and Gram Panchayats with accurate data.
- Provide decision support systems for administrators in disaster management, watershed development, election management, and land use monitoring.
- Act as a repository of scientific data, enabling inter-departmental coordination.

3. Establishment of NRDMS in Kodagu

The Kodagu District NRDMS Centre was established in 2001–2002 as part of the statewide initiative to set up GIS-based planning units in every district of Karnataka. The centre is housed in the Zilla Panchayat Office, Madikeri, and functions as a technical support system for district-level and local-level planning.

The centre works under the guidance of KSCST, Bengaluru, and is coordinated locally by a designated project associate. The Kodagu NRDMS Centre is responsible for maintaining spatial

datasets, updating them regularly, and extending technical support to line departments in the district.

4. Role and Applications in Kodagu

Being a unique hill district located in the Western Ghats, Kodagu has a distinct geographical and socio-economic profile. The NRDMS Centre in Kodagu plays a vital role in supporting district administration in the following areas:

1. Natural Resource Mapping

- Preparation of land use/land cover maps.
- Forest and biodiversity mapping, crucial since over 60% of Kodagu is under forest cover.
- Watershed and river basin mapping for Cauvery and its tributaries.

2. Infrastructure and Service Planning

- Identification of suitable sites for schools, anganwadis, healthcare facilities, and drinking water units.
- Road network mapping and connectivity analysis, especially in hilly and remote areas.

3. Disaster Management

- Landslide and flood-prone zone identification using GIS layers.
- Locating relief centres and evacuation routes.
- Supporting administration during natural calamities like the Kodagu floods of 2018 and 2019.

4. Tourism Development

- Creation of tourism information systems by mapping heritage sites, coffee estates, trekking routes, and eco-tourism zones.
- Assisting the Tourism Department with visitor flow and accessibility planning.

5. Support to Panchayat Raj Institutions (PRIs)

- Training Gram Panchayat officials to use GIS data for water supply planning, sanitation projects, and watershed development.
- Providing thematic maps for village-level development plans.

5. Achievements and Outcomes

- Development of GIS database layers for Kodagu, including revenue villages, road networks, drainage, settlements, forest areas, and agricultural lands.
- Generation of thematic maps for health, education, water resources, and infrastructure.
- Successful application of GIS in election management (polling booth mapping, voter accessibility studies).
- Support in natural disaster assessment and rehabilitation planning.
- Collaboration with research institutions and government departments to ensure data integration and sharing.

6. Importance of NRDMS for Kodagu

Kodagu district's terrain, dominated by mountains, dense forests, and river valleys, makes planning and governance a complex task. The NRDMS Centre serves as a scientific planning tool, ensuring:

- Efficient use of limited natural resources.
- Preservation of environmentally sensitive areas in the Western Ghats.
- Improved service delivery to remote habitations.
- Strengthening of evidence-based decision making at the local level.

7. Future Prospects

The Kodagu NRDMS Centre aims to expand into:

- Real-time data integration using GPS and IoT for rainfall, landslide monitoring, and disaster alerts.
- Development of mobile-based GIS applications for field officers and Gram Panchayat staff.
- Linking spatial databases with state-level data portals for seamless data sharing.
- Supporting the Sustainable Development Goals (SDGs) by aligning local development projects with global priorities.

Location & Boundaries – Kodagu District

Geographical Location

Kodagu district lies on the eastern slopes of the Western Ghats in southwestern Karnataka, with an area of about 4,102 sq. km. The terrain is largely hilly and forested, with major peaks such as Tadiandamol (1,750 m) and Pushpagiri (1,715 m)

- Latitudinal Extent: 11° 56' N to 12° 52' N
- Longitudinal Extent: 75° 22' E to 76° 11' E
- Total Area: ~4,102 sq. km
- Elevation: Ranges from 900 m above mean sea level in valleys to 1,750 m at the highest peak (Tadiandamol).
- Physiographic Region: Eastern slopes of the Western Ghats, characterized by rugged hills, deep valleys, and dense forests

Boundaries

- **North:** Hassan district
- **East:** Mysore district
- **Northwest:** Dakshina Kannada district

- **South and Southwest:** Wayanad and Kannur districts of Kerala
- **West:** Kasaragod district of Kerala

Administrative Subdivisions

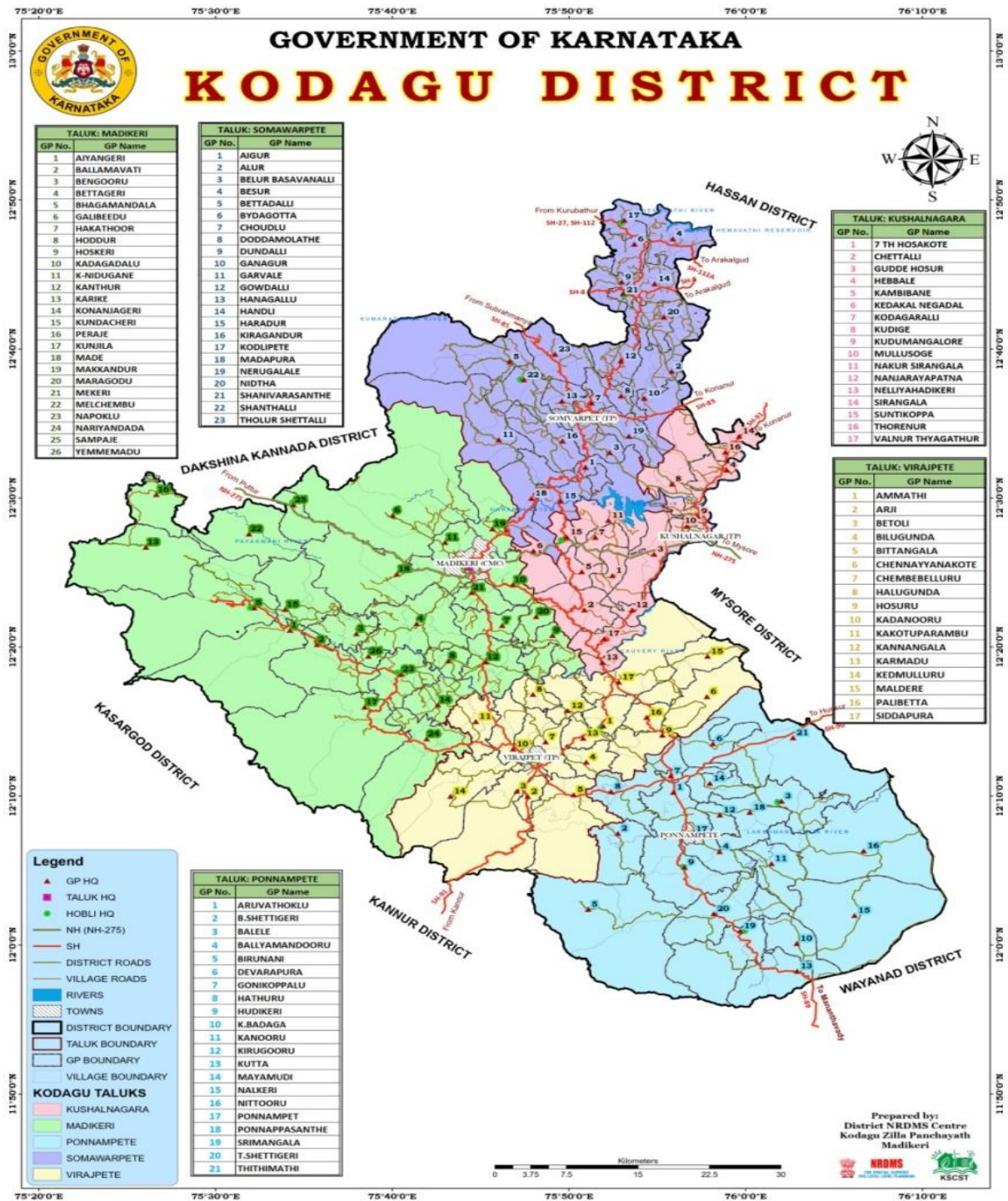
Attribute	Details
Taluks	5 (Madikeri, Somwarpet, Virajpet, Kushalnagar, Ponnampet)
Hoblis	17
Urban Local Bodies	5 (Madikeri, Somwarpet, Virajpet, Kushalnagar, Ponnampet towns)
Taluka Panchayats	5 (one for each taluk)
Gram Panchayats	102
Villages	~529
District Headquarters	Madikeri

Topography of Kodagu District

Kodagu district forms part of the Western Ghats and is characterized by rugged and varied terrain.

- **Hills and Mountains:** The district is predominantly hilly and mountainous, with elevations ranging from about 900 metres above mean sea level in valleys to 1,750 metres at Tadiandamol peak (the highest point in Karnataka). Other notable peaks include Pushpagiri (1,715 m) and Brahmagiri (1,608 m).
- **Plateaus and Uplands:** Central Kodagu consists of rolling uplands and tablelands, widely used for coffee plantations, pepper, cardamom, and other commercial crops.
- **River Valleys:** The Cauvery River originates at Talacauvery in Kodagu and flows eastward across the district. Its tributaries such as Lakshmanatirtha, Harangi, and Hemavathi create fertile valleys that support paddy cultivation.
- **Terrain Influence:** The undulating topography influences land use, settlement distribution, agriculture, and transportation, while also making the region prone to landslides and floods during heavy monsoon rains.
- **No Coastal Area:** Kodagu is a landlocked district without any coastal region.

KODAGU DISTRICT MAP



Climate of Kodagu District

Kodagu experiences a tropical monsoon climate, with heavy rainfall and moderate temperatures due to its elevation and location in the Western Ghats.

- **Average Rainfall:**
 - Varies between 2,500 mm and 4,500 mm annually.
 - Western Kodagu (Madikeri, Ponnampet, Virajpet) receives the heaviest rainfall, while eastern areas (Somwarpet, Kushalnagar) are relatively drier.
 - The Southwest Monsoon (June–September) contributes nearly 75% of the total rainfall.
- **Temperature Range:**
 - **Summer (March–May):** 15°C – 28°C
 - **Monsoon (June–September):** 10°C – 25°C
 - **Winter (October–February):** 8°C – 25°C
- **Climatic Zones:**
 - **High Rainfall Evergreen Zone** – Western taluks (Madikeri, Ponnampet, Virajpet) with dense forests, heavy monsoon, and cool temperatures.
 - **Plantation Zone** – Central uplands, dominated by coffee, pepper, and cardamom cultivation under a moderate climate.
 - **Eastern Transitional Zone** – Areas like Kushalnagar and parts of Somwarpet, with relatively lower rainfall, more open lands, and paddy cultivation in valleys.

Natural Resources of Kodagu District

Kodagu is one of the most eco-sensitive districts of Karnataka, endowed with rich natural resources.

- **Forests:**
 - Nearly 54% of the district's geographical area is under forest cover.
 - Forest types include evergreen, semi-evergreen, moist deciduous, and shola forests.
 - Forests are home to rich biodiversity including elephants, tigers, leopards, gaurs, and several endemic species of flora and fauna.
- **Minerals:**
 - Kodagu has limited mineral wealth due to its forested and hilly terrain.
 - Minor occurrences of granite, laterite, and quartz are reported, but large-scale mining is not permitted due to environmental sensitivity.
- **Water Resources:**
 - The district is the catchment area of the River Cauvery, which originates at Talacauvery.
 - Several tributaries and streams ensure perennial water availability.

- Important water storage structures include Harangi Reservoir and multiple small tanks.
- **Soil Types:**
 - Predominantly lateritic soil in high rainfall zones.
 - Red loamy soil in uplands, suitable for plantation crops like coffee, pepper, and cardamom.
 - Alluvial soil in valleys, ideal for paddy cultivation.

Major Rivers and Water Sources in Kodagu District

- **Cauvery River:**
 - Originates at Talacauvery (Brahmagiri Hills, Madikeri Taluk).
 - Lifeline of South India; flows eastward and supports irrigation, drinking water, and hydropower.
- **Tributaries of Cauvery:**
 1. **Lakshmanatirtha River** – flows through western Kodagu before joining Cauvery.
 2. **Harangi River** – originates in Pushpagiri Hills, forms the Harangi Reservoir, and later joins Cauvery near Kushalnagar.
 3. **Hemavathi River** – originates in Chikmagalur but drains part of eastern Kodagu.
 4. Numerous perennial streams and rivulets drain the hilly terrain.

Reservoirs & Lakes:

- **Harangi Dam (near Kushalnagar)** – major irrigation source.
- **Small tanks and lakes** spread across villages support domestic and agricultural needs.

Groundwater:

- Available in valleys and plateaus, but limited in hilly regions due to rocky terrain.
- Rain-fed tanks and springs act as supplementary water sources.

SPATIAL AND NON SPATIAL DATABASE

Sector / Subsector	Scale	Source	Survey / Publn. Year	Area covered	Status Code	File Format
1. Natural Resources						
<i>Land</i>						
1. Topography						
Contour Map	1:50,000	SOI		District	CC	

Slope Map	1:500,000	SOI	Can be generated			tiff
2. Geology – A						
Rock features		MGD	2005-2006	4,102 sq km	CC	shp
Structural features			2005-2006	4,102 sq km	CC	shp
3. Geology – B						
Rock features		MGD	2005-2006	4,102 sq km	CC	shp
Structural features			2005-2006	4,102 sq km	CC	shp
4. Mineral Resources		MGD				
5. Geomorphology		MGD	2005-2006	4,102 sq km	CC	shp
6. Land use	1:500,000	KRSRAC	2020	4,102 sq km	CC	shp
7. Waste Lands		KRSRAC				
8. Soils		NBSS&L UP	2005-2006	4,102 sq km	CC	shp
9. Forest & Wildlife						
Forest type		KFD	2020	2504.2 sq.km	CC	shp
Crown Density						
Forest Category						
Forest admn.		SOI				
Wild Life						
Water						
1.Ground water						
Hydro Geology		MGD				

Hydro chemistry		ZP				
Ground water budget						
2.Surface water						
Drainage	1:500,000	MGD	2021	4,102 sq km	CC	shp
Surface water bodies	1:500,000	SOI & KRSAC	-	124.8 sq km approx	CC	pdf
3.Climate						

Sector / Subsector	Scale	Source	Survey / Publn. Year	Area covered	Status Code	File Format
2.Demography						
Population						
Tehsil boundary						
District boundary	1:500,000	KGIS	2020	4,102 sq km	CC	shp
Current popln. distbn.						
Literacy						
Levels of education						
Occupation						
Village boundary	1:500,000	KGIS	2020	4,102 sq km	CC	shp
Employment						
District scenario						
Employment exchange						
Assets & Expenditure						

Migration						
Destitutes						

3.Socio Economy						File Format
Industry						
Developmental activity						
4.Agro Economy						
Land Utilisation						
Private Land						
Common property						
Land Ownership pattern						
General scenario						
Farmer's holdings						
Principal crops						
Irrigation						
<i>Minor irrigation</i>						
Canals		DLR & SS				
Tube wells		DLR & SS				
Dug wells		DLR & SS				
Tanks		DLR & SS			CC	shp
Lift irrigation		DLR & SS				
<i>Major irrigation</i>						
Reservoirs		DLR & SS			CC	shp
Anicuts		DLR & SS				
Agricultural implements			2021-22			
Animal husbandry		AHVS	2024		CC	shp
Pisciculture			2022		ND	excel

Plantation						
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Sector / Subsector	Scale	Source	Survey / Publn. Year	Area covere d	Status Code	File Format
5.Infrastructure						
Communications						
Post offices		DLR& SS				
Telecommunicati on		DLR& SS				
Drinking water		DLR& SS				
Educational facilities		DDPI				
Electricity		Land Records				
Financial institutions		DLR& SS				
Markets		DLR& SS				
Health	1:500,00 0	DHO	2024	4,102 sq km	CC	shp
NGO's		DLR& SS	2023		ND	excel
Tourism		KSTDC				
Transport	1" = ...miles	PWD	2023	4,102 sq km	ND	excel
6.Miscellaneous						
District map with taluks	1" =... miles	DLR& SS		4,102 sq km		pdf
District & taluk boundaries		SOI		4,102 sq km	CCC	shp
District map with hoblies	1: =.. miles	DLR & SS		4,102 sq km		pdf
Village boundary with settlement		SOI/KSR AC		4,102 sq km	CC	shp

Police station details		SP				
Details on Assembly constituencies		DC		4,102 sq km	CC	shp
Gram Panchayths& Zilla Panchayaths, its jurisdiction for all taluks		DC		4,102 sq km		pdf

MAPPING ACTIVITIES

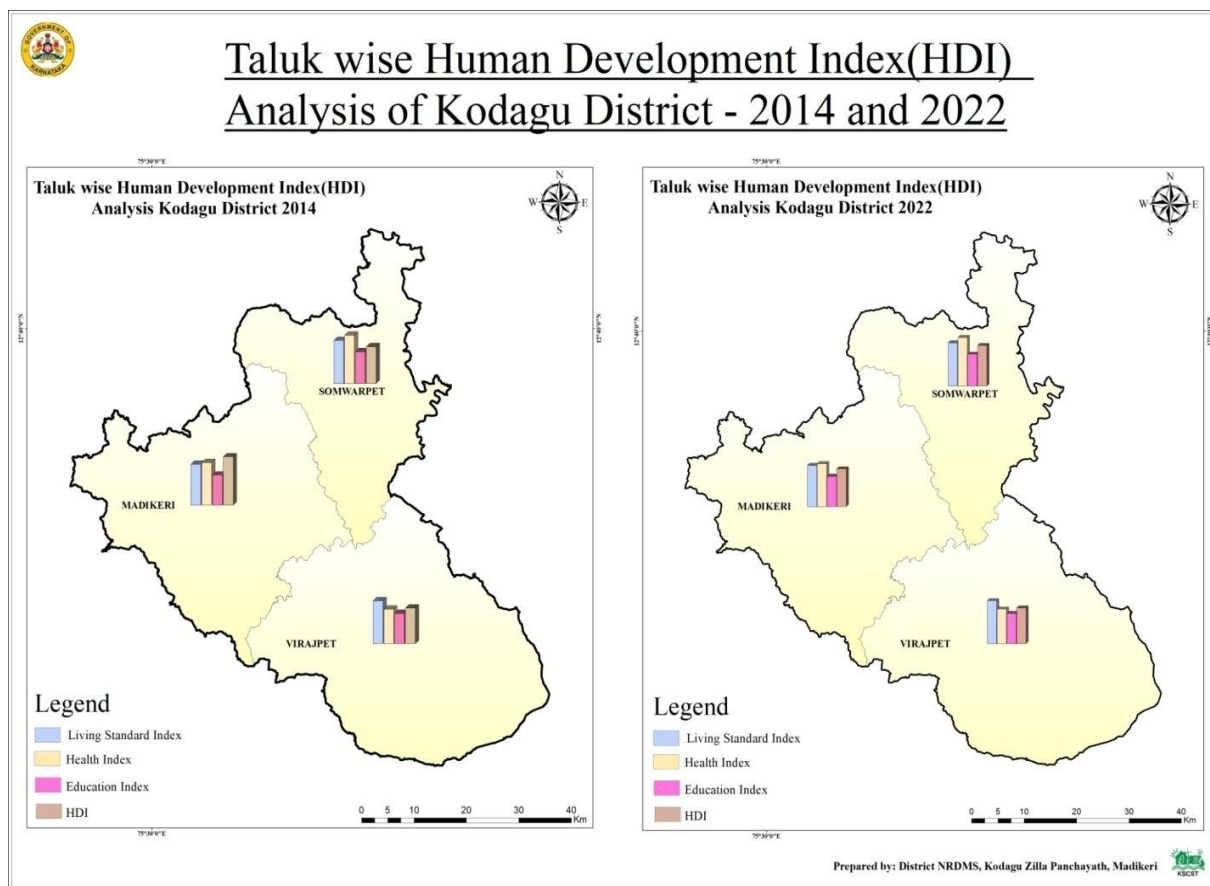
NRDMS Centre Activities (April 2025 - July 2025)

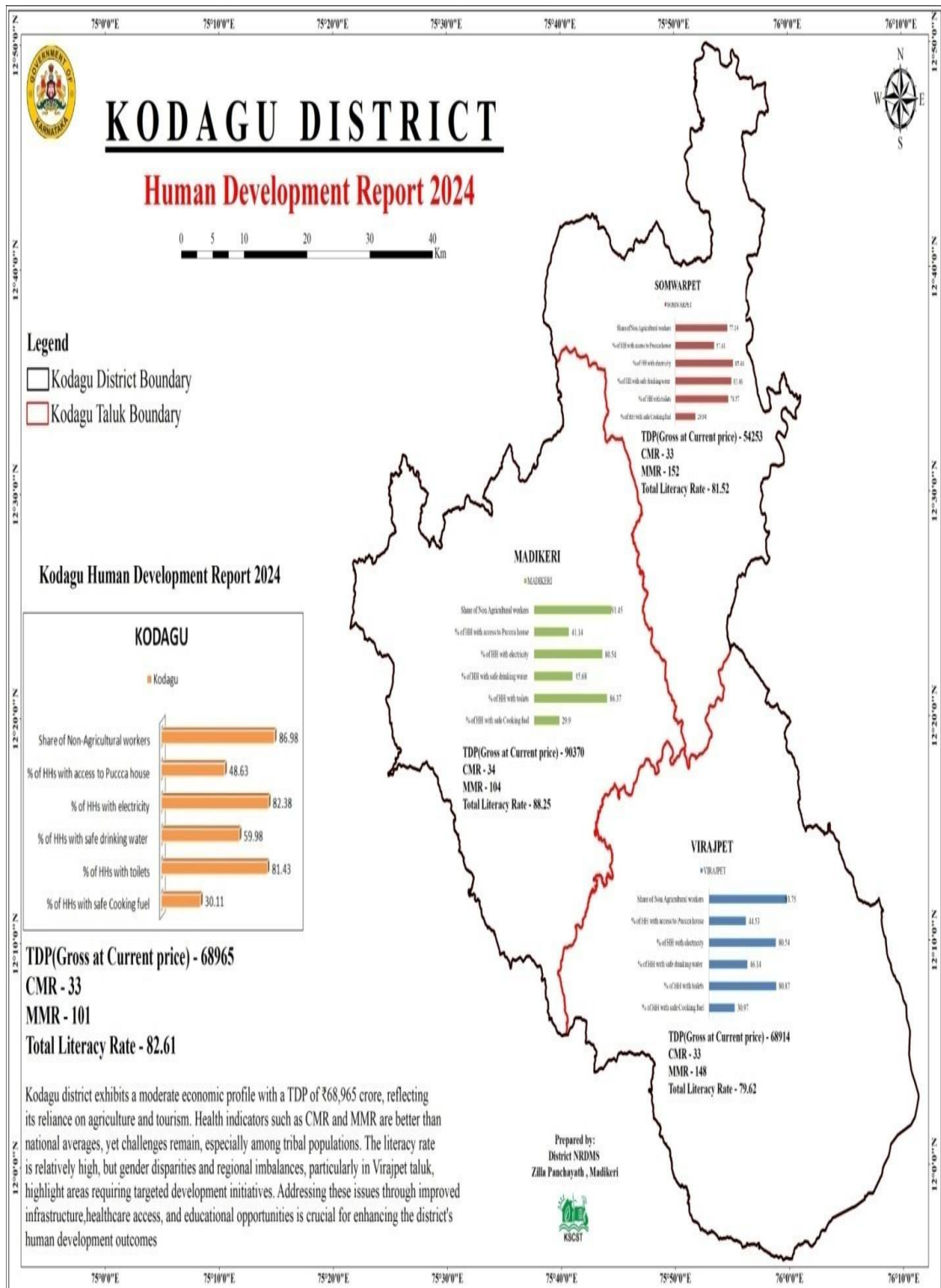
- **Human Index Map**

Dept – Planning Section (Kodagu Zilla Panchayat,Madikeri)

The taluk-wise Human Development Index (HDI) analysis of Kodagu district for 2014 and 2022 shows clear overall progress across all three taluks—Madikeri, Somwarpet, and Virajpet. In 2014, Madikeri led with a balanced performance, Somwarpet showed moderate development with strength in education, and Virajpet lagged behind in all indices. By 2022, all taluks demonstrated notable improvement, with Madikeri consolidating its position through higher living standards and education levels, Somwarpet recording remarkable growth in both education and living standards, and Virajpet significantly narrowing the gap by improving in health, education, and income indicators. District-wide, education has consistently been the strongest contributor to HDI, while living standards have improved sharply due to better infrastructure, tourism, and agricultural income. Health indices also improved, though more moderately, pointing to the need for continued focus on healthcare facilities. Overall, Kodagu district has experienced balanced human development, with reduced disparities between taluks and steady progress in socio-economic conditions between 2014 and 2022

The Kodagu District Human Development Report 2024 highlights a moderately strong economic profile with a Total Domestic Product (TDP) of ₹68,965 crore, reflecting its dependence on agriculture and tourism. The district records an impressive literacy rate of 82.61%, with Madikeri taluk leading at 88.25%, while Virajpet lags behind at 79.62%. Health outcomes show mixed results—while the Crude Mortality Rate (CMR) remains low at 33, the Maternal Mortality Rate (MMR) is high, particularly in Somwarpet (152) and Virajpet (148), indicating gaps in maternal healthcare. Infrastructure indicators reveal good progress in electricity (82%) and sanitation facilities (81% households with toilets), but challenges persist in housing (only 49% pucca houses), safe drinking water (60%), and clean cooking fuel (30%). Madikeri emerges as the best-performing taluk across most indicators, whereas Somwarpet and Virajpet reflect higher vulnerabilities in health, literacy, and living conditions. Overall, Kodagu demonstrates steady progress in human development, but targeted interventions in maternal health, housing, drinking water, and rural energy access are essential to achieve balanced development across all taluks.

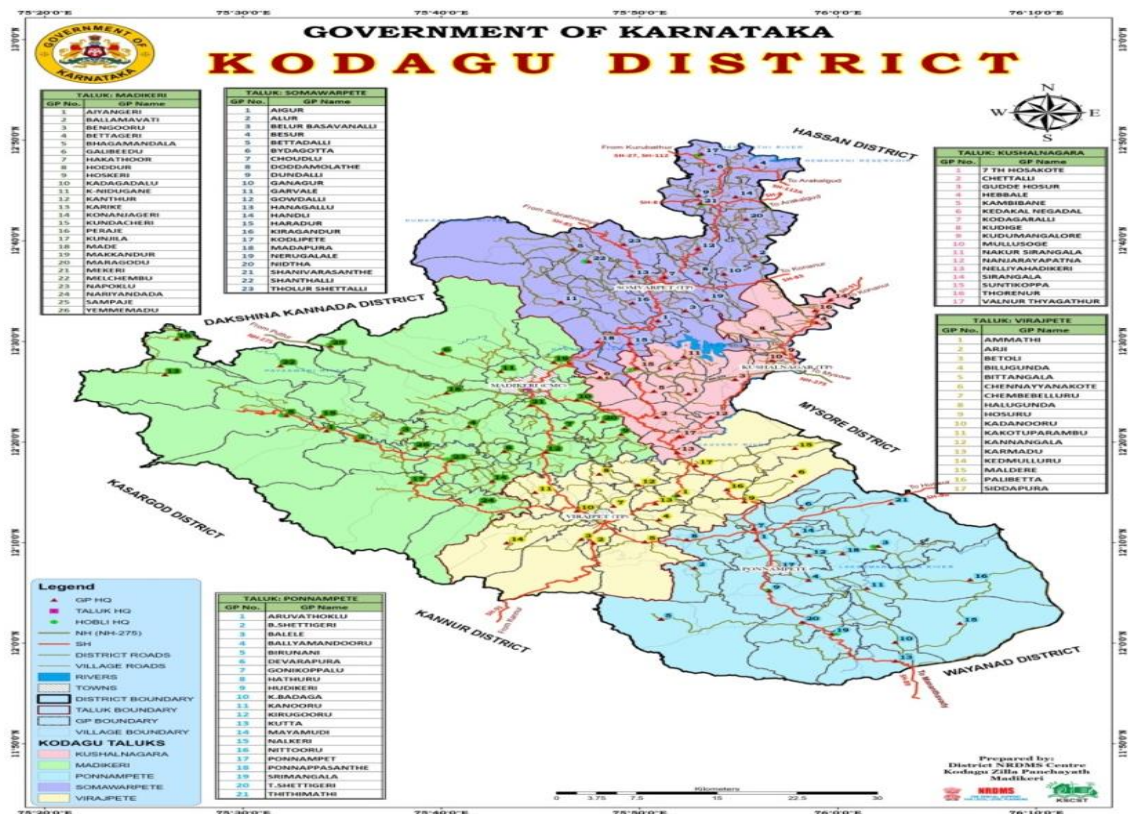




Taluk wise Human Development Index(HDI) Analysis Kodagu District												
Sl No	District	Taluk	Living Standard Index		Health Index		Education Index		HDI			
			Value		Value		Value		Value	Rank	Value	Rank
			2014	2022	2014	2022	2014	2022	2014		2022	
1	Kodagu	Madikeri	0.509	0.6782	0.879	0.7058	1.000	0.4994	0.796	20	0.620	48
		Somwarpet	0.573	0.7147	0.490	0.8006	0.771	0.5263	0.611	22	0.670	29
		Virajpet	0.515	0.7112	0.551	0.5720	0.693	0.5013	0.586	27	0.589	82

○ KODAGU DISTRICT MAP

- Dept – Planning Section (Kodagu Zilla Panchayat, Madikeri)
- Dept-Women and Child



The uploaded map is a detailed administrative map of Kodagu District, Karnataka, showing its five taluks—Madikeri, Somwarpet, Ponnampet, Kushalnagar, and Virajpet—color-coded for easy identification. Each taluk lists the Gram Panchayats (GPs) with their corresponding numbers, highlighting administrative divisions down to the village level. The map displays major district roads, village roads, rivers, towns, and NH-275, along with clear boundaries for district, taluk, GP, and villages. Key symbols such as GP HQs, taluk HQs, and hobli HQs are indicated, while the map also shows neighboring districts (Dakshina Kannada, Hassan, Mysore, Kannur, Kasargod, and Wayanad) to provide geographic context. This map is likely prepared by the District NRDMS Centre, Kodagu Zilla Panchayath, for planning and GIS-based administrative purposes, serving as a comprehensive reference for local governance and development initiatives.

- **LANDSLIDE VULNERABILITY AREA MAP**

- DEPT-District Disaster Management Authority**

The map titled "Kodagu District - Areas Vulnerable to Landslides", prepared by the District Disaster Management Authority (DDMA), Kodagu, highlights regions within Kodagu district, Karnataka, that are susceptible to landslides. The grey-shaded areas on the map represent landslide-vulnerable zones, primarily concentrated around the taluks of Madikeri, Somwarpet, and Virajpet. The map also delineates district, taluk, and gram panchayat boundaries along with major roads (national highways, state highways, and district roads), towns, and water bodies, aiding in geospatial understanding of hazard-prone areas.

A detailed table included on the map lists vulnerable villages under each taluk, indicating the total number of habitations at risk — 73 across the district. Madikeri taluk has the highest number of vulnerable villages (33), followed by Somwarpet (18) and Virajpet (22). This map serves as a critical tool for disaster preparedness, planning, and mitigation, emphasizing the need for infrastructure resilience, early warning systems, and community awareness in the identified regions



CAUVERY RIVER BUFFER MAP KODAGU DISTRICT

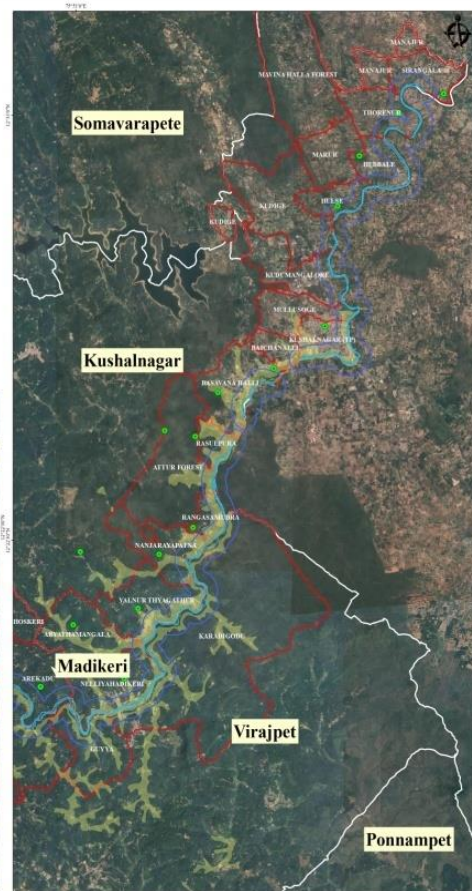
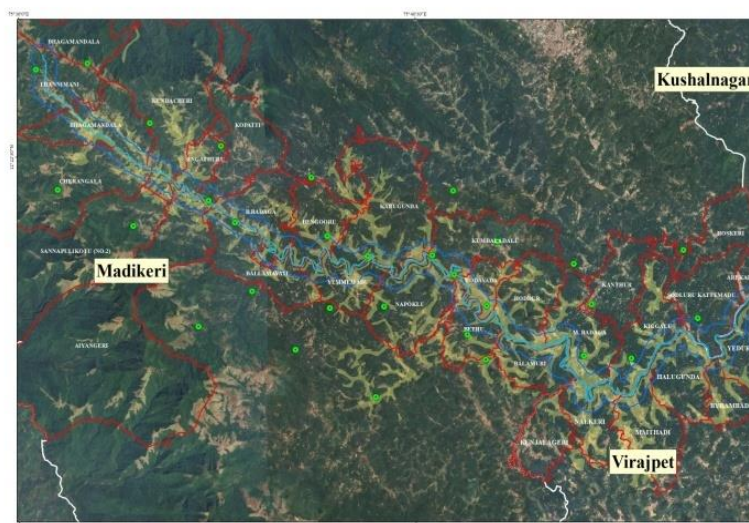
District Disaster Management Authority

0 2 4 8 12 16 Km

Buffer = 500 mts

Legend

- Cauvery River
- Buffer Zone 500 meters
- Flood Affected area
- Adjacent Villages
- Taluk Boundary
- Settlements



CENSUS DATA 2011

Sl.no	Village	GP_NAME	Taluk	AREA	No. of Houses	TOT_P	TOT_M	TOT_F	MEDI	FAC	ALL_HOSP
1	BEHRALE	BEHRALE	KUSHALNAGARA	4.87742197	837	3244	1576	1668	4		
2	MATTINA HALLA FOREST	KUDUR	KUSHALNAGARA	17.10142513	0	0	0	0	0		
3	KUDUR	KUDUR	KUSHALNAGARA	15.24518753	1432	5532	2741	2791	8		
4	KUDUMANGALORE	KUDUMANGALORE	KUSHALNAGARA	8.40844914	2403	9146	4853	4293	20		
5	MARU	BEHRALE	KUSHALNAGARA	8.59688553	291	1151	558	593	0		
6	ATTUR FOREST	SCANDUR	KUSHALNAGARA	16.8004177	135	438	204	234	4		
7	AYATHAMANGALA	VALNUR HYAGATHUR	KUSHALNAGARA	9.67786219	568	2146	1214	1232	1		
8	KUSHALNAGAR (TP)	KUSHALNAGAR (TP)	KUSHALNAGARA	4.015554521	3788	15126	7742	7384	25		
9	MELLUSOGE	MELLUSOGE	KUSHALNAGARA	5.715827116	2187	9389	4612	4777	1		
10	NANABAYAPATNA	NANABAYAPATNA	KUSHALNAGARA	7.25521245	355	1454	703	751	0		
11	KARAGODDE	SINDAPURA	VIJAYAPETE	53.2217814	1224	5046	2524	2522	7		
12	GUTTA	SINDAPURA	VIJAYAPETE	9.25781887	702	2924	1424	1500	7		
13	AYANGERI	AYANGERI	MADURAI	58.9149442	363	1813	925	888	3		
14	KARAPATI	KUSHALNAGARA	MADURAI	14.8397545	186	678	312	366	2		
15	BRAGAMANDALA	BRAGAMANDALA	MADURAI	22.81432251	524	1917	979	938	13		
16	M. BADAGA	KANTHUR	MADURAI	11.12413115	615	2455	1276	1179	2		
17	KUSHALAMALLE	BEHRALE	MADURAI	12.2450461	181	686	322	364	5		
18	KUNDACHERI	KUNDACHERI	MADURAI	27.62861962	381	1378	683	695	4		
19	KARUSANDA	BEHRALE	MADURAI	21.0993462	469	1435	715	719	8		
20	AREKADU	KOSKERE	MADURAI	8.139621788	448	1841	925	911	5		
21	KODGALLI	KANTHUR	MADURAI	10.81471867	448	1463	748	715	1		
22	KALLAMAYATI	KALLAMAYATI	MADURAI	10.87444524	375	1247	624	623	0		
23	M. BADAGA	BENGGOORU	MADURAI	9.41988815	212	722	383	339	2		
24	CHERANGALA	BRAGAMANDALA	MADURAI	95.8027875	376	1332	657	675	1		
25	KOSKERE	KOSKERE	MADURAI	10.20776088	581	1525	712	813	3		
26	KANTHUR	KANTHUR	MADURAI	8.475042139	861	3311	1721	1590	1		
27	NAPORU	NAPORU	MADURAI	12.73272892	787	3429	1689	1740	1		
28	KODGALLI KATTENADU	NARACODU	MADURAI	10.8862818	485	1788	881	907	0		
29	THIRUMADURU	THIRUMADURU	MADURAI	6.962188122	423	1874	973	901	8		
30	BENGGOORU	BENGGOORU	MADURAI	8.98112219	448	1875	848	788	10		

Sl.no	Village	GP_NAME	Taluk	AREA	No. of Houses	TOT_P	TOT_M	TOT_F	MEDI	FAC	ALL_HOSP
31	THIRUNAGARI	BRAGAMANDALA	MADURAI	21.4677138	213	883	440	443	1		
32	KODGALLI	KODGALLI	MADURAI	9.41528162	725	2781	1381	1400	3		
33	KALAMUR	KONNAMANGERI	MADURAI	6.9000009	273	910	440	470	1		
34	KANNAPURU (NO.2)	AYANGERI	MADURAI	44.6897787	152	646	309	337	4		
35	KONNATHUR	KONNATHUR	MADURAI	4.68982889	287	788	379	409	2		
36	BEHRALE	NAPORU	MADURAI	6.74797747	649	2517	1227	1290	7		
37	THIRUVANNA	KODGALLI	MADURAI	1.89577149	446	1569	784	785	1		
38	KALLAMAYATI	KODGALLI	MADURAI	9.7228184	664	2874	1442	1432	1		
39	THIRUNUR	KUSHALNAGARA	MADURAI	6.11448339	973	3821	1921	1900	1		
40	BRAGAMANDALA	BRAGAMANDALA	MADURAI	5.28048219	586	2198	1088	1110	1		
41	MANACUR	BRAGAMANDALA	MADURAI	3.49797747	288	1089	524	565	0		
42	KANNAMANGARI	NANABAYAPATNA	MADURAI	2.08520304	443	1684	833	851	17		
43	NEELIVANAMANGARI	NEELIVANAMANGARI	MADURAI	9.41472748	1728	7674	3813	3861	3		
44	KALLAMAYATI	KODGALLI	MADURAI	2.90028287	728	2881	1487	1394	0		
45	VALNUR TRIKAMANGARI	VALNUR TRIKAMANGARI	MADURAI	9.71499192	482	1943	929	1014	0		
46	BEHRALE	BEHRALE	MADURAI	3.76182844	311	1110	563	547	5		
47	KALLAMAYATI	KODGALLI	MADURAI	2.688978218	168	744	383	361	0		
48	KALLAMAYATI	KODGALLI	MADURAI	8.88888889	449	1624	812	812	0		
49	YEDUR	KANNAMANGALA	MADURAI	12.8250318	181	583	288	295	2		
50	KALLAMAYATI	KODGALLI	MADURAI	10.47912248	114	1447	742	705	0		
51	BRAGAMANDALA	KALLAMAYATI	MADURAI	4.87648889	112	481	240	241	0		
52	KALLAMAYATI	KODGALLI	MADURAI	8.96111486	886	3448	1703	1645	3		
53	KALLAMAYATI	KODGALLI	MADURAI	7.28888892	228	728	374	354	18		

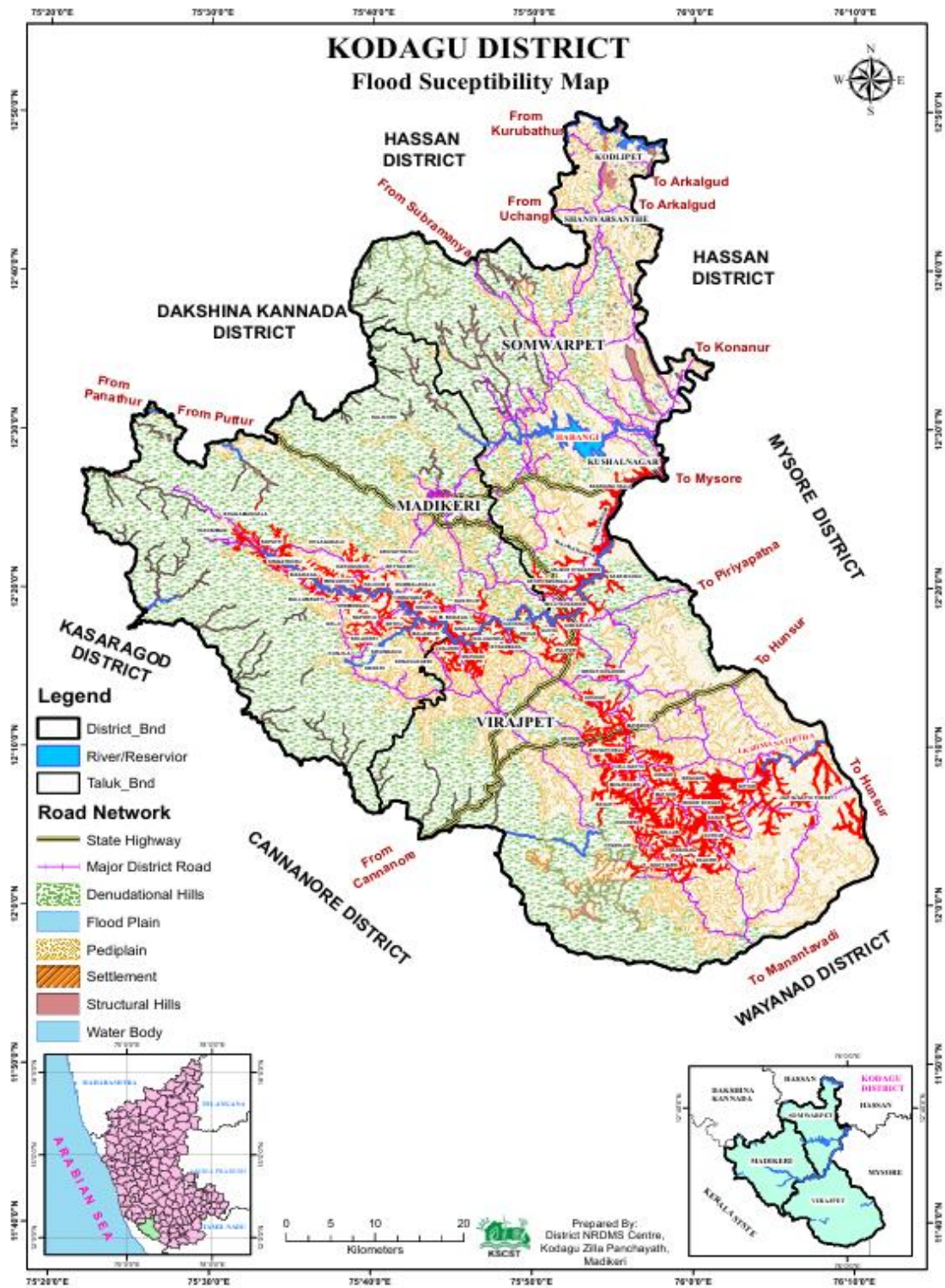
Abbreviations :
P - Population
M - Male
F - Female
Medi - Medical
Fac - Facilities
Hosp - Hospital



The Cauvery River Buffer Map of Kodagu District, developed by the District Disaster Management Authority, delineates a 500-meter buffer zone along the Cauvery River to aid in flood risk assessment and disaster preparedness. The map integrates satellite imagery with critical overlays such as flood-affected areas, adjacent villages, settlements, and taluk boundaries (Madikeri, Virajpet, Somavarapete, etc.). Key population centers like Kushalnagar and Ponnampet are highlighted for reference. The legend aids in interpretation, while the accompanying 2011 Census Data provides demographic insights into villages within the buffer zone, including the number of households, population by gender, and availability of facilities. This data is vital for planning evacuation routes, resource allocation, and mitigation strategies in flood-prone areas.

- **FLOOD SUSCEPTIBILITY MAP ,KODAGU DISTRICT**
Dept- District Disaster Management Authority

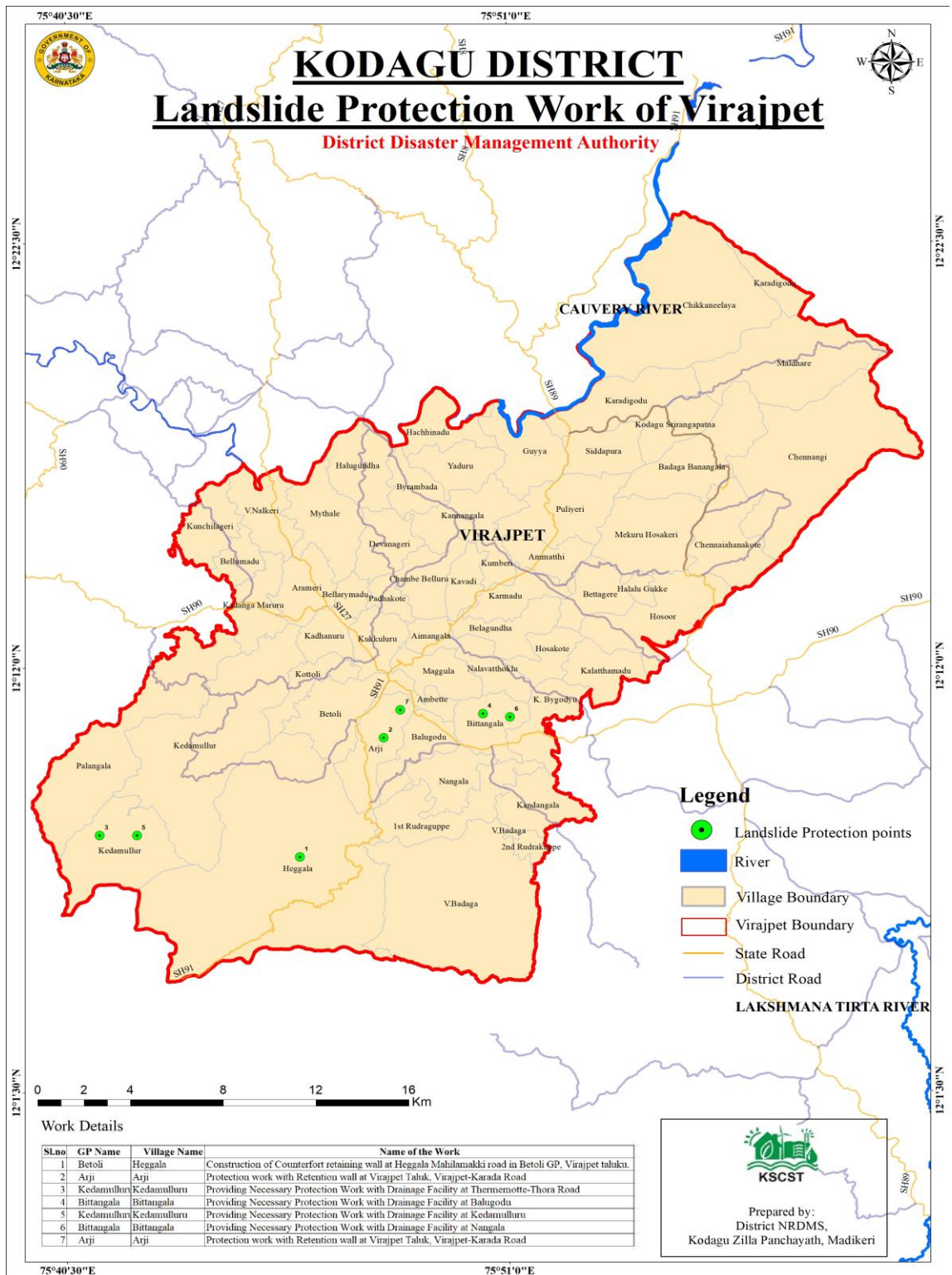
The provided map illustrates the Flood Susceptibility Zones of Kodagu District, Karnataka, demarcating regions based on geomorphological and hydrological features. The district is divided into three taluks—Madikeri, Somwarpet, and Virajpet—with clear boundaries marked for administrative and hydrological analysis. Key features include rivers and reservoirs, major and minor road networks, and settlements, with areas classified into denudational hills, structural hills, pediplains, and flood plains. The flood-prone zones, highlighted in red, are primarily concentrated along river valleys and low-lying regions, indicating higher vulnerability to seasonal flooding. This map serves as a critical planning tool for disaster management, infrastructure development, and risk mitigation, enabling authorities to prioritize flood control measures, improve evacuation routes, and strengthen resilience in high-risk zones. Prepared by the District NRDMS Centre and Kodagu Zilla Panchayath, this map integrates topographic and hydrological data for precise spatial planning.

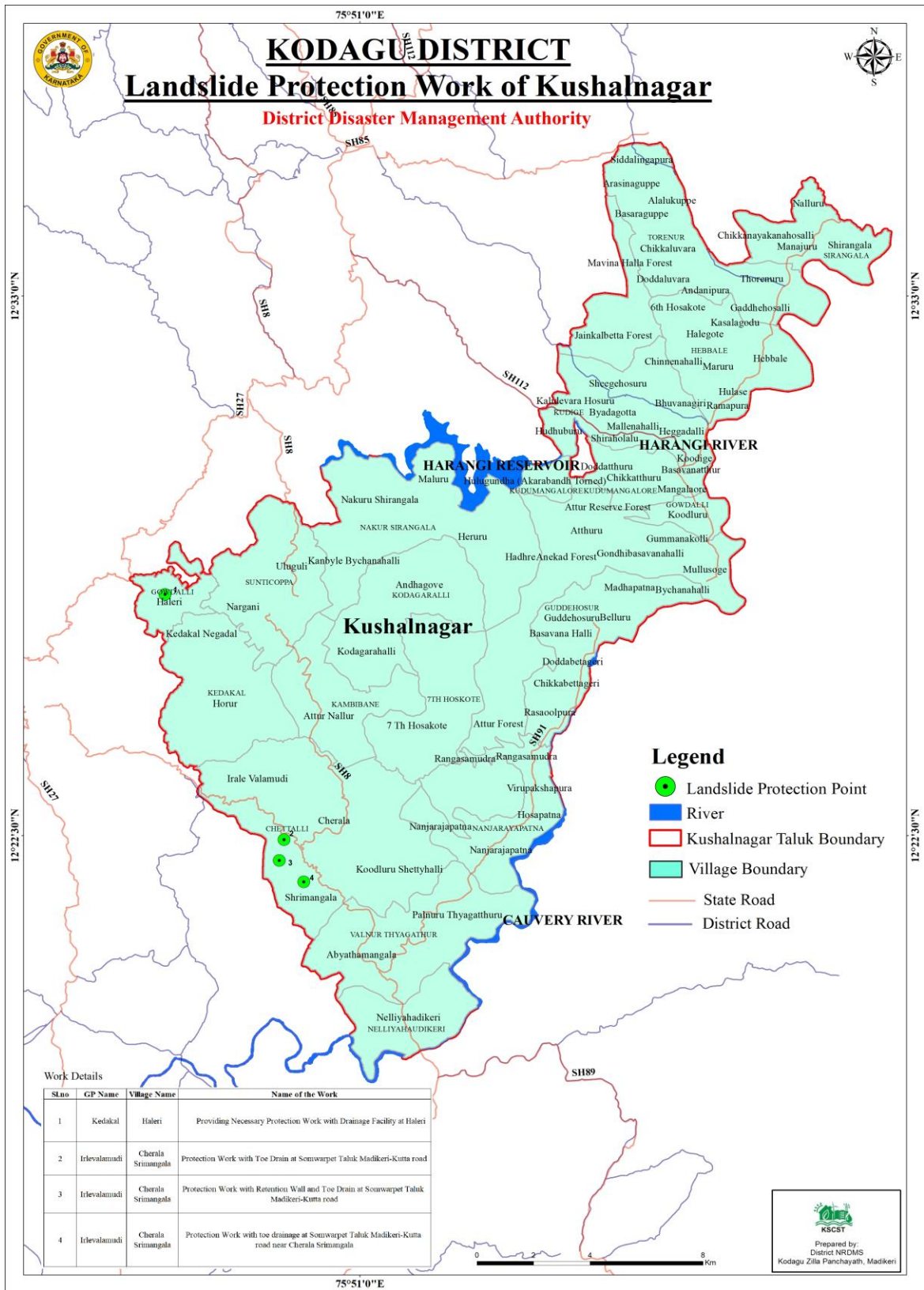


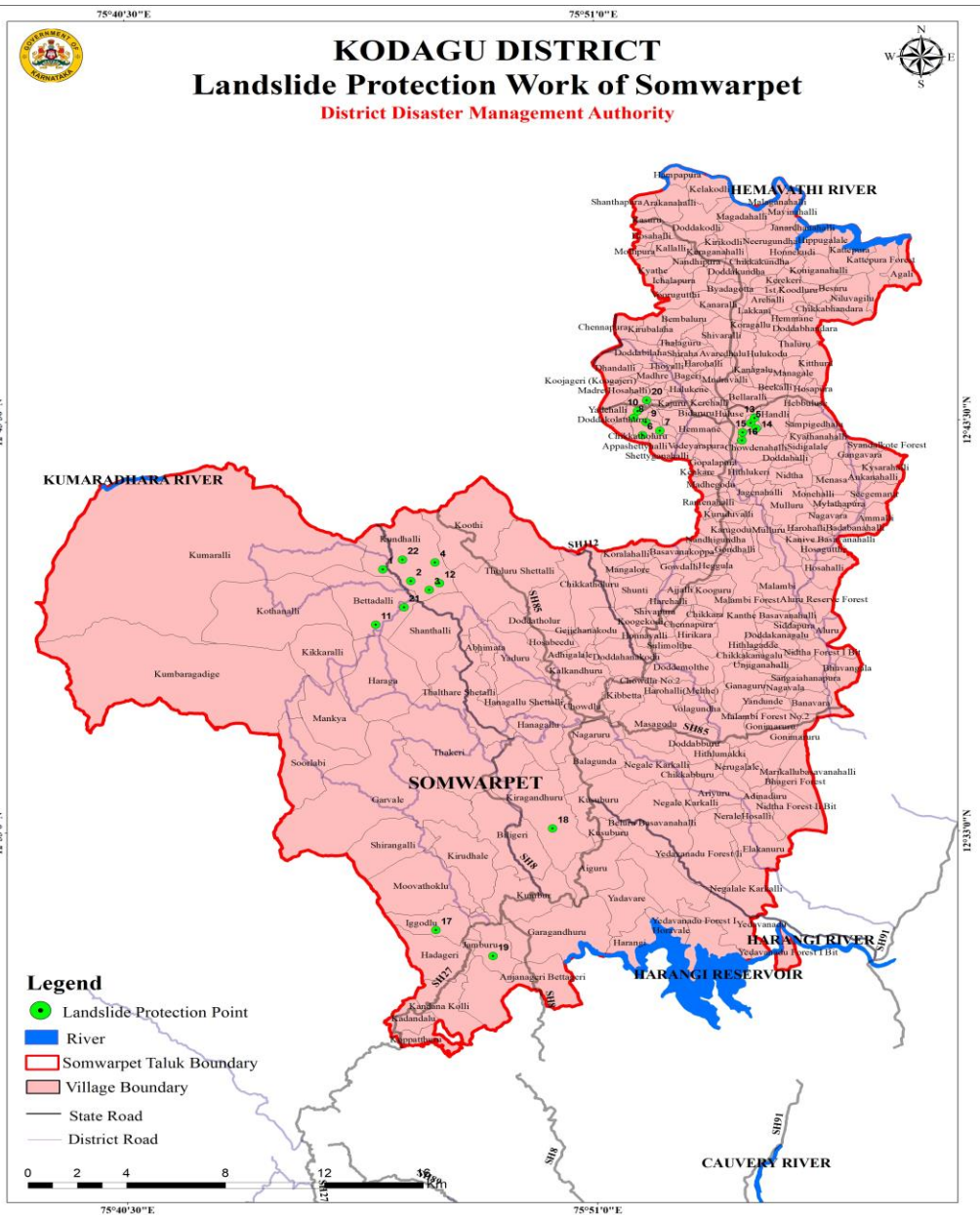
- **LANDSLIDE PROTECTION WALLS MAPPING, KODAGU DISTRICT**
Dept- District Disaster Management Authority

The landslide protection works undertaken by the District Disaster Management Authority (DDMA), Kodagu, primarily involve the construction of retaining walls and protective structures designed to stabilize vulnerable slopes and prevent soil movement during heavy rainfall. These structures are engineered using reinforced concrete and stone masonry, ensuring durability and strength to withstand hydrological pressures and slope instability. Proper drainage channels are incorporated alongside the walls to divert surface runoff and reduce waterlogging, which is a major trigger for slope failures. In total, 104 retaining wall works have been executed across the district, with 71 in Madikeri, 22 in Somwarpet, 7 in Virajpet, and 4 in Kushalnagar, strategically located in areas identified as highly landslide-prone. The protective walls are constructed with appropriate height, thickness, and foundation depth based on site-specific geotechnical assessments, thereby enhancing slope stability and safeguarding infrastructure, agricultural land, and human settlements. Detailed maps marking the exact locations of these constructions have been prepared, serving as technical documentation for monitoring, evaluation, and future disaster management planning.

In addition to structural stability, these walls are designed with weep holes to allow controlled water discharge, thereby reducing pore water pressure behind the wall. The use of locally available stone and concrete mix ensures both cost-effectiveness and structural integrity. In steep terrains, step-cut foundations are adopted to anchor the retaining walls firmly into the slope. The alignment of the walls is carefully planned to follow the natural contour, minimizing disturbance to the terrain. These interventions not only prevent erosion and landslides but also protect roads, residential areas, and public infrastructure from damage. Overall, the landslide protection wall construction forms a crucial part of Kodagu's disaster risk reduction and climate resilience strategy.





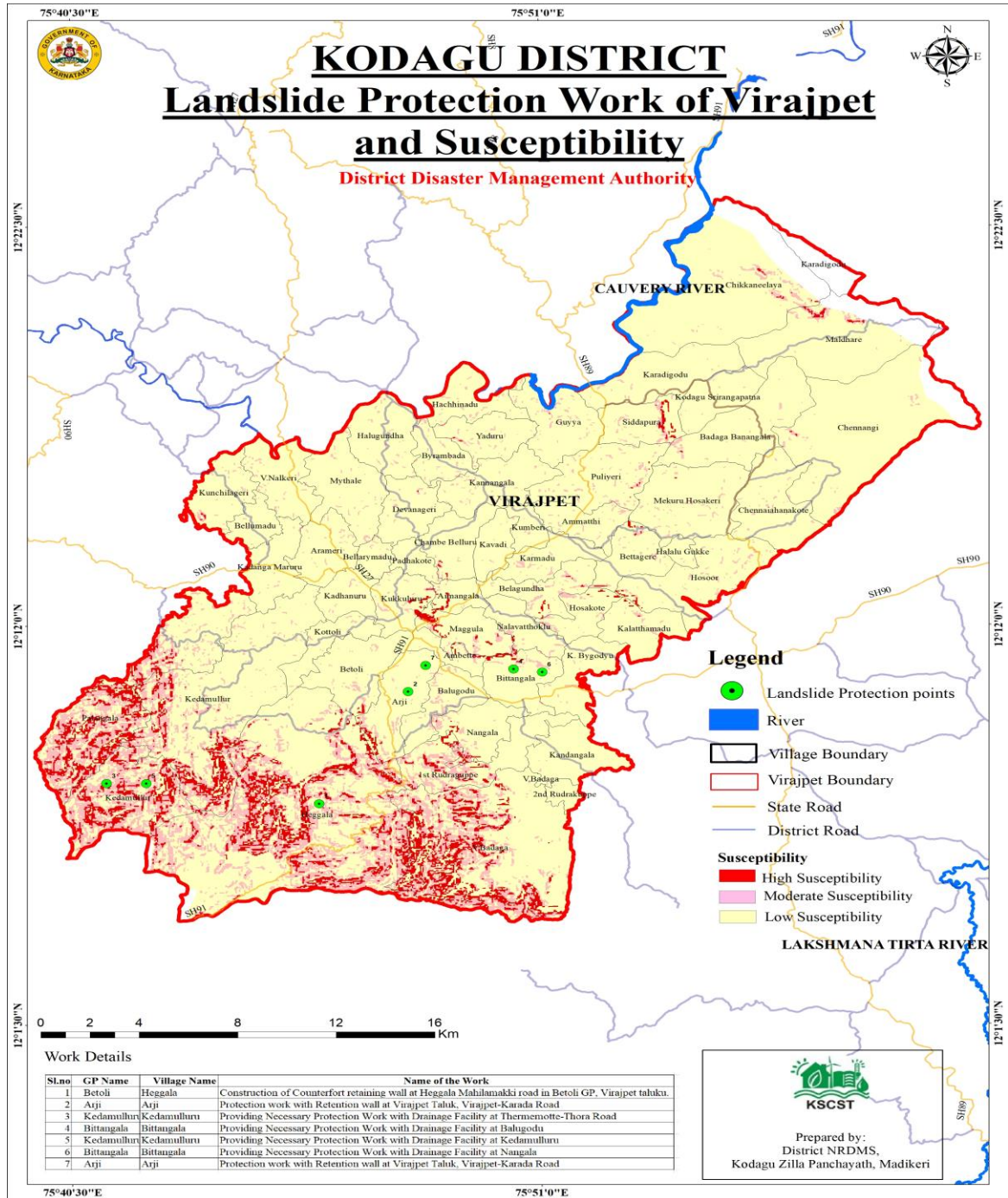


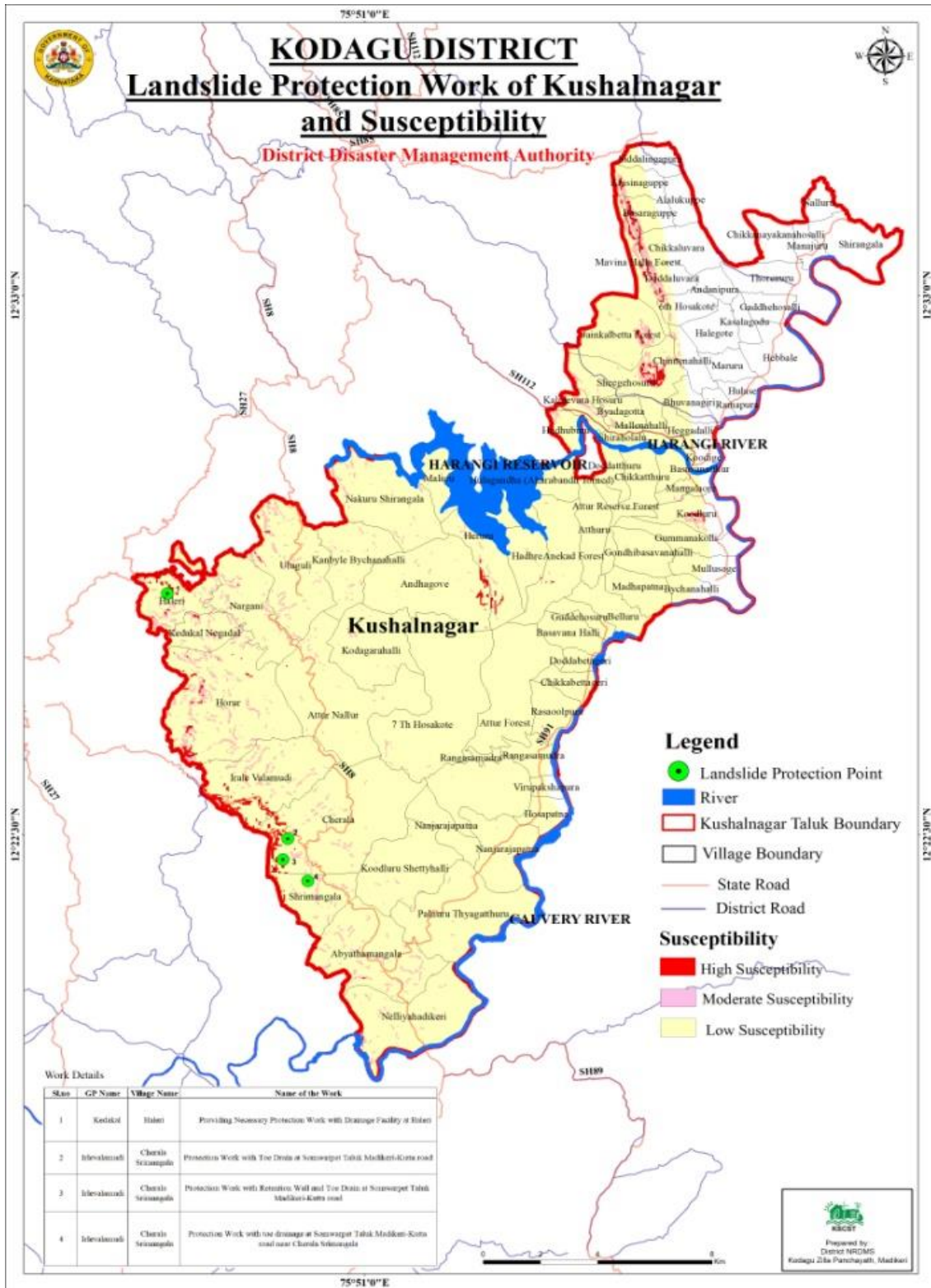
Work Details

SNo	GP Name	Village Name	Name of the Work
1	Bettadali	Kandali	Providing necessary Protection work and concrete drain to protect land sliding at Kandali nagalli road in Bettadali GP, Somwarpet taluk.
2	Bettadali	Kandali	Providing necessary Protection work and concrete drain to protect land sliding at Kandali road near Dhanase Shanthappa house in Bettadali GP, Somwarpet taluk.
3	Bettadali	Kandali	Providing necessary concrete drain to protect land sliding at Kandali village road in Bettadali GP, Somwarpet taluk.
4	Bettadali	Kandali	Providing necessary Protection work and concrete drain to protect land sliding at Kandali village near Nadhanase in Bettadali GP, Somwarpet taluk.
5	Chettali	Cheralu Srinangala	Providing necessary Protection work and concrete drain to protect land sliding at cheralu Srinangala temple road (near tank) in cheralu Srinangala village - chettali GP, Kuchalanagar taluk.
6	Thokuru Shettali	Doddathoburu	Providing necessary Protection work and concrete drain to protect land sliding at Doddathoburu village road near G S Kallapa house in Thokuru Shettali GP, Somwarpet taluk.
7	Thokuru Shettali	Doddathoburu	Providing necessary Protection work and concrete drain to protect land sliding at Doddathoburu village road near A S Hemaraj house in Thokuru Shettali GP, Somwarpet taluk.
8	Thokuru Shettali	Doddathoburu	Providing necessary Protection work to protect land sliding at Doddathoburu village main road in Thokuru Shettali GP, Somwarpet taluk.
9	Thokuru Shettali	Doddathoburu	Providing necessary Protection work and concrete drain to protect land sliding at Doddathoburu village near Chandrase house in Thokuru Shettali GP, Somwarpet taluk.
10	Thokuru Shettali	Doddathoburu	Protection Work with Retention Wall at Somwarpet Taluk Chikka Tohar doddhanasekoppa dodd tohar toharshettali road along with drainage.
11	Bettadali	Hirase	Protection Work at Somwarpet Taluk Hirase-Chettali road with toe drainage.
12	Bettadali	Kandali	Protection Work at Somwarpet Taluk Kannada Kutte - beedali-kandali road with toe drainage.
13	Idevandi	Cheralu Srinangala	Protection Work with Retention Wall at Somwarpet Taluk Madikeri-Kutta road along with toe drainage.
14	Idevandi	Cheralu Srinangala	Protection Work with Toe Drain at Somwarpet Taluk Madikeri-Kutta road.
15	Idevandi	Cheralu Srinangala	Protection Work with Retention Wall and Toe Drain at Somwarpet Taluk Madikeri-Kutta road.
16	Idevandi	Cheralu Srinangala	Protection Work with the drainage at Somwarpet Taluk Madikeri-Kutta road near Cheralu Srinangala.
17	Igocoru	Igocoru	Providing Necessary Protection Work with Drainage Facility at Igocoru.
18	Kanganduru	Kanganduru	Providing Necessary Protection Work with Drainage Facility at Kanganduru.
19	Madapara	Jambocoru	Providing Necessary Protection Work with Drainage Facility at Jambocoru.
20	Thokurshettali	Doddathoburu	Protection Work with Retention Wall at Somwarpet Taluk Chikka Tohar doddhanasekoppa dodd tohar toharshettali road along with drainage.
21	Bettadali	Hirase	Protection Work at Somwarpet Taluk Hirase-Chettali road with toe drainage.
22	Bettadali	Kandali	Protection Work at Somwarpet Taluk Kannada Kutte - beedali-kandali road with toe drainage.



○ **LANDSLIDE SUSCEPTIBILITY MAPS OF DIFFERENT TALUKS OF KODAGU**
Dept- District Disaster Management Authority

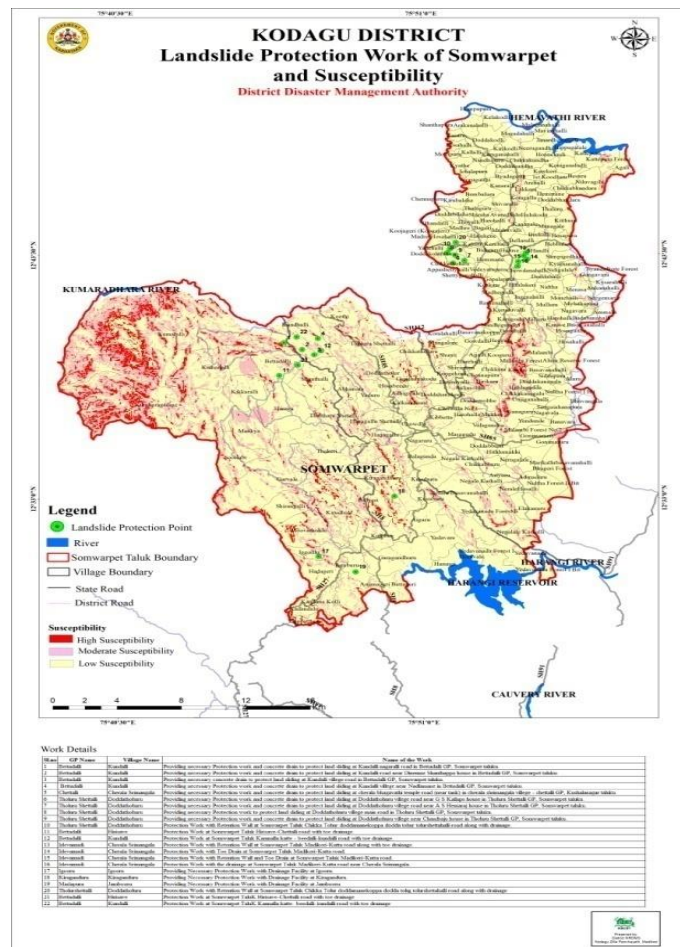




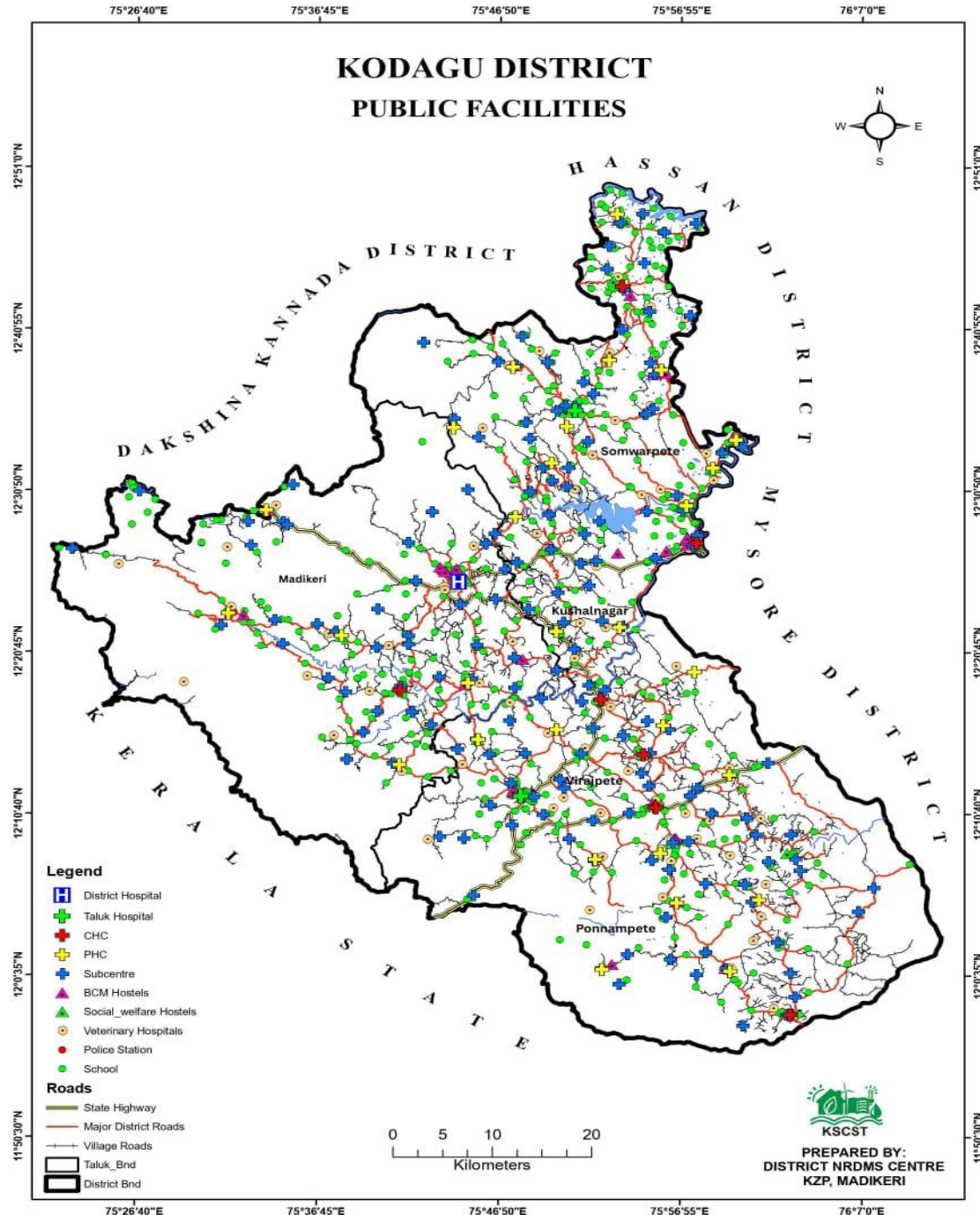
Kodagu, located in the **Western Ghats of Karnataka**, is a highly undulating and mountainous district, characterized by steep hills, valleys, and deep gorges. The district lies at an average elevation of about **900 meters above mean sea level (MSL)**, but elevation varies significantly across taluks and physiographic zones.

- **Lowest Elevations (250 – 400 m MSL):** Found mainly in the eastern parts of **Kushalnagar and Virajpet taluks**, where the land gradually slopes toward the Mysuru plains. These regions are relatively flatter and suitable for agriculture.
- **Mid-Elevations (800 – 1,200 m MSL):** Covering a large portion of **Somwarpet and Madikeri taluks**, this zone is characterized by coffee plantations, forested areas, and rolling hills. Towns like **Madikeri (around 1,152 m)** fall in this category.
- **High Elevations (1,200 – 1,740 m MSL):** Found in the **western and northwestern parts of Kodagu**, where the Western Ghats rise steeply. This includes high hills such as **Tadiandamol (1,748 m)**, the highest peak in Kodagu, and **Pushpagiri (1,712 m)**. These regions are densely forested, with heavy rainfall and numerous streams originating from them.

The elevation pattern of Kodagu influences its **climate, vegetation, hydrology, and land use**. Higher elevations receive very heavy rainfall (often exceeding 5,000 mm annually) and are prone to **landslides**, while mid-elevation areas are dominated by coffee estates and spice cultivation. The lower elevation regions serve as transitional zones between the Western Ghats and the Deccan plateau.



➤ **ASSETS MAP OF KODAGU DISTRICT**



Dept : Chief Planning Officer Planning Section (KZP,M)

Asset mapping of Kodagu district has been carried out to systematically identify, document, and visualize the distribution of key resources and infrastructure across the district. This includes mapping of **educational institutions, healthcare facilities, drinking water sources, roads, bridges, government buildings, agricultural assets, forest resources, and public**

utilities at the Gram Panchayat level. By integrating both spatial and non-spatial datasets into GIS platforms, asset mapping provides a clear picture of the availability, accessibility, and gaps in existing infrastructure. Such detailed mapping supports evidence-based planning, equitable allocation of resources, disaster preparedness, and monitoring of development programs. In Kodagu, asset mapping is particularly valuable due to its **hilly terrain, ecological sensitivity, and scattered rural settlements**, ensuring that planning interventions are need-based and sustainable

➤ **Training and other Activities**

YUKTHDAR PORTAL AND GIS

Dept - NREGA

"Yuktdhara" is a geospatial planning portal developed under the Bhuvan platform by the Indian Space Research Organisation (ISRO) and the Ministry of Rural Development and Panchayati Raj. It aims to facilitate Gram Panchayat-level planning of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) activities across India. The portal integrates satellite imagery, thematic layers, and GIS tools to support decentralized decision-making and enhance transparency in rural development planning.

Role of GIS in Yuktdhara

- **Spatial Planning:** GIS allows the visualization of village-level data, land use, water bodies, roads, forests, and other geographic features.
- **Mapping Assets:** Existing MGNREGA and other rural development assets are geotagged and stored as layers in GIS.
- **Decision Support:** Panchayat officials can use GIS-based maps to decide where new development activities like check dams, roads, or plantations should be planned.
- **Monitoring & Analysis:** GIS helps track implementation of projects and ensures resources are optimally allocated.

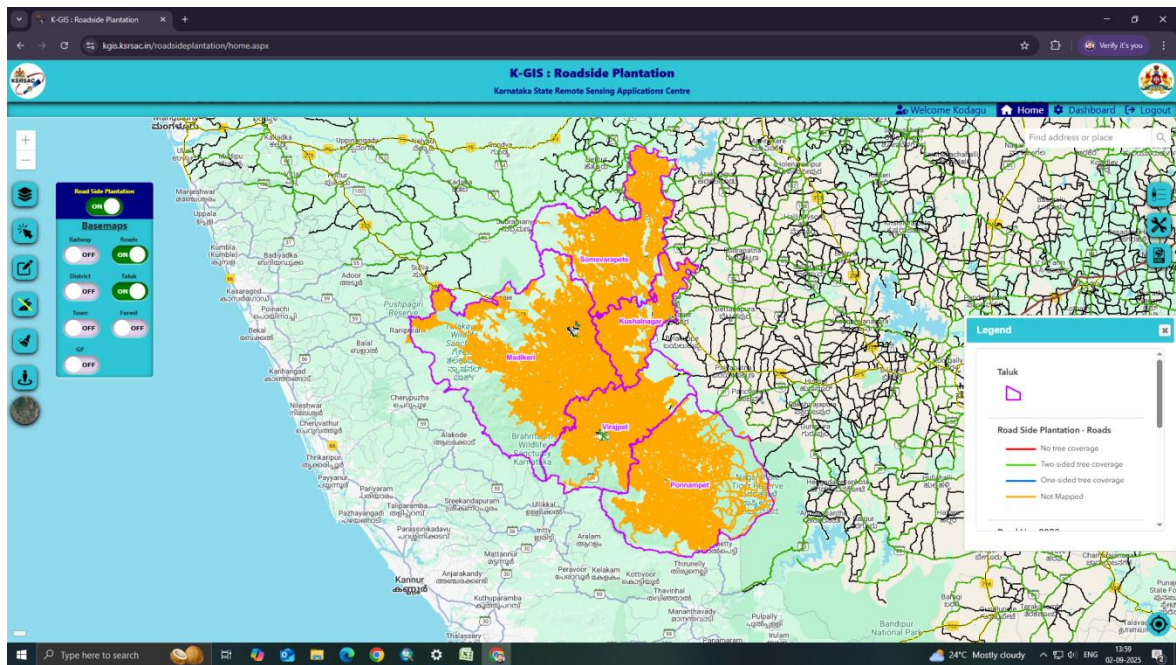
How Yuktdhara Uses GIS

- **Integration with Bhuvan:** Bhuvan is ISRO's geoportal, and Yuktdhara leverages its satellite imagery and spatial data for accurate mapping.
- **Thematic Layers:** Users can overlay different data types like soil, slope, vegetation, water resources, and infrastructure to plan interventions.
- **Interactive Maps:** Panchayat officials can draw, edit, and validate plans directly on GIS-based digital maps..

Selected Gram Panchayats in Kodagu District for Yuktdhara

1. **K. Badaga**
2. **Hoskeri**
3. **Nanjarayapatna**

Training on Roadside Plantation Using KGIS Web Portal



HELD ON : 03-5-2025 (zoom meeting)

Roadside Plantation Using KGIS Web Portal

The **Karnataka Geographic Information System (KGIS) Web Portal** is an advanced GIS platform developed to provide spatial data and tools for planning, monitoring, and decision-making. Roadside plantation, an important activity under various government schemes such as **MNREGA**, **Forest Department programs**, and **Rural Development initiatives**, can be effectively planned and monitored using this portal.

Key Uses of KGIS for Roadside Plantation:

- 1. Road Identification & Mapping**
 - The portal provides up-to-date road network maps (State Highways, Major District Roads, Gram Panchayat roads, etc.).
 - Specific stretches of roadsides can be selected for plantation activities.
- 2. Land Suitability & Buffer Analysis**
 - Using buffer tools, users can create a plantation zone (e.g., 5m – 10m buffer along both sides of the road).
 - Soil, slope, and land-use maps from KGIS can be overlaid to check the suitability for plantation.
- 3. Tree Coverage Monitoring**

- Satellite imagery and vegetation cover layers available in KGIS help to identify existing green cover.
 - Gaps along the roads can be detected for new plantation.
- 4. Planning & Implementation**
- Gram Panchayats or Zilla Panchayats can plan plantation drives by marking exact stretches digitally.
 - Coordinates can be extracted to share with field officials for ground-level implementation.
- 5. Monitoring & Progress Tracking**
- Periodic monitoring can be done using high-resolution imagery.
 - Before-and-after plantation status can be documented and reported.
- 6. Integration with Other Data**
- KGIS integrates rainfall, soil, hydrology, and administrative boundaries, which helps in selecting suitable species for plantation (native, drought-resistant, etc.).
 - It can also help in linking plantation sites with nearby water sources for maintenance.



EMPRI (Environmental Management and Policy Research Institute) Training Program at Kodagu Zilla Panchayat, Madikeri

HELD ON : 16/5/2025 at Kodagu Zilla Panchayat , Madikeri

“Keeping the environment clean and sustainable is our prime duty”

Madikeri, May 16 (Karnataka Varthe): Due to climate change, there are adverse impacts on the environment, and necessary precautions must be taken, said Kodagu Zilla Panchayat Chief Executive Officer **Anand Prakash Meena**.

He was speaking after inaugurating a district-level training program on Karnataka State Climate Change Action Plan, organized on Friday at the Zilla Panchayat office in collaboration with the Institute for Environment Management and Policy Research and the Karnataka State Council for Science and Technology.

“It is our prime duty to keep our environment clean and sustainable. Our ancestors gave us a beautiful environment, and it is our responsibility to preserve it. All departmental officers must give priority to environmental conservation,” he emphasized.

Dr. B. Sarita, Senior Consultant of the Institute for Environment Management and Policy Research, said that such training programs are being conducted in all districts of the state, with greater focus on environmental conservation and sustainable development.

As part of the training, resource person M.A. Latha explained the key aspects of climate change.

Another resource person, Dr. M. Manjunath, Assistant Professor at Ponnampete Forestry University, spoke about the opportunities available in Kodagu with regard to carbon credits.

Inchara, Project Associate of the ZP-NRDMS section, and officers from various departments were present.

➤ **One-Day State Level Workshop on "Geospatial Applications for District Level Planning" held on April 28, 2025 at IISC Bangalore**

One-Day State Level Workshop on *“Geospatial Applications for District Level Planning”*

A State Level Workshop on Geospatial Applications for District Level Planning was organized on April 28, 2025, at the Indian Institute of Science (IISc), Bengaluru. The workshop brought together representatives from various district administrations, NRDMS centres, state planning departments, academic institutions, and technical experts to discuss the role of geospatial technologies in effective planning and decision-making. The sessions highlighted how tools such as Remote Sensing, GIS, GPS, and Web-based platforms (like K-GIS and Yuktdhara) can be utilized for preparing district-level action plans, resource management, infrastructure mapping, and disaster risk reduction.

The inaugural session emphasized the need for integrating spatial and non-spatial data into district planning to ensure evidence-based governance. Technical experts from IISc and other institutions demonstrated applications in land use planning, natural resource management, rural development, climate resilience, and infrastructure monitoring. Case studies from districts were also presented, showcasing how geospatial data has helped in identifying gaps, prioritizing development projects, and improving monitoring mechanisms.

The workshop served as a platform for knowledge exchange, enabling district officials and planners to adopt innovative methods for sustainable and inclusive development. It concluded with a call for strengthening capacity-building programs and ensuring wider accessibility of geospatial datasets at the grassroots level

Conclusion 4

The activities undertaken by the NRDMS Centre, Kodagu Zilla Panchayat, Madikeri, during April–July 2025 reflect a strong commitment towards the integration of geospatial technologies in district-level planning and development. Through the preparation of thematic maps, data analysis, and capacity-building initiatives, the centre has supported evidence-based decision-making across departments. Mapping exercises such as the Human Development Index (HDI) analysis, Cauvery River buffer delineation, flood susceptibility assessment, landslide vulnerability mapping, and landslide protection wall documentation have provided valuable insights into both developmental strengths and vulnerabilities of the district. Additionally, the use of portals like Yuktdhara and KGIS has created new opportunities for decentralized and participatory planning at the Gram Panchayat level.

The training programs organized during this period, including those on climate change adaptation, roadside plantation using KGIS, and geospatial applications for district planning, have brought together stakeholders from diverse departments, enhancing their understanding of spatial data and applications. These initiatives have demonstrated the importance of linking scientific research with grassroots governance, ensuring that developmental interventions are both sustainable and inclusive. Kodagu's unique topography, ecological sensitivity, and socio-economic diversity highlight the necessity of continuous integration of geospatial tools for planning, disaster risk reduction, environmental conservation, and infrastructure development.

While significant progress has been made, the findings from the mapping and analytical exercises underline persistent challenges. Maternal healthcare gaps, housing shortages, unequal access to clean drinking water, energy limitations, and recurring natural hazards such as landslides and floods remain pressing issues. The NRDMS Centre recognizes that these gaps can only be addressed through multi-sectoral collaboration, improved datasets, and stronger monitoring frameworks. In this regard, the centre reaffirms its commitment to expanding its scope of work and strengthening partnerships with line departments, research institutions, and local self-governments.

Moving forward, the commitment of NRDMS Kodagu will focus on the following priority areas:

1. Enhanced Data Integration and Accessibility
 - Develop a comprehensive District Spatial Data Repository integrating socio-economic, environmental, and infrastructure datasets.
 - Promote interoperability of data among departments through standard formats and web-based GIS platforms.
 - Strengthen public access to geospatial information, encouraging transparency and citizen participation in development processes.
2. Advanced Mapping and Analytical Tools

- Expand mapping activities to include climate vulnerability assessments, biodiversity mapping, groundwater potential zones, and renewable energy suitability studies.
 - Adopt advanced technologies like high-resolution satellite imagery, UAV/drone surveys, and AI-based geospatial analytics to improve accuracy and timeliness.
 - Regularly update thematic maps to reflect changing ground realities, enabling dynamic planning and disaster preparedness.
3. Capacity Building and Training
- Organize regular workshops and hands-on training sessions for district officials, Gram Panchayat staff, and field workers to build their GIS skills.
 - Collaborate with institutions such as IISc, ISRO, EMPRI, and Karnataka State Council for Science & Technology to introduce cutting-edge geospatial techniques.
 - Create a pool of local GIS champions within departments to ensure sustainability and continuous usage of tools.
4. Disaster Risk Reduction and Environmental Management
- Strengthen geospatial support for the District Disaster Management Authority (DDMA) by updating hazard maps and integrating early warning systems.
 - Promote landslide mitigation, flood control, and river buffer management using scientific approaches.
 - Support environmental conservation initiatives, including afforestation, soil conservation, and carbon credit opportunities, through spatial planning.
5. Sustainable Development and Grassroots Planning
- Use portals like Yuktdhara for participatory planning under MGNREGA and other rural development schemes, ensuring equitable distribution of resources.
 - Integrate geospatial data into District Development Plans and Human Development Reports, linking local planning with Sustainable Development Goals (SDGs).
 - Focus on reducing inter-taluk disparities by identifying vulnerable regions and directing targeted interventions.
6. Monitoring, Evaluation, and Reporting
- Establish a robust GIS-based monitoring system for ongoing development projects, enabling real-time evaluation and accountability.
 - Publish quarterly thematic reports on developmental indicators and hazard management for use by decision-makers.
 - Leverage mobile and web applications to crowdsource data and feedback from communities, strengthening citizen engagement.