

NATURAL RESOURCES DATA MANAGEMENT SYSTEM (NRDMS)

***MONTHLY ACTIVITY REPORT
April - July 2025***

***Submitted by
District NRDMS Centre
Zilla Panchayat, Belagavi***



***Submitted to
Karnataka State Council for
Science and Technology (KSCST)
Indian Institute of Science Campus,
Bengaluru – 560012***

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NRDMS Technical Activity Report of Belagavi District (April to July 2025)

Basic Information of the District

- 1) District Name: Belagavi
- 2) Division: Belagavi
- 3) Belagavi NRDMS Establishment
Year: 1994-1995
- 4) Headquarters: Belagavi

Current CEO (Chief Executive Officer, Zilla Panchayath): Rahul Shinde, IAS

Current CPO (Chief Planning Officer): Gangadhar Divatar

NRDMS Background of the District

The NRDMS project was initiated in Belgaum District in 1995 with the active support of the District Administration and the Karnataka State Council for Science & Technology as the implementing agency. The primary objective of this Programme is to provide a basic framework for local-level integrated planning at the district and taluka levels through the use of modern scientific tools such as Geographic Information Systems (GIS). The idea is to empower local bodies of governance in devising strategies for optimizing the use of available natural resources to bring about integrated development of the region, thereby improving the socio-economic condition of the local population. The NRDMS Centre in the district works in close coordination with the District Administration to meet their

requirements for resource management and decision-making in law and order. The Centre has successfully executed several applications to meet the needs of the district administration. Some significant applications demonstrated at the Centre include the following:

1. Constituency mapping for general elections
2. Water resources mapping like Water supply, Water quality, Groundwater, Surface water related works
3. VIS (Village information system)
5. NRM Works (Ridge to valley Mapping) MGNREGA
6. Road network mapping and Route plan
7. Facilities mapping like education, health, etc...

Geographical Features

Belagavi, the largest district of Karnataka, lies in the north-western part of the state between 15°23'N–16°58'N latitudes and 74°05'E–75°28'E longitudes, covering an area of about 13,415 sq. km. It is bounded by Vijayapur, Bagalkot and Gadag districts to the east, Dharwad and Uttara Kannada to the south, and by Goa and Maharashtra (Kolhapur, Sindhudurg) on the west and north. The district experiences diverse climatic conditions, ranging from semi-arid in the east to humid in the Western Ghats. Average annual rainfall is around 1,200 mm, varying from less than 600 mm in the plains to more than 2,500 mm in the Ghats. Temperature ranges between 9°C in winters and 38°C in summers. Belagavi is drained by the Krishna River and tributaries like Ghataprabha, Malaprabha, Vedganga, Dudhganga, and Hiranyakeshi. Reservoirs such as Hidkal, Rakaskop, and Navilatirtha provide irrigation and drinking water. Groundwater occurs mainly in weathered basalt and alluvial tracts. The terrain includes the high Western Ghats, undulating plateaus, and fertile plains. Geomorphologically, the district features basaltic lava flows, lateritic uplands, and deeply incised river valleys. Soils range from red loamy and lateritic in the Ghats to fertile black cotton soils in the plains. Belagavi falls under the Northern Transition Zone and the Hilly Zone, supporting crops such as sugarcane, jowar, rice, and horticulture.

Forests cover about one-fifth of the district, comprising semi-evergreen, moist deciduous, and dry deciduous types. These forests host valuable biodiversity and act as vital watersheds.

NRDMS Spatial and Non-spatial Data available in District NRDMS Centre

DATABASE STATUS FOR THE YEAR-2025 Belagavi District

Status Code : Meaning

CC : Computerised.
 ND : Not Digitized
 NA : Not Procured
 NR : Not Relevant
 NF : Not Finalised

Name : **OMKAR KORI**
 Name of the District Centre : NRDMS,BELAGAVI
Database status as on date : **21/06/2025**
Year of Establishment :

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	Provided by KSCST		District	NA	SHP
Slope Map		Provided by KSCST	Can be generated			
2. Geology – A						
Rock features	1:50,000	Provided by KSCST	NA	District	CC	SHP
Structural features	NA	Provided by KSCST	NA	NA	NA	NA
3. Geology – B						

Rock features	1:50,000	MGD	NA	District	CC	SHP
Structural features	1:50,000	Provided by KSCST	NA	District	CC	SHP
4.Mineral Resources (Litho)	1:50,000	Provided by KSCST	NA	District	CC	SHP
5. Geomorphology	1:50,000	Provided by KSCST	NA	District	CC	SHP
6. Land use	1:50,000	Provided by KSCST	NA	District	CC	SHP
7. Waste Lands	1:50,000	Provided by KSCST	NA	District	CC	SHP
8. Soils	1:50,000	Provided by KSCST	NA	District	CC	SHP
9. Forest & Wildlife						
Forest type	NA	Provided by KSCST	NA	NA	NA	NA
Crown Density	NA	NA	NA	NA	NA	NA
Forest Category	NA	NA	NA	NA	NA	NA
Forest admn.	NA	SOI	NA	NA	NA	NA
Wild Life	NA	NA	NA	NA	NA	NA
Water						CC
1.Ground water						CC
Hydro Geology	1:50,000	Provided by KSCST	NA	District	CC	SHP
Hydro chemistry	NA	NA	NA	NA	NA	NA
Ground water budget	NA	NA	NA	NA	NA	NA
2.Surface water						CC

Drainage	1:50,000	Provided by KSCST	NA	NA	NA	NA
Surface water bodies	NA	Provided by KSCST	NA	NA	NA	NA
3.Climate	NA	NA	NA	NA	NA	NA

Sector / Subsector	Scale	Source	Survey / Publn. Year	Area covered	Status Code	File Format
2.Demography						
Population						
Tehsil boundary	1:50,000	Provided by KSCST	2020	District	CC	SHP
District boundary	1:50,000	Provided by KSCST	2020	District	CC	SHP
Current popln. distbn.	NA	NA	NA	NA	NA	NA
Literacy						
Levels of education	NA	NA	NA	NA	NA	NA
Occupation						
Village boundary	NA	NA	NA	NA	NA	NA
Employment						
District scenario	NA	NA	NA	NA	NA	NA
Employment exchange	NA	NA	NA	NA	NA	NA
Assets & Expenditure	NA	NA	NA	NA	NA	NA
Migration	NA	NA	NA	NA	NA	NA
Destitutes	NA	NA	NA	NA	NA	NA

3.Socio Economy						File Forma t
Industry	NA	Major Industrie s	NA	NA	NA	NA
Developmental activity	NA	NA	NA	NA	NA	NA
4.Agro Economy						
Land Utilisation						NA
Private Land	NA	NA	NA	NA	NA	NA
Common property	NA	NA	NA	NA	NA	NA
Land Ownership pattern						NA
General scenario	NA	NA	NA	NA	NA	NA
Farmer's holdings	NA	NA	NA	NA	NA	NA
Principal crops	NA	NA	NA	NA	NA	NA
Irrigation						
<i>Minor irrigation</i>						
Canals	NA	Provided by KSCST	NA	NA	NA	NA
Tube wells	NA	Observat ion well DGD	NA	District	CC	SHP
Dug wells	NA	DLR & SS	NA	NA	NA	NA
Tanks	NA	Provided by KSCST	NA	District	CC	SHP
Lift irrigation	NA	NA	NA	NA	NA	NA
<i>Major irrigation</i>						
Reservoirs	NA	Provided by KSCST	NA	Taluk	CC	SHP
Anicuts	NA	NA	NA	NA	NA	NA

Agricultural implements	NA	NA	NA	NA	NA	NA
Animal husbandry	NA	Animal husbandry	NA	NA	NA	NA
Pisciculture	NA	NA	NA	NA	NA	NA
Plantation	NA	NA	NA	NA	NA	NA

Sector / Subsector	Scale	Source	Survey / Publn. Year	Area covered	Status Code	File Format
5.Infrastructure						
Communications						
Post offices	NA	NA	NA	NA	NA	NA
Telecommunication	NA	NA	NA	NA	NA	NA
Drinking water	NA	NA	NA	NA	NA	NA
Educational facilities	NA	Provided by KSCST	NA	NA	NA	NA
Electricity	NA	NA	NA	NA	NA	NA
Financial institutions	NA	NA	NA	NA	NA	NA
Markets	NA	NA	NA	NA	NA	NA
Health	NA	Health department	NA	NA	NA	NA
NGO's	NA	NA	NA	NA	NA	NA
Tourism	NA	NA	NA	NA	NA	NA
Transport	NA	Provided by KSCST	NA	NA	NA	NA
6.Miscellaneous						

District map with taluks	1" =... miles	Provided by KSCST	NA	District & Taluk	CC	SHP
District & taluk boundaries	1:50,000	Provided by KSCST	NA	District & Taluk	CC	SHP
District map with hoblies	1: =.. miles	Provided by KSCST	NA	District & Taluk	CC	SHP
Village boundary with settlement	1:50,000	Provided by KSCST	NA	Village Boundary	CC	SHP
Police station details	NA	Provided by Police Dept	NA	NA	NA	NA
Details on Assembly constituencies	1:50,000	Provided by KSCST	NA	Distict	CC	SHP
Gram Panchayhs & Zilla Panchayaths, its jurisdiction for all taluks	1:50,000	Provided by KSCST	NA	Taluks	CC	SHP

Non-Spatial Database

Sector / Subsector	Source	Survey / Publn. Year	Area covered	Status Code	File Format
1. Natural Resources					
<i>Land</i>					
1. Topography					
Contour	Provide d by KSCST		District	CC	Attribute with shape file
Slope	Provide d by KSCST	Can be generated			
2. Geology – A					
Rock Features	Provide d by KSCST	NA	District	CC	Attribute with shape file
Structural features	Provide d by KSCST	NA	District	NA	Attribute with shape file
3. Geology – B					
Rock features	Provide d by KSCST	NA	District	NA	Attribute with shape file
Structural features	Provide d by KSCST	NA	District	NA	Attribute with shape file

4. Mineral Resources	Provided by KSCST	NA	District	NA	Attribute with shape file
5. Geomorphology	Provided by KSCST	NA	District	NA	Attribute with shape file
6. Land use	Provided by KSCST	NA	District	CC	Attribute with shape file
7. Waste Lands	Provided by KSCST	NA	District	NA	Attribute with shape file
8. Soils	Provided by KSCST	NA	District	NA	Attribute with shape file
9. Forest & Wildlife					
Forest type	Provided by KSCST	NA	NA	NA	Attribute with shape file
Crown Density	Provided by KSCST	NA	NA	NA	NA
Forest Category	NA	NA	NA	NA	NA
Forest admn.	NA	NA	NA	NA	NA
Wild Life	NA	NA	NA	NA	NA
Water					
Ground water					
Hydro Geology	NA	NA	NA	NA	NA
Hydro chemistry	NA	NA	NA	NA	NA

Ground water budget	NA	NA	NA	NA	NA
Surface water					
Drainage	NA	NA	NA	NA	NA
Surface water bodies	NA	NA	NA	NA	NA
Climate	NA	NA	NA	NA	NA

2. Demography					File Format
Population					
Tehsil boundary	Provided by KSCST	NA	Disrtict	CC	Attribute with shape file
District boundary	Provided by KSCST	NA	District	CC	Attribute with shape file
Current popln. distbn.	Provided by KSCST	NA	NA	NA	NA
Literacy					File Format
Levels of education	Provided by KSCST	NA	NA	NA	Attribute with shape file
Occupation					
Village boundary	Provided by KSCST	NA	NA	NA	Attribute with shape file
Employment					
District scenatio	NA	NA	NA	NA	NA
Employment exchange	NA	NA	NA	NA	NA
Assets & Expenditure		NA	NA	NA	NA
Migration		NA	NA	NA	NA

Destitutes		NA	NA	NA	NA
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3. Socio Economy					File Format
Industry	DIC	NA	NA	NA	NA
Developmental activity	NA	NA	NA	NA	NA

4. Agro Economy					File Format
Land Utilisation					
Private Land	NA	NA	NA	NA	NA
Common property	NA	NA	NA	NA	NA
Land Ownership pattern					
General scenario	NA	NA	NA	NA	NA
Farmer's holdings	NA	NA	NA	NA	NA
Principal crops	NA	NA	NA	NA	NA
Irrigation					
<i>Minor irrigation</i>					
Canals	Provided by KSCST	NA	District	CC	Attribute with shape file
Tube wells	Provided by KSCST	NA	District	CC	Attribute with shape file
Dug wells	NA	NA	NA	NA	NA
Tanks	Provided by KSCST	NA	District	CC	Attribute with shape file
Lift irrigation	NA	NA	NA	NA	NA
<i>Major irrigation</i>					
Reservoirs	Provided by KSCST	NA	NA	NA	Attribute with shape file

Anicuts	NA	NA	NA	NA	NA
Agricultural implements	NA	NA	NA	NA	NA
Animal husbandry	NA	NA	NA	NA	NA
Pisciculture	NA	NA	NA	NA	NA
Plantation	NA	NA	NA	NA	NA
Horticulture	NA	NA	NA	NA	NA
Sericulture	NA	NA	NA	NA	NA

Sector / Subsector	Source	Survey / Publn. Year	Area covered	Status Code	File Format
5. Infrastructure					
Communications					
Post offices	NA	NA	NA	NA	NA
Telecommunication	NA	NA	NA	NA	NA
Drinking water	ZPE	NA	District	NA	NA
Educational facilities	Provided by KSCST	NA	District	NA	Attribute with shape file
Electricity	NA	NA	NA	NA	NA
Financial institutions	NA	NA	NA	NA	NA
Markets	NA	NA	NA	NA	NA
Health	DHO	NA	District	CC	Attribute with shape file
NGO's	NA	NA	NA	NA	NA
Tourism	NA	NA	NA	NA	NA
Transport					
Roads	Provided by KSCST	NA	District	NA	Attribute with shape file

Rail network	Provided by KSCST	NA	NA	NA	Attribute with shape file
Air transport/HELIPAD	NA	NA	NA	NA	NA
Vehicle census	NA	NA	NA	NA	NA
Inland & coastal waterways	NA	NA	NA	NA	NA
Veterinary services					
Veterinary facilities	Animal husbandry	NA	District	NA	Attribute with shape file
Other veterinary serv.	NA	NA	NA	NA	NA
Incidence of diseases	NA	NA	NA	NA	NA
Anganwadi	NA	NA	NA	NA	NA

Sector / Subsector	Source	Survey / Publn. Year	Area covered	Status Code	File Format
6. Miscellaneous					
Administration	Provided by KSCST	NA	NA	NA	NA
Dt. &Subdivsns.	Provided by KSCST	NA	NA	NA	NA
Dt., with tehsils	Provided by KSCST	NA	NA	NA	NA
Dt., with panchayat	Provided by KSCST	NA	NA	NA	NA
Tq., with census vil.	Provided by Police Dept	NA	NA	NA	NA

Prices & wages	NA	NA	NA	NA	NA
Environment	NA	NA	NA	NA	NA

NRDMS Centre Activities (April 2025 - July 2025)

April-2025

On the direction of Honorable CEO Sir (Chief Executive Officer Zilla panchayath Belagavi) maps are prepared for NRM works of MGNREGA . The utilization of these maps for prioritizing works on scientific bases, including preferred GIS Thematic maps. NRDMS Covered Chikkodi taluka GP's those are Kerur , Nainlaz, Nagaral, Kothali during the month of April – 2025 (Date:10-09-2025)

Technical explanation for Ridge to Valley Works

Watershed is divided into three broad areas

- 1) Ridge Area
- 2) On farm mostly Arable area
- 3) Drainage area

For village wise planning land can be divided into three zones

- 1) **First priority zone** : If this zone having the Ridge part(Because all village boundary does not have high ridge point), it covers trenching works and Drainage area is having first order streams mostly second order also, in this area bolder checks, vegetative checks etc.. are suitable, because volume of water is less (velocity is defer on the bases of slope).
- 2) **Second priority zone** : In this zone mostly covers Arable area and Drainage area. In Arable area agricultural bunds like Lateral bunds, Side bunds and supplement bund are covered and in drainage area covers the small check dams these can build for check the water flow.
- 3) **Third priority zone**: In this zone mostly covers Arable area and Drainage area. In Arable area, agricultural bunds like Lateral bunds, Side bunds and supplement

bund are covered and large check dams are built in Drainage area with all land suitability.

Using this kind of plan gives us collective benefits like Groundwater recharge, Reducing soil erosion, proper vegetation cover.

(The Example Maps Are attached in the Annexures 1)

May-2025

- 1) On the direction of Honorable CEO Sir (Chief Executive Officer Zilla panchayath Belagavi) maps are prepared for NRM works of MGNREGA . The utilization of these maps for prioritizing works on scientific bases, including preferred GIS Thematic maps. NRDMS Covered Chikkodi taluka GP's those are Kerur , Nainlaz, Nagaral, Kothali during the month of May – 2025 (the technical explanation for this give in the April repot) this is the on going work
- 2) Honorable DC Sir (Deputy Commissioner Belagavi), working on the formation of New Revenue Villages. (Hosa Kandaya Grama) For this process Honorable DC Sir given the directions to NRDMS Belagavi center to prepare Geo rectified High Resolution Satellite image maps and map should contain, Demarcation of clusters more than 50 hoses. cluster has to identify using High resolution NCC (Natural color composite) images

Technical explanation for New Revenue Village Mapping

Geo rectified NCC (Natural color composite) High Resolution Satellite images are download from open sources. Using Arcgis 10.1 Software the thematic layers like Habitation area layer, Habitation location layers are overlayed on NCC (Natural color composite) High Resolution Satellite images for demarcating the area of clusters containing more than 50 houses. This will help ground level officers to identify the cluster easily. Village wise maps are prepared with High resolution still now Athani taluak villages, Nippani taluka villages, Kagawad taluka Villages,

Chikkodi Taluka Villages, Raibag taluaka Villages, Bealagavi Taluka villages
Hukkeri Taluka Village are prepared this ongoing work (Date:10/09/2025 from April
to July)

June -2025

Breff History of the work

The Kittur uprising began in 1824 under the leadership of Rani Chennamma of Kittur against the British. In 1829–30, Sangolli Rayanna, the army chief of Kittur, continued the struggle against the British after Rani Chennamma was imprisoned. With the support of loyal followers and local peasants, he led guerilla warfare against the British forces.

Sangolli Rayanna gathered fighters from different villages and formed a strong rebel army. With nearly 5,000 men, he attacked British camps, destroyed their establishments, and became a major obstacle to British rule in the region. Sangolli Rayanna, along with his men, bravely resisted the British by adopting guerilla war tactics, moving from forests to villages, and waging constant battles.

Later, he was captured through betrayal by local chieftains and was executed by hanging in 1831 at Nandagad near Belagavi. His martyrdom made him a great hero.

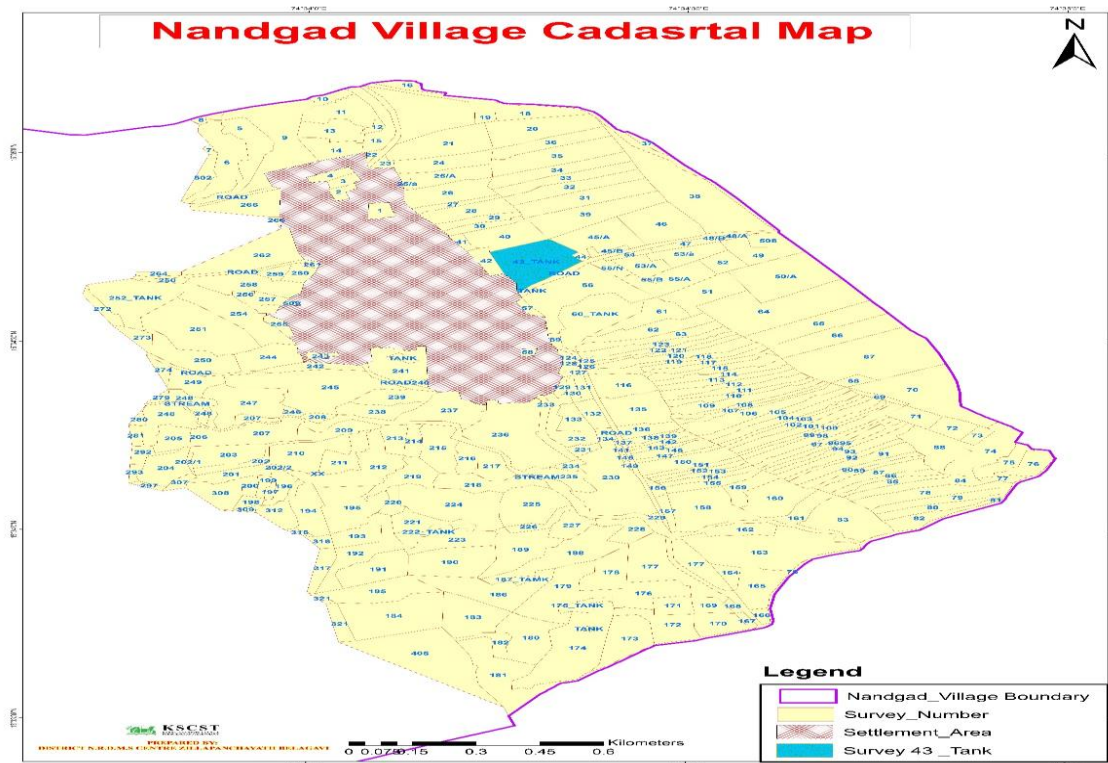
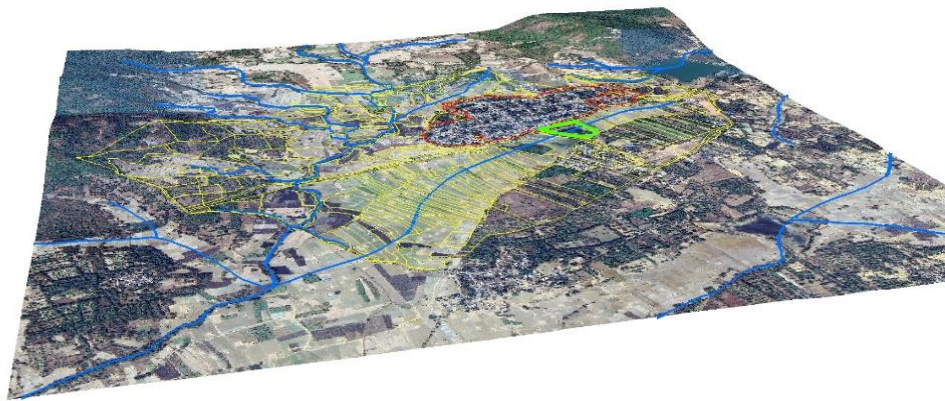
The Kittur rebellion is remembered as the **first major armed struggle against British rule in Karnataka** and holds an important place in India's freedom history.

Nandgad is the place in Khanapur taluka of Belagavi district where there is a “**Sangolli Rayanna's Kere**” in Nandaga village. This Tank (Kere) is got effected by polluted water which comes from Nandag village. for this reason Honorable CEO Sir (Chief Executive Officer Zilla panchayath Belagavi) given directions to NRDMS to prepare technical report with the RWS Department.

Technical explanation For Nandagad Tank Report

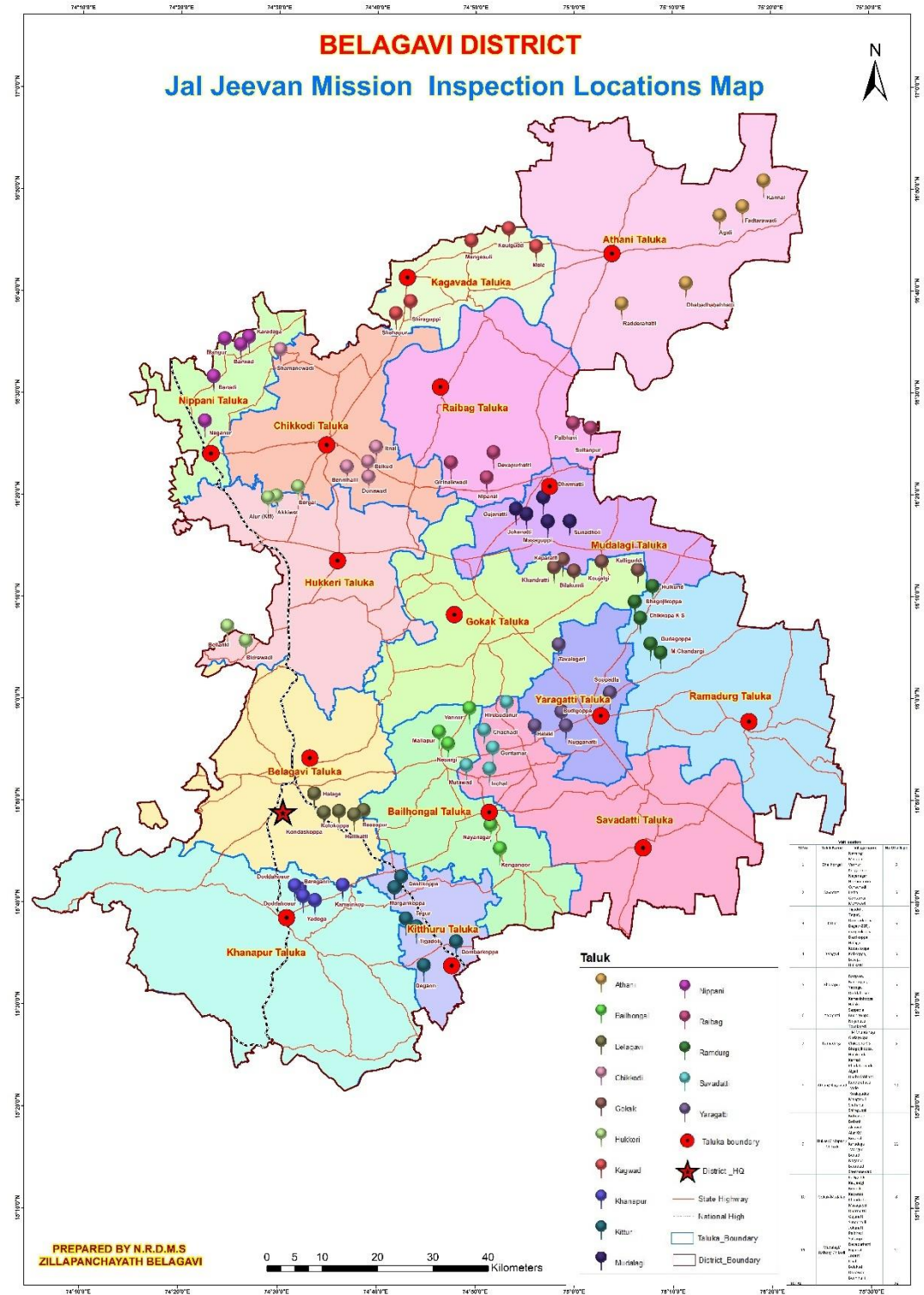
- 1) NRDMS and RWS Department visit the Nandagad Village And collected the primary source of information. Like
 - GPS Coordinates
 - Geo tagged Photos
- 2) Geo rectified satellite images are downloaded for Nandagad Village.
- 3) Using Arcgis 10.1 Software overlay drainage thematic layer, cadastral thematic layer on satellite image and demarked watershed area.
- 4) Prepared DEM (Digital elevation model) to know the direction of Drainage flow and Slope.

- 5) With the help of drainage flow and slope the new line for Gray water flow is suggested.
- 1) Honorable DC Sir (Deputy Commissioner Belagavi), working on the formation of New Revenue Villages. (Hosa Kandaya Grama) For this process Honorable DC Sir given the directions to NRDMS Belagavi center to prepare Geo rectified High Resolution Satellite image maps and map should contain, Demarcation of clusters more than 50 hoses. cluster has to identify using High resolution NCC (Natural color composite) images .



July-2025

On the direction of Honorable CEO Sir (Chief Executive Officer Zilla panchayath Belagavi) JJM inspection route plan is prepared



Training Programmes Attended

- 1) One day training program is conducted by EMPRI on the Date of 23rd of April 2025 the training broadly covered
 - Environmental research and policy studies.
 - Training programs for officials, industries, and communities.
 - Awareness campaigns on environmental conservation.
 - Support for environmental governance and decision
- 2) One day training program is conducted by KSCST on the Date of 28th of April 2025 training broadly covered
 - Utilization of GIS Technology for government works like Planning, monitoring, and analysis
 - How Remote sensing technology is used for time series data analysis
 - Development and usage of Geospatial technology in e commerce
- 3) One day training program is conducted by KRSRAC on the Date of 9th of May 2025
On (Mapping of Road Side Plantation)

This training cover road side plantation mapping using GIS Web application developed by KRSRAC

This application is web based, which covers the road side plantation made by Forest Department of Karnataka. The application categorized the plantation in to three categories. Those are 1) single side road plantation 2) Double side road plantation 3) Plantation is not covered

Training Imparted to Line Departments

- 1) The NRDMS conducted training program road side plantation mapping using GIS Web application developed by KRSRAC. Which covers the road side plantation made by Forest Department of Karnataka. The application categorized the plantation in to three categories. Those are 1) single side road plantation 2) Double side road plantation 3) Plantation is not covered
- 2) On the directions of Honorable Deputy commissioner (D C Sir), Geospatial technology training is conducted for newly selected Village accountants. in this

training we covered Fundamentals of GIS (applications of geospatial technology) with respect to nature of work carried out by village accountants. Village Accountants are primary data provider from the village level. Their role of job needs GIS technology for to make data collection more specific and accurate. In flood situation, in heavy rain fall (damaged house survey), in crop cutting survey, in all kinds of election The GIS technology play very vital role. The NRDMS Center covered the whole concept and trained them to handle the “Google earth pro software” it is open source and village accountants are frequently use GPS technology for various application provided by Govt. of Karnataka and Govt. of India in this we covered how GPS technology works collaboration with other technology like

- 3) internet and photographic technology (The training photographs are attached to the Annexures __.)

Science Outreach Activities

No Science outreach activity is carried out by the during this period of April – July 2025

Conclusion

❖ Summary of Activities and Key Findings

NRDMS Belagavi center working on the short-term projects and long-term projects depend on the requirement on District administration. NRDMS doing services with support of district administration. Honorable CEO Sir (Chief Executive Officer Zilla panchayath Belagavi) and Honorable Deputy commissioner Belagavi (D C Sir) utilizing the data base from NRDMS to execute the work more effectively and scientifically and NRDMS providing those data.

❖ Commitment to Improve NRDMS Activities:

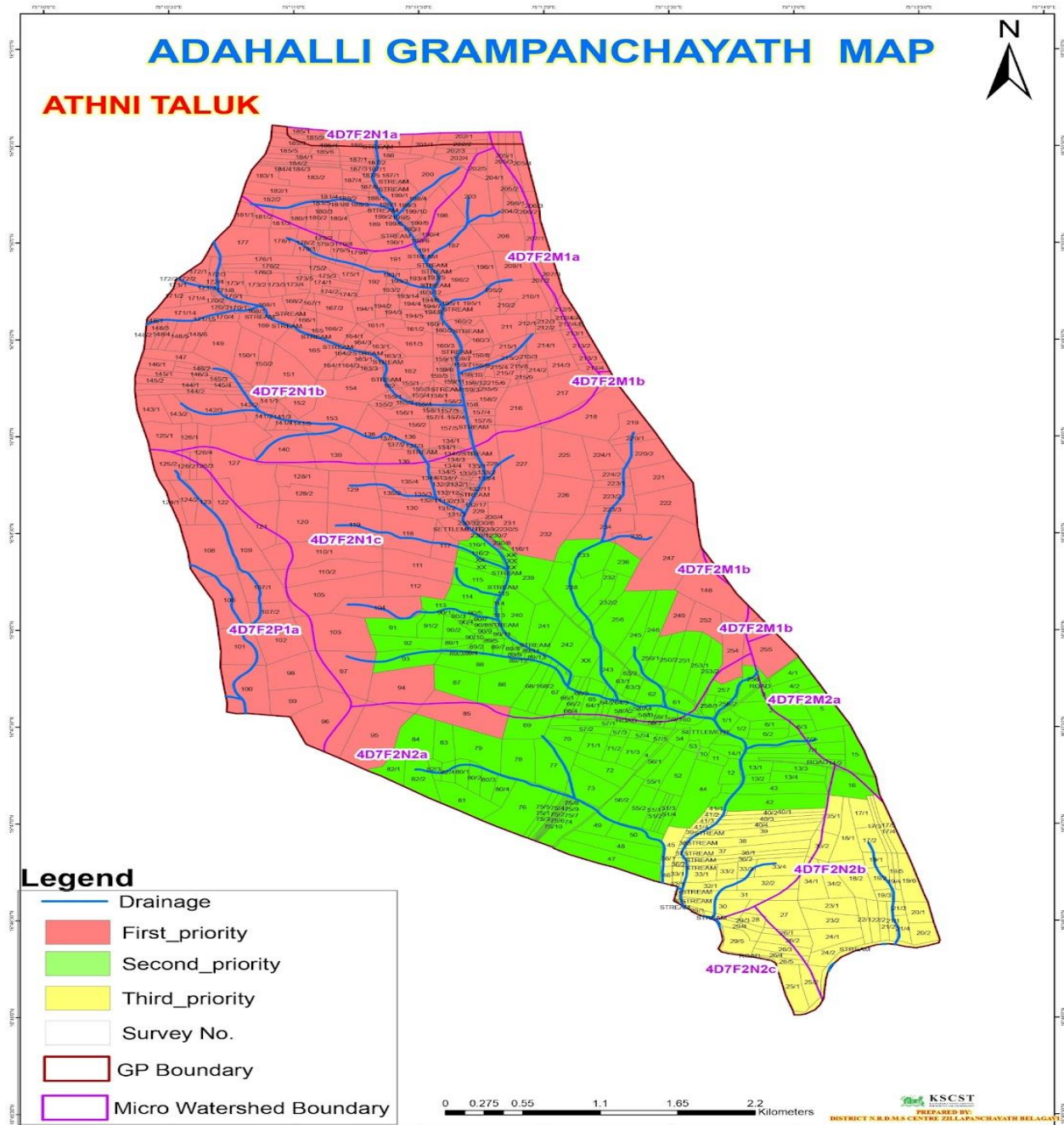
In the upcoming period, NRDMS is committed to **enhancing its activities** by strengthening geospatial data management, improving real-time data accessibility for decision-making, and expanding technical support to various departments. Focus will also be given to **digital integration of datasets, advanced GIS applications, and district-level planning support** to ensure faster, evidence-based governance.

A major area of emphasis will be on **skill development**, where the Karnataka State Council for Science and Technology (KSCST) will play a crucial role. Through specialized training programs, hands-on capacity building, and knowledge-sharing initiatives, NRDMS

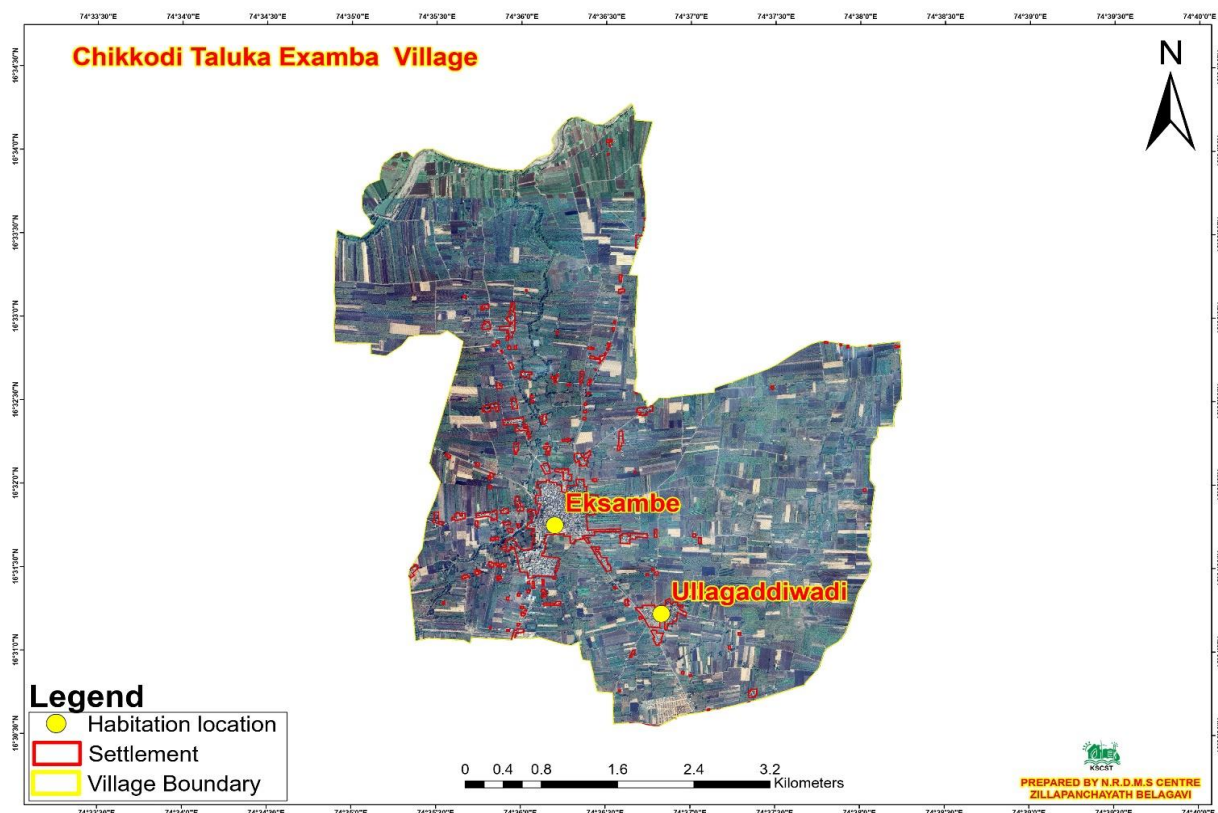
aims to **empower GIS and data management skills**, thereby supporting both district administration and state development.

Annexures

Ridge to valley Map : 1



2. New revenue village mapping



3. Village Accountant training photo

