

# PROGRESS REPORT

(1<sup>st</sup> November 2012-31<sup>st</sup> march 2014)

## PROJECT ENTITLED “DEVELOPMENT OF STANDARDS BASED UTTARAKHAND STATE GEOPORTAL FOR DECENTRALIZED GOVERNANCE”



Uttarakhand State Council for Science & Technology  
(Department of Science & Technology)

Vigyan Dham Via Premnagar, Jhajra, Dehradun-248006, Uttarakhand (INDIA)  
(Tel: 0135-2102769, Fax: 2102769, Website: [www.ucost.in](http://www.ucost.in), Email: [ucost@ucost.in](mailto:ucost@ucost.in))

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Centre of Excellence for NRDMS in Uttarakhand  
Department in Geography,  
Kumaun University, SSJ Campus Almora-263601 (Uttarakhand)

## **1.0 BACKGROUND:**

National Spatial Data Infrastructure (NSDI) defined as the technologies, policies, and people necessary to promote sharing of geospatial data throughout all levels of government, the private and non-profit sectors, and the academic community.

The goal of this Infrastructure is to reduce duplication of effort among agencies, improve quality and reduce costs related to geographic information, to make geographic data more accessible to the public, to increase the benefits of using available data, and to establish key partnerships with states, counties, cities, tribal nations, academia and the private sector to increase data availability.

## **2.0 OBJECTIVES OF THE PROJECT:**

The fundamental objectives of the present project are:

- i. To develop a standards-based GeoPortal and Clearinghouse for Uttarakhand State and demonstrate its utility in Decentralized Governance.
- ii. To build technical capacity of various government departments in geographic information management for sustained maintenance and use of the Portal, and
- iii. To increase awareness and understanding of the vision, concepts, and benefits of Spatial Data Infrastructure at different hierarchical levels.

## **3.0 ACTIVITY OF PROJECT:**

- i. The project was established by other state S&T Councils for this purpose a review of work done by the other council's workout for the establishment of lab as well as project at Uttarakhand.
- ii. Meetings with district Administrators and Planners regarding the project issues for the function of project was organized at Nainital, Almora, Pauri, Rudrapryag, Tehri respectively (**Annexure-I, II, III,IV and V**).
- iii. NRDMS Center Kumaun University Almora finalized the requirement of hardware and software to implement this project from UCOST.
- iv. Expression of Interest (EoI) has been floated to concerned firms for the establishment of Lab at Vigyan Dham Jajhara, Dehradun.

- v) State Spatial Data Infrastructure Committee and State Executive Committee (Vide Notification *No.127XXXVIII/14-30/2013*) have been constituted to Develop Uttarakhand Geoportal (**Annexure-VI&VII**).

## **2.0 WORK DONE DURING THE PERIOD (1<sup>st</sup> Nov 2012 to 31<sup>st</sup> March 2014)**

(State in detail targets completed/ Work done along with adequate technical details)

A brief account of work done on SDI development at District and State level; Web GIS Development; Uttarakhand Geoportal Development; and Technical Capacity Building is presented in the following paragraphs.

### **2.1 Spatial Data Infrastructure Developed**

During the reported period the following District and State level SDI has been developed.

#### **2.1.1 District Level SDI**

2.1.1.1 For six districts (i.e., Almora, Nainital, Rudrapraya, Pauri, Haridwar and Tehri) of the Uttarakhand State, the following SDI has been prepared:

Land use pattern, Streams, Rivers, Lakes and Dams.

2.1.1.2 For five districts (i.e., Almora, Nainital, Rudraprayag, Pauri and Tehri) of the Uttarakhand State, the following SDI has been developed in association with the line Departments, i.e. PWD: Roads. The non-spatial data are also attached.

2.1.1.2.1.1 For two districts (i.e., Almora and Nainital) of the Uttarakhand State, the following SDI has been developed in association with the line departments, i.e., PWD: Classified Roads (*i.e. National Highways State Highways, Minor Districts Roads, Other District Roads, Village Roads, Pradhan Mantri Gramin Rojgar Road, Unmatelled Roads, Metalled Roads*). The non-spatial data are also attached.

2.1.1.4 For three districts (i.e., Almora, Nainital, Pauri and Udham Singh Nagar ) of the Uttarakhand State the following SDI has been developed in association with the Police Department: Kotwalis Boundary; Thanas Boundary; Location of Kotwali and Thana Headquarters; Locations of Police Barriers, Police Chaukees and Fire

Stations. Besides these Non-Spatial data of Kotwali, Thanas including crime data are attached.

- 2.1.1.5 For two districts (i.e., Almora and Nainital) of the Uttarakhand State the following SDI has been developed in association with Education and Health Departments: Locations of Education Centres (*i.e., Primary Schools, Junior High Schools, High Schools, GIC, GGIC, Degree Colleges and Unviversity Campus, and University*); and Location of Health Centres (*i.e., Base Hospital, District Hospitals, Primary Health Centres, Community Healh Centres, Ayurvedic Centres, Homeopathic Centres, TB Clinics, Dot Centres and Child and Maternity Welfare Centres*).
- 2.1.1.6 For two districts (i.e., Almora and Tehri) of the Uttarakhand State the following SDI has been developed in association with the Election Department: Assembly Constituencies Boundary, Locations of Polling Booths with attribute data..
- 2.1.1.7 For two districts (i.e., Almora and Nainital ) of the Uttarakhand State the following SDI has been developed in association with the Tourism Department: Tourist Spots, Tourists Sites, Relegious Places, National Parks, Lakes, Wild Life Centuries, Rest Houses, Hotels etc.
- 2.1.1.8 For one district (i.e. Almora) of the Uttarakhand State the following SDI has been developed in association with the Forest Department and Watershed Management Department: Macro and Mico Watershed Boundaries, Non-Perennial and Perennial Streams, Natural Springs, Canals, Panchyat Ghars, Temples, Reserved Forest, Civil Forests, Guest Houses.
- 2.1.1.9 In four districts (i.e., Pauri, Almora, Bagheshwer and Nainital) the work of Modernization of Cadastral Maps using GIS has been started by imparting handson training to the personnel of Watershed Management and Revenue Departments. Development of digital cadastral maps of some villages have been completed by the concerned departments as detailed below:
- District Pauri - Digital Cadastral Mapping of 47 villages has been completed.
- District Almora - Digital Cadastral Mapping of 50 villages has been completed.
- District Bageshwer- Digital Cadastral Mapping of 5 villages has been completed.

District Nainital - Digital Cadastral Mapping of 5 villages has been completed

### **2.1.2 State Level SDI**

During the reported period, the following State level Spatial Data Infrastructure have been developed: State Boundary, District Boundaries, District Headquarters with their Attributes, Roads, Geological Formations, Vegetation Line (1972, 1990, 1999 and 2010), Glaciers ( total-1439), Rivers and Streams, Glacial Lakes (total-127), Uttarakhand Devastation 2013 (about 19000 incidences of disaster reordered under MANU project of the NRDMS Division, DST, Government of India).

## **2.2 Development of Web GIS**

For developing Uttarakhand Geoportal, the following WMS and WFS services have been created.

### **2.2.1 Development of WMS Service**

- i. Created spatial (point, line and polygon) database features (in shape file) of all the district and state level SDI (as mentioned in Section 2.1.1 and 2.1.2 above) in Arc GIS 9.1 software.
- ii. Created Spatial Index for each projected shape files (layers) using open source software: Degree-wms.
- iii. Created feature type definition (schema) file in degree-wms for each shape file (layer).
- iv. In wms\_configuration.xml file, bounding box and SRS were edited for each layer.
- v. For each layer, style file created.
- vi. To get map, getmap files created for each layer.

### **2.2.2 Development of WFS Service**

- i. For each shape file (layer) feature type definition (schema) file created.
- ii. In wms\_configuration.xml file bounding box and SRS were edited for each layer.
- iii. To get feature, describe feature, configure feature and get feature files created for each layer.

## **2.3 Development of Uttarakhand Geoportal**

All the above mentioned WMS and WFS services have been published into the Uttarakhand Geo-Portal which is tagged with the India Geoportal.

## **2.4 Technical Capacity Building And Awareness**

To build technical capacity of various government departments in geographic information system development and management for sustained maintenance and use of the Geoportal; and to increase awareness and understanding of the vision, concepts, and benefits of Spatial Data Infrastructure, the following 7 training workshops at different districts headquarter and at the Centre of Excellence for NRDMS in Uttarakhand, Kumaun University SSJ Campus Almora were organised. During the training workshops 370 administrators/planners/technocrats/engineers of district Almora, Nainital, Rudrapryag, Pauri and Tehari were sensitized about the vision, concepts and benefits of Spatial Data Infrastructure and, and SDI and GIS development techniques.

- 2.4.1 Seven Day Training Workshop on GIS Development of the Officials of the UCOST , Dehradun organized by the COE NRDMS, Kumaun University, 25 April - 3 May, 2014.
- 2.4.2 Two Day Training Workshop on Modernization of Office Records and Maps for District Planning organised jointly by COE NRDMS, Kumaun University and DESTO, Vikash Bhawan, Tehri at Collectorate, Tehri, 27-28 January, 2014.
- 2.4.3 Workshop on modernization of land records, organized at the Vikash Bhawan Pauri, District Pauri, and Sponsored by the Uttarakhand State Council of Science and Technology, Government of Uttarakhand and organized by COE NRDMS Almora, 6-7 Sept.2013.
- 2.4.4 Workshop on GIS and Its Applications in Police Administration, organized at the SSP Office Nainital, Sponsored by the Uttarakhand State Council of Science and Technology, Government of Uttarakhand and organized by COE NRDMS Almora, 10<sup>th</sup> June 2013.

- 2.4.5 Kumaun Division, PWD Engineers' Workshop for GIS Development, Sponsored by the Uttarakhand State Council of Science and Technology, Government of Uttarakhand and organized by COE NRDMS Almora, 11th February 2013.
- 2.4.6 Information Need Assessment Workshop for GIS Development for District Administration and Planning, organized jointly by COE NRDMS in Uttarakhand and District Administration Rudrapryag at Collectrate Rudraprayag, sponsored by the UCOST, Government of Uttarakhand, Dehradun and DST, Government of India, New Delhi, 2<sup>nd</sup> January 2013.
- 2.4.7 Workshop on GIS Development and GPS Data Capturing for participants of UGC Refresher Course for Geographers at the Centre of Excellence for NRDMS in Uttarakhand, participants-27 Geographers of four different states, i.e., Maharashtra, Uttarakhand, Uttar Pradesh and Bihar, 3<sup>rd</sup> November 2012.

#### **2.4 Updating Mechanism and Sustenance of the Uttarakhand Geoportal:**

For updating of the Uttarakhand GeoPortal a self sustaining updating mechanism has been developed by establishing GIS Cells at Almora, Nainital, Pauri and Tehri district Headquarters. It is proposed that these GIS Cells shall be looked after by the District Coordination Committee (DCC) in which all the Heads of district line departments are members headed by the District Magistrate.

- 3.0. Cumulative Work done : 40% Completed
- 4.0 Is the Project progressing as per schedule? : Yes
- 5.0 If there are delays, give reasons for delay : NA
- 6.0 Any other information PI may like to furnish : Nil
- 7.0 Who are your stakeholders & what linkages have been established with them: All the line Departments of the State Government of Uttarakhand State.

**II) FINANCIAL SUMMARY**

**(A) Statement of Expenditure and Requirement**

**(B) Utilization Certificate**

**(C) Details of Manpower:**

Sl.No.	Staff Sanctioned (Designation and scale of Pay)	Status
1	Research Scientists Scientist-2 (Rs.19,600-31,000, Grade Pay Rs.6000/-)	Recruited -2
2.	Database Administrator -1 (Rs. 20,000/-pm)	<i>Not Recruited</i>
3.	System Analyst -1 (Rs,12,000/-pm)	Recruited-1
4.	GIS Analyst -1 (Rs.20,000/-pm)	Recruited-1
5.	JRF-1 (@Rs.16000/-pm)	Recruited-1
6.	GIS Technical-13 (@Rs.10,000/-pm)	Recruited -9
7.	Lab Attendent -1 (@ 5000/- pm)	Recruited-1



**Requirement of Additional Budget from Salary Head by NRDMS Centre,  
SSJ Campus, Almora**

Annexure -I

Details of yearwise per month salary (since the date of joining -1<sup>st</sup> November,2012) of Research Scientist S sanctioned at the Scale of Rs.19600-39100, Grade Pay Rs.6000 by the DST, New Delhi/UCOST, Dehradun Research Project on Development of Standard Based Uttarakhand GeoPortal for Decentralised Governance being implemented by the COE NRDMS, Kumaun University, SSJ Campus Almora under the direction of Prof. J.S.Rawat.

**First Year (November 2012 to October 2013)**

Basic Pay : Rs.19600.00  
Grade Pay : Rs. 6000.00  
DA (72%) : Rs.18432.00  
HD A :Rs. 540.00  
HRA : Rs 3000.00

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Total Month : Rs. 47572.00  
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**Second Year (November 2013 to October 2014)**

Basic Pay (with increment @3%) : Rs.20368.00  
Grade Pay : Rs. 6000.00  
DA (90%) : Rs.23732.00  
HDA :Rs. 540.00  
HRA : Rs 3000.00

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Total Month : Rs. 53640.00  
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**Third Year (November 2014 to October 2015)**

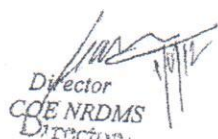
Basic Pay (with increment @3%) : Rs.21159.00  
Grade Pay : Rs. 6000.00  
DA (90%)\* : Rs.24444.00  
HDA :Rs. 540.00  
HRA : Rs 3000.00

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Total Month : Rs. 55143.00  
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\*DA rate is subject for change as per Government Order in future.

  
AAGRO

Assistant Account Officer  
Kumaun University Campus  
ALMORA (U )

  
Director  
COE NRDMS  
Director

Centre of Excellence for  
NRDMS of Uttarakhand  
K.U. SSJ Campus,  
ALMORA

  
Director  
SSJ Campus Almora

Director  
S. S. I. Campus,  
ALMORA

**Government of Uttarakhand**  
**Science and Technology Department**  
**Notification No 127/XXXVIII/14-30/2013**  
**Dated: 28 May, 2014**



**State SDI Executive Committee for the project entitled "Development of Geoportal and Clearinghouse for Provision of Geospatial Information Services under Uttarakhand Spatial Data Infrastructure (UKSDI)"**

**Composition of the Committee**

- |  |                   |
|--|-------------------|
| 1. Principal Secretary/Secretary, Planning, Uttarakhand  | Chairman          |
| 2. Principal Secretary/ Secretary, Science & Technology, Uttarakhand                               | Co-Chairman       |
| 3. Director, Planning & Statistics, Uttarakhand  | Member            |
| 4. Chairman, Revenue Board, Uttarakhand  | Member            |
| 5. Director, Agriculture, Uttarakhand  | Member            |
| 6. Additional Principal Chief Conservator, Environment (Forest) , Uttarakhand                      | Member            |
| 7. Chief Engineer, Irrigation, Uttarakhand   | Member            |
| 8. Chief Engineer, PWD , Uttarakhand   | Member            |
| 9. Director General, Medical, Health and Family Planning, Uttarakhand                              | Member            |
| 10. Director, Urban Development, Uttarakhand   | Member            |
| 11. Director, Higher Education, Uttarakhand  | Member            |
| 12. Director General, School Education, Uttarakhand  | Member            |
| 13. Director, Panchayati Raj, Uttarakhand  | Member            |
| 14. Additional Commissioner, Rural Development, Uttarakhand  | Member            |
| 15. Director, Information Technology Development Agency, Uttarakhand                               | Member            |
| 16. Director, Centre of Excellence for NRDMS , Almora  | Member            |
| 17. DG, Uttarakhand Council of Science and Technology, Dehradun                                    | Member Secretary  |
| 18. Dr. D.P. Uniyal, Senior Scientific Officer, Spatial Data Infrastructure (SDI), UCOST, Dehradun | Project In-Charge |

The committee will co-op five expert members from the field of GIS, GPS, Computer Cartography and Remote Sensing to facilitate its deliberations.

The committee will meet atleast twice a year to coordinate the Spatial Data Activities among the line departments and other stakeholders.

**Terms of Reference:**

1. To implement the decisions taken by the State SDI Committee
2. To review the progress of activities of the State SDI
3. To recommend suitable policy and administrative measures to ensure that the State Geo Portal is effectively utilized by the end users in the State
4. To assist in establishing and publishing consensus standards and specifications for spatial data, and recommend priorities for producing datasets.
5. To build institutional relationships to create a community of data-sharing stakeholders.
6. To assess capacity building and up gradation of infrastructure from time to time as per user needs.
7. To assess the needs of the line departments and create awareness about utility of State SDI in planning and decision-making.

The Uttarakhand Council of Science & Technology shall be the main hub of activities of the State SDI with the support of the Kumaon University and provide the required secretarial support.

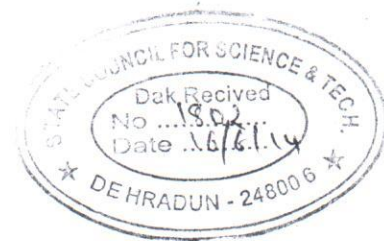
( Subhash Kumar )  
Chief Secretary  
Government of Uttarakhand

CC for Information regarding Executive Committee:

1. Principal Secretary/Secretary to Chief Minister, Uttarakhand Govt.
2. Private Secretary to Minister, Science & Technology Deptt., Uttarakhand Govt.
3. Private Secretary to Chief Secretary, Uttarakhand Govt.
4. Private Secretary to Secretary, Science & Technology Deptt. Uttarakhand Govt.
5. All members of Executive Committee

( Vijay Kumar Dhaundiyal )  
Additional Secretary

**Government of Uttarakhand  
Science and Technology Department  
Notification No 233/XXXVIII/14-30/2013  
Dated: 28 May, 2014**



**State SDI Steering Committee for the project entitled “Development of  
Geoportal and Clearinghouse for Provision of Geospatial Information  
Services under Uttarakhand Spatial Data Infrastructure (UKSDI)”**


**Composition of the Committee**

- |   |                   |
|---|-------------------|
| 1. Chief Secretary, Uttarakhand   | Chairman          |
| 2. Principal Secretary/Secretary, Planning  | Co-Chairman       |
| 3. Principal Secretary/ Secretary, Science & Technology   | Member Secretary  |
| 4. Principal Secretary/ Secretary, Revenue  | Member            |
| 5. Principal Secretary/ Secretary, Finance  | Member            |
| 6. Principal Secretary/ Secretary, Agriculture  | Member            |
| 7. Principal Secretary/ Secretary, Forests & Environment  | Member            |
| 8. Principal Secretary/ Secretary, Irrigation   | Member            |
| 9. Principal Secretary/ Secretary, PWD  | Member            |
| 10. Principal Secretary/ Secretary, Medical, Health and<br>Family Planning                            | Member            |
| 11. Principal Secretary/ Secretary, Urban Development   | Member            |
| 12. Principal Secretary/ Secretary, Housing   | Member            |
| 13. Principal Secretary/ Secretary, School Education  | Member            |
| 14. Principal Secretary/ Secretary, Higher Education  | Member            |
| 15. Principal Secretary/ Secretary, Transport   | Member            |
| 16. Principal Secretary/ Secretary, Power   | Member            |
| 17. Principal Secretary/ Secretary, Panchayati Raj  | Member            |
| 18. Principal Secretary/ Secretary, Rural Development   | Member            |
| 19. Principal Secretary/ Secretary, Information Technology  | Member            |
| 20. DG, Uttarakhand Council of Science and Technology, Dehradun                                       | Member            |
| 21. DG, Uttarakhand Academy of Administration, Nainital   | Member            |
| 22. Director, Centre of Excellence for NRDMS, Almora  | Member            |
| 23. Director, USAC, Dehradun  | Member            |
| 24. Director, NRDMS Division, S & T, GOI, New Delhi   | Member            |
| 25. Director, Indian Institute of Remote Sensing, Dehradun  | Member            |
| 26. Dr. D.P. Uniyal, Senior Scientific Officer, Spatial<br>Data Infrastructure (SDI), UCOST, Dehradun | Project In-Charge |

**Terms of Reference:**


1. To advise the State Line Departments on the use of Geographic Information Science & Technologies like Remote Sensing, GIS, GPS and Computer Cartography in the developmental planning of the State.
2. To formulate policies/guidelines regarding the use of Geographic Information Science & Technologies in the planning process of the State.
3. To promote and facilitate sharing of Spatial Data amongst various Government departments and other users.
4. To recommend ways and means for promotion of Geographic Information Science Education and Training in the State by which the human resource could be developed for implementation of State SDI.

The Committee should ideally meet once a year to discharge its roles and functions.

  
( Subhash Kumar )  
Chief Secretary  
Government of Uttarakhand

**CC for Information regarding Steering Committee:**

1. Principal Secretary/Secretary to Chief Minister, Uttarakhand Govt.
2. Private Secretary to Minister, Science & Technology Deptt., Uttarakhand Govt.
3. Private Secretary to Chief Secretary, Uttarakhand Govt.
4. Private Secretary to Secretary, Science & Technology Deptt. Uttarakhand Govt.
5. All members of Executive Committee.

  
( Vijay Kumar Dhaundiya )  
Additional Secretary