



**REPORT ON**  
**DIVISIONAL LEVEL TRAINING PROGRAM ON**  
**“APPLICATION OF REMOTE SENSING AND**  
**GIS FOR GOVERNANCE”**  
(Held during August and September, 2013)



**ಕರ್ನಾಟಕ ರಾಜ್ಯ ವಿಜ್ಞಾನ ಮತ್ತು ತಂತ್ರವಿದ್ಯಾ ಮಂಡಳಿ,**  
**ಎನ್.ಆರ್.ಡಿ.ಎಂ.ಎಸ್. ವಿಭಾಗ, ಬೆಂಗಳೂರು ಇವರು**



ಗ್ರಾಮೀಣಾಭಿವೃದ್ಧಿ ಮತ್ತು ಪಂಚಾಯತ್ ರಾಜ್ ಇಲಾಖೆ, ಕರ್ನಾಟಕ ಸರ್ಕಾರ  
ಇವರ ಸಹಯೋಗದೊಂದಿಗೆ ಏರ್ಪಡಿಸಿರುವ

**“ಅಭಿವೃದ್ಧಿಯಲ್ಲಿ ದೂರಸಂವೇದಿ ಮತ್ತು ಭೌಗೋಳಿಕ ಮಾಹಿತಿ ವ್ಯವಸ್ಥೆಯ ಪಾತ್ರ”**  
**ಒಂದು ದಿನದ ವಿಭಾಗೀಯ ಮಟ್ಟದ ತರಬೇತಿ-ಕಾರ್ಯಾಗಾರ**

ದಿನಾಂಕ: 06 ಸೆಪ್ಟೆಂಬರ್, 2013,

ಸ್ಥಳ: ಬೆಂಗಳೂರು ಜಿಲ್ಲಾ ಪಂಚಾಯತಿ ಸಭಾಂಗಣ

**Co-ordinator:**  
**H Hemanth Kumar**  
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**ಎನ್.ಆರ್.ಡಿ.ಎಂ.ಎಸ್. ವಿಭಾಗ, ಬೆಂಗಳೂರು ಇವರು**



**ಗ್ರಾಮೀಣಾಭಿವೃದ್ಧಿ ಮತ್ತು ಪಂಚಾಯತ್ ರಾಜ್ ಇಲಾಖೆ, ಕರ್ನಾಟಕ ಸರ್ಕಾರ**  
**ಇವರ ಸಹಯೋಗದೊಂದಿಗೆ ಏರ್ಪಡಿಸಿರುವ**

**“ಅಭಿವೃದ್ಧಿಯಲ್ಲಿ ದೂರಸಂವೇದಿ ಮತ್ತು ಭೌಗೋಳಿಕ ಮಾಹಿತಿ ವ್ಯವಸ್ಥೆಯ ಪಾತ್ರ”**  
**ಒಂದು ದಿನದ ವಿಭಾಗೀಯ ಮಟ್ಟದ ತರಬೇತಿ-ಕಾರ್ಯಾಗಾರ**

ದಿನಾಂಕ: 06 ಸೆಪ್ಟೆಂಬರ್, 2013,

ಸ್ಥಳ: ಬೆಂಗಳೂರು ಜಿಲ್ಲಾ ಪಂಚಾಯತಿ ಸಭಾಂಗಣ

**Dr. M. Prithviraj**  
**Executive Secretary**

**Prof. M.S. Mohan Kumar**  
**Secretary**



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# **DIVISIONAL LEVEL TRAINING PROGRAMS ON** **“APPLICATION OF REMOTE SENSING AND GIS** **FOR GOVERNANCE”**

**(Held during August and September, 2013)**

## **Background:**

Under a joint project of Natural Resources Data Management System (NRDMS) of Department of Science & Technology, Government of India, and the Government of Karnataka, Karnataka State Council for Science & Technology (KSCST), Bangalore has developed district level GIS databases to support the process of Local Level Planning at the levels of district, taluk and village. Over the past two decade all the thirty districts of Karnataka State have been covered under NRDMS. The NRDMS has been institutionalized in the state, through the Department of Rural Development and Panchayath Raj and is supporting 30 Zilla Panchayaths for implementation of their activities and plans. With increasing dependence of the Zilla Panchayaths/Urban local bodies, Line Departments and other stake-holders of local level planning on spatial datasets, a need has been felt to speed up the process of discovery of and access to up-to-date spatial datasets, the Council with the support DST - GoI and DST – GoK has developed a Geoportal and Data Clearing House to discover/ access spatial data sets useful in the local level planning process through Karnataka State Spatial Data Infrastructure (KSSDI) Project. Karnataka Geo-portal for the benefit of planners and administrators; provides seamless state-wide GIS database on selected layers viz. administrative boundaries, derived boundaries for Panchayath raj institutions for administration, infrastructure maps (on amenities and utilities) etc. The spatial data is free and open to all for viewing-access and discovery.

The KSSDI portal passed preliminary stage of development and was released to users during October, 2009 for portal functionality testing. The release allowed the testing of the portal to undergo usability testing with selected users who provided feedback to the project team. Identified malfunctions were rectified. The Council officially launched Karnataka Geoportal during December, 2009 at the 9<sup>th</sup> annual event of National Spatial Data infrastructure by the Honourable Minister of State for Science & technology, GOI, Sri. Prithviraj Chavan. The portal was also dedicated to the state of Karnataka in the national event i.e., NSDI-12 meet held in Bangalore.

The Council in the 2<sup>nd</sup> phase of the Karnataka Geoportal has plans to implement online web map solutions and spatial services such as transactional web feature services (WFS-T), Geo-web services. Geo visualization, publishing meta data (both for data and services), searching and examining spatial data or

services etc. An R&D project costing around Rs. 71 lakhs has been sanctioned to KSCST during March, 2013 to develop web based geospatial applications/decision support system for selected schemes of Watershed and Health Departments to support G-governance on Karnataka Geoportal platform. The 2<sup>nd</sup> phase of KSSDI project is expected to maximize utilization of the Karnataka State Geoportal and to demonstrate the utility of the Geoportal in two identified sectors i.e. Watershed Management and Health. The concept of g-governance i.e., to plan, monitor, review and evaluate several government schemes requiring spatial datasets is planned to be demonstrated on Karnataka Geoportal platform.

In Karnataka, satellite images and GIS have been used from late 1980 onwards and Karnataka was one of the first state to establish, in 1986, a separate Karnataka State RS Utilization Centre – which later was renamed, in 1997, as Karnataka State RS Applications Centre (KSRSAC). In the past 25 years, KSRSAC has brought in a variety of RS and GIS applications for different users and has organized a variety of GIS databases for the state – thereby supporting a large number of departments/projects of GOK with valuable maps and GIS data and also being a “focal point” for RS images. As a result of these efforts of KSRSAC, over the past 10 years, use of satellite/aerial images and GIS have proliferated in various departments of GOK - Department of Forests, Town Planning Department, Department of Agriculture, Urban Development Department, various city municipalities and authorities (Bangalore city was one of the first cities to use RS and GIS for urban planning and now Mysore, Hubli, Mangalore and many others adopt GIS), Irrigation Department, Mines and Geology department and many others have been using RS and GIS as part of their projects.

The Karnataka State Natural Disaster Management Centre (KSNDMC) has excellent application and infrastructure in the field of Disaster Management, including early warning and mitigation aspects. KSNDMC collects weather, geological, hydrological data on real time. KSNDMC operates a Master Control Facility, which is supported by a network of 1600 Telemetric Rain Gauges, 200 Satellite and GPRS linked weather stations, 13 Earthquake Monitoring Stations – all of these pumping weather/disaster data on a continuous basis to a centralized GIS database and a web enabled GIS Applications system with modern geo-information processing and real-time communication/delivery systems. In the late 1990s, many private organizations also started providing RS and GIS services to end users.

**Purpose and intentions of workshop:**

Even though many agencies are providing geospatial services in the state, it is generally seen that the utility of GIS is not profoundly seen in governance. The full potential of GIS technology is yet to be achieved and exploited in the state for decision-support by planners, decision-makers, citizens and many others who are stake holders for governance. Mainly the GIS initiatives have been successful in sporadic cases where individuals have taken interest and lead in a project mode, and GIS is yet to be integrated in governance due to lack of mandate to the departments through policy initiatives. Few other reasons for this situation are (i) lack of easily available and regularly updated GIS-Ready data, and (ii) lack of user friendly GIS apps.

To create awareness and to showcase the potential of web based geospatial technologies, a one-day Divisional Level Training-workshop on Geospatial Technology was held in all the four divisions of Karnataka during August – September, 2013 with the concurrence of Rural Development and Panchayath Raj (RDPR) department. The workshop was primarily aimed at familiarizing geospatial technologies through lectures and with ample usage of case studies. The workshop is expected to help the implementing agencies to understand the importance of GIS and RS for planning and implementation on the field and orient the resource maps with the field conditions. The spatial data for effective implementation of various rural schemes using scientifically prepared action plan maps.

## **Belgaum Division Training-Workshop**

**13 August, 2013**

The Inaugural function of the first divisional training-workshop was held in the Conference hall of Belgaum Zilla Panchayat, Belgaum on 13<sup>th</sup> August 2013. The workshop was attended by about 100 officials of PRED engineers of the division and district level officers of Agriculture, Watershed, Mines and Geology, Health, Education, Sericulture, Fisheries and Town Planning Authority.

The inaugural function started with welcome speech by Mr.R.G.Nayak, Deputy Secretary (Administration) who invited all dignitaries and participants and in his welcome speech he stressed the importance of remote sensing and GIS in current scenario in implementing government work for better governance.

Smt. Deepa Cholan, CEO of Zilla Panchayat, Belgaum inaugurated the function by lighting the lamp and in her address highlighted the benefits of Remote Sensing and GIS. She informed the district officials to make use of this Training - workshop and expected the participants to adopt the technologies in their work to bring in transparency and efficiency in implementation of development works of the government.

Dr. M Prithviraj, Executive Secretary, KSCST in his presidential remark call upon the officials participating in the workshop to make use of this opportunity and adopt geospatial technologies to plan and minor government schemes.

After the inaugural function, technical session of the workshop commenced with a brief introduction About Karnataka State Council for Science and Technology by Dr. M Prithviraj, Executive Secretary, KSCST.

Mr. H. Hemanth Kumar Fellow and PI-NRDMS program gave a brief introduction to the training-workshop and the relevance of it in the present scenario. He further informed that RDPR is taking keen interest in adopting geospatial technologies for governance and a feedback at the end of these divisional workshop would help them in identifying the key areas for support.

Dr. A. Perumal, Chair Professor - Sir MV Geospatial Technology Chair, Indian Institute of Science, Bangalore spoke on the journey of Remote Sensing and GIS applications for Natural Resources Management since ISRO's launch remote sensing satellites. He gave a detailed description of ISRO's efforts in popularising RS and GIS for planning, data processing and application projects in diversified areas. Prof Perumal in his lecture gave more emphasis to utility of RS and GIS for Conservation, development and optimal utilisation of land and water resources for the ultimate benefit of the people.

Mr. H.Hemanth Kumar, in the morning session delved on NRDMS Program; Introduction to maps and data; Geospatial Technologies for Governance followed by applications of Crowd Sourcing and its demonstration. He informed the 73rd and 74th Amendments of the Indian Constitution passed in 1993 emphasized the need for geospatial data for development planning to local level governments or Panchayats. He told that the objective of NRDMS programme was to establish district NRDMS centers in all the districts to develop spatial database and applications that are relevant to planning and administration for "Decentralized Planning" using geospatial technologies. He explained the journey of NRDMS centers, Establishment of NRDMS centers in all the districts, institutionalization of spatial data centers in Karnataka. With the available data he informed the participants these district spatial data centres have been providing support to district level planning for all the line departments. Several applications developed by the state and district NRDMS centres on health, crime, urban planning, usage of google maps, MI tanks, watershed, fisheries etc were demonstrated during the workshop.

In the afternoon session, Mr. H Hemanth Kumar demonstrated gathering of geospatial information at higher resolution through crowd sourcing concepts apart from providing information on the initiative taken up by the government and the Council in resource mapping; urban and cadastral mapping; use of google and other public portals in adding value to the existing data for planning and monitoring several government schemes.

In the afternoon session Mr. Anil R. Naik of Uttara Kannada District NRDMS centre highlighted the activities and support provided by his centre to various line departments.

After the technical session there was discussion and interaction session where participants raised their queries which were well addressed by experts.

On behalf of the Zilla Panchayath, Mr. Manjunath Totad proposed the vote of thanks.

**The divisional workshop were conducted in other three division with a good number participation of senior officers from line departments and the dates on which they have been conducted is provided under program schedule.**

**Deliberations & conclusions:**

During interaction with the officials of the line departments, the following issues came up and needs to be resolved to successfully adopt geospatial technologies for governance.

- a. Desktop/Laptop for all the Group A and Group B officers
- b. Periodical training and hand-holding of staff including computer operators in geospatial technologies to
- c. Hardware and software (GIS software, computers, Internet, UPS, printers etc.)
- d. Directive from the heads of departments to adopt technologies
- e. Easily available reliable and updated GIS ready data in centralized server for departments to access
- f. GPS instrument for capturing information of all the schemes
- g. Technical support in planning, monitoring, review and evaluation



## **Program Schedule**

### **Divisional Level Training-Workshop on “Application of Remote Sensing and GIS for Governance”**

<b>Time</b>	<b>Program Details</b>
10.00 – 10.30 am	Registration
10.30 - 10.50 am	Inauguration
10.50 - 11.00 am	Introduction to the training – Workshop
11.00 - 11.10 am	About Karnataka State Council for Science and Technology
11.10 - 12.10 pm	Basics of GIS and Remote Sensing
12.10 - 01.30 pm	a. Introduction to NRDMS Program b. Introduction to Maps and Data and Geospatial Technologies for Governance
01.30 - 02.30 pm	Lunch
02.30 - 03.15 pm	a. Crowd Sourcing and its demonstration b. Presentation by District Project personnel
03.15 - 04.00 pm	Laser scanning & 3D Modeling of heritage sites and restoration of Kalyanies
04.00 - 04.30 pm	Discussion and Interaction

## **Divisional training-workshop**

<b>Division</b>	<b>Date</b>	<b>Officers Participation</b>
Belgaum	13 August 2013	96
Mysore	23 August 2013	80
Bangalore	06 September 2013	80
Gulbarga	20 September 2013	65

## Belgaum Division workshop



## Mysore Division workshop





## Bangalore Division workshop



## Gulbarga Division workshop





# ಅಭಿವೃದ್ಧಿಯಲ್ಲಿ ಭೌಗೋಳಿಕ ಮಾಹಿತಿ ಅವಶ್ಯ

## ■ ವಿಕ ಸುದ್ದಿಲೋಕ ಬೆಳಗಾವಿ

ಪ್ರಾಮಾಣಿಕ ಮತ್ತು ಪಾರದರ್ಶಕ ಆಡಳಿತ ನೀಡುವ ದೃಷ್ಟಿಯಿಂದ ಅಭಿವೃದ್ಧಿಯಲ್ಲಿ ದೂರ ಸಂವೇದಿ ಮತ್ತು ಭೌಗೋಳಿಕ ಮಾಹಿತಿ ವ್ಯವಸ್ಥೆಯ ಪಾತ್ರ ಮಹತ್ವದ್ದಾಗಿದೆ ಎಂದು ಜಿಪಂ ಮುಖ್ಯ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಧಿಕಾರಿ ದೀಪಾ ಚೋಳನ್ ಹೇಳಿದರು.

ನಗರದ ಹಳೆಯ ಜಿಪಂ ಸಭಾಂಗಣದಲ್ಲಿ ಮಂಗಳವಾರ ಏರ್ಪಡಿಸಿದ್ದ ಒಂದು ದಿನದ ವಿಭಾಗ ಮಟ್ಟದ ಕಾರ್ಯಾಗಾರದಲ್ಲಿ ಪಾಲ್ಗೊಂಡು ಅವರು ಮಾತನಾಡಿದರು.

ಗ್ರಾಮೀಣ ಭಾಗದಲ್ಲಿ ನಡೆಯುತ್ತಿರುವ ಅಭಿವೃದ್ಧಿ ಕಾರ್ಯಕ್ರಮಗಳು ವ್ಯವಸ್ಥಿತವಾಗಿ ಅನುಷ್ಠಾನಗೊಳ್ಳುವ ದೃಷ್ಟಿಯಿಂದ ಬೆಳಗಾವಿ ವಿಭಾಗದ ಎಲ್ಲ ಅಧಿಕಾರಿಗಳು ಅಭಿವೃದ್ಧಿಯಲ್ಲಿ ದೂರ ಸಂವೇದಿ ಮತ್ತು ಭೌಗೋಳಿಕ ಮಾಹಿತಿ ವ್ಯವಸ್ಥೆಯ ಸಂಪೂರ್ಣ ಮಾಹಿತಿ ಪಡೆದುಕೊಂಡು ಯಥಾವತ್ತಾಗಿ ತಮ್ಮ ಇಲಾಖೆಯಲ್ಲಿ ಅನುಷ್ಠಾನಗೊಳಿಸಬೇಕೆಂದು ತಿಳಿಸಿದರು.

ಅಧ್ಯಕ್ಷತೆ ವಹಿಸಿದ್ದ ಕರ್ನಾಟಕ ರಾಜ್ಯ ವಿಜ್ಞಾನ ಮತ್ತು ತಂತ್ರವಿದ್ಯಾ ಮಂಡಳಿಯ ಕಾರ್ಯನಿರ್ವಾಹಕ ಕಾರ್ಯದರ್ಶಿ ಡಾ. ಎಂ. ಪ್ರದೀಪಾಜ್ ಮಾತನಾಡಿ, ವಿಭಾಗ ಮಟ್ಟದ ಎಲ್ಲ ಅಧಿಕಾರಿಗಳು ತರಬೇತಿಯ



ಬೆಳಗಾವಿ ಜಿಪಂನಲ್ಲಿ ಮಂಗಳವಾರ ಏರ್ಪಡಿಸಿದ್ದ ಕಾರ್ಯಾಗಾರದಲ್ಲಿ ಜಿಪಂ ಮುಖ್ಯ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಧಿಕಾರಿ ದೀಪಾ ಚೋಳನ್ ಮಾತನಾಡಿದರು.

ಡಾ. ಎಂ. ಪ್ರದೀಪಾಜ್, ಡಾ. ಎ. ಪೆರುಮಾಳ್, ಹೆಚ್. ಹೇಮಂತಕುಮಾರ, ಆರ್.ಜಿ. ನಾಯಕ ಉಪಸ್ಥಿತರಿದ್ದರು.

ಪ್ರಯೋಜನ ಪಡೆದುಕೊಂಡು ಯಶಸ್ವಿಯಾಗಿ ಸರಕಾರದ ಯೋಜನೆಗಳನ್ನು ಅನುಷ್ಠಾನಗೊಳಿಸಬೇಕೆಂದು ಹೇಳಿದರು.

ಪ್ರಾಸ್ತಾವಿಕವಾಗಿ ಮಾತನಾಡಿದ ಜಿಪಂ ಆಡಳಿತ ಉಪ ಕಾರ್ಯದರ್ಶಿ ಆರ್.ಜಿ. ನಾಯಕ, ಅಭಿವೃದ್ಧಿಯಲ್ಲಿ ದೂರ ಸಂವೇದಿ ಮತ್ತು ಭೌಗೋಳಿಕ ಮಾಹಿತಿ ಹಿಂದೆಂದಿಗಿಂತ ಅವಶ್ಯವಾಗಿದೆ ಎಂದರು.

ಕಾರ್ಯಾಗಾರದಲ್ಲಿ ಕರ್ನಾಟಕ ರಾಜ್ಯ ವಿಜ್ಞಾನ ಮತ್ತು ತಂತ್ರವಿದ್ಯಾ ಮಂಡಳಿಯ ಹಿರಿಯ ವಿಜ್ಞಾನಿಗಳಾದ ಡಾ. ಎ. ಪೆರುಮಾಳ್, ಹೆಚ್. ಹೇಮಂತಕುಮಾರ,

ಯು.ಟಿ. ವಿಜಯ, ಪಾಲನೇತ್ರ ಹಾಗೂ ಅನೀಲ ನಾಯಕ ಇವರು ದೂರ ಸಂವೇದಿ ಮತ್ತು ಭೌಗೋಳಿಕ ಮಾಹಿತಿ ವ್ಯವಸ್ಥೆಯ ತರಬೇತಿ ನೀಡಿದರು. ಕಾರ್ಯಾಗಾರದಲ್ಲಿ ಬೆಳಗಾವಿ ವಿಭಾಗದ ಆಯ್ಕೆ 120 ಜನ ಜಿಲ್ಲಾ ಮಟ್ಟದ ಅಧಿಕಾರಿಗಳು ಭಾಗವಹಿಸಿದ್ದರು.

ಕರ್ನಾಟಕ ರಾಜ್ಯ ವಿಜ್ಞಾನ ಮತ್ತು ತಂತ್ರವಿದ್ಯಾ ಮಂಡಳಿ ಹಾಗೂ ಗ್ರಾಮೀಣಾಭಿವೃದ್ಧಿ ಮತ್ತು ಪಂಚಾಯತ್ ರಾಜ್ ಇಲಾಖೆ ಸಂಯುಕ್ತವಾಗಿ ಇದನ್ನು ಆಯೋಜಿಸಿದ್ದವು.

## NATURAL RESOURCES DATA MANAGEMENT SYSTEM PROGRAM

DISTRICT NRDMS CENTRE - TECHNICAL STAFF			
NAME	DISTRICT NAME	NAME	DISTRICT NAME
Mr. Manjunath S Totad	Belgaum	Mr. Girish Kumar P	Chickmagalur
Mr. Chandrashekhar K Gund	Bidar	Mr. Sandeep S Patil	Gulbarga
Mrs. Pratibha V Hubballi	Dharwad	Smt. Mamatha K S	Dakshina Kannada
Mr. Karthik M S	Chamarajanagar	Mr. Omkar Kori	Gadag
Mr. Shankar P	Shimoga	Mrs. Shruthi M N	Tumkur
Mr. Chandrashekhar T	Chitradurga	Mr. Kiran Raj K	Madikeri
Mr. Shrikanth Y Pujari	Bagalkot	Mr. Niranjan Kumar R	Kolar
Mr. Gangadharappa R	Davangere	Mr. Mohammad Farook Ali	Raichur
Mr. Pradeep V Hegde	Haveri	Mr. Manjula R Chandugol	Chickballapur
Mr. Pradeep Kumar B M	Mandya	Mr. Vinodha M	Ramanagara
Mr. Ramachandra Reddy G B	Bellary	Mr. Vikram R	Udupi
Mr. Kethan Kumar P	Bijapur	Mr. R Siddha Reddy	Yadgir
Mr. Guruswamy P	Koppal	Mr. D. Akshaya	Mysore
SENIOR OFFICERS @ DISTRICT		SENIOR OFFICERS @ STATE CENTRE	
Mr. H.R. Phalanetra	Hassan	Mr. S.N. Sondur	Mr. U.T. Vijay
Mr. D.R. Ramesh	Bangalore Rural	STATE NRDMS CELL	
Mr. K.V. Shivakumar	Bangalore (U)	Mr. Rathan Raj M.J.	Smt. Smitha M.J.
Mr. Anil R Naik	Uttara Kannada	Mr. Umesh V.Ghatage	Mr. Mohan Kumar S.
		Mr. Anil Kumar M.	Mr. Arjun Kumar P.