



ANNUAL REPORT

2010 - 2011

SURVEY OF INDIA

(DEPARTMENT OF SCIENCE AND TECHNOLOGY)

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CHARTS

- Status of 1:25,000 Topo Maps
- Status of 1:50,000, 1:250,000 Topo Maps & 1:1 M IMW & WAC (ICAO)
- Locations of Survey of India offices

HIGHLIGHTS

Survey of India, under the Department of Science & Technology, Govt. of India, has been engaged in production and maintenance of various types of topographical, geographical and many other public series maps on various scales covering India, for the defence and development of the nation. Besides, being grouped under 'Scientific Surveys' the Govt. of India business rule, it has also been called upon extensively to deploy its expertise in the field of geodetic and geophysical surveys, study of seismocity and seismotectonics, environmental and disaster management, participation in Indian scientific expeditions to Antarctica, glaciology programmes and other projects related to digital cartography and digital photogrammetry etc. to provide basic data for Science & Technology requirements. Highlights of activities during the year are as under:

TOPOGRAPHICAL MAPPING STATUS

Maps on the 1:250,000 and 1:50,000 scales covering the entire country have been published. Revision surveys for updating these maps are done at regular interval in phased manner.

Surveys on the scale of 1:25,000 is in progress on need basis. 10484 maps have been printed off till 31st March, 2011.

Survey of India has also taken up the tasks of producing new series of maps (Open Series Maps & Defence Series Maps) based on WGS-84 datum.

AERIAL PHOTOGRAPHY

Whole of the country is covered with aerial photography. Special emulsion photography on various scales were undertaken as and when required.

DISTRICT PLANNING MAPS

The status of District Planning Maps being published by Survey of India is as under:

Total Maps under the jurisdiction of Survey of India	...	256
Maps printed	...	255
Maps under printing/ processing	...	01
Maps yet to be taken up	...	---

POLITICAL MAP OF INDIA IN REGIONAL LANGUAGES

Publication of the POLITICAL MAP OF INDIA in regional Indian languages is continued. Maps in Bengali, Gujarati, Kannad, Kashmiri, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telugu and Sanskrit have been published. Map in Sindhi is under preparation.

DIGITAL CARTOGRAPHY

The digital techniques in cartography and use of Digital Cartographic Data Base (DCDB) for bringing out updated maps were initiated in SOI in early eighties. Maps on 1:250,000 scales covering the entire country have been digitized and updation of these maps is in progress. Digitization of 1:50,000 and 1:25,000 scale maps are in progress. 5060 sheets on 1:50,000 scale and 6451 sheets on 1:25,000 scale have been digitized till date.

INTERNATIONAL BOUNDARIES

Strip surveys, demarcation and construction of boundary pillars on international boundary between India-Pakistan, India-Bangladesh, India-Bhutan and India-Myanmar are continued.

GEODETTIC AND GEOPHYSICAL SURVEYS

Geodetic and allied geophysical surveys viz; upgradation and densification of geodetic plan and height control; densification and revision of gravity, geomagnetic, astronomical surveys; tidal measurements and prediction of tides for navigational activities; precise surveys for tunnel alignments, crustal movement and dam deformation studies, repetitive geodetic measurements and analysis of result for the study of seismo city and seismo tectonic in earthquake prone areas were carried out in various parts of the country.

SURVEYS FOR DEVELOPMENTAL PROJECTS

Large scale surveys and mapping on various scales for National Developmental Projects are continued/ undertaken.

TRAINING

433 officers including 16 foreign nationals from Bhutan and 03 foreign nationals from Oman attended various courses while special courses are also conducted for 475 officers from various states and private personnel, at the Indian Institute of Surveying & Mapping, Hyderabad.

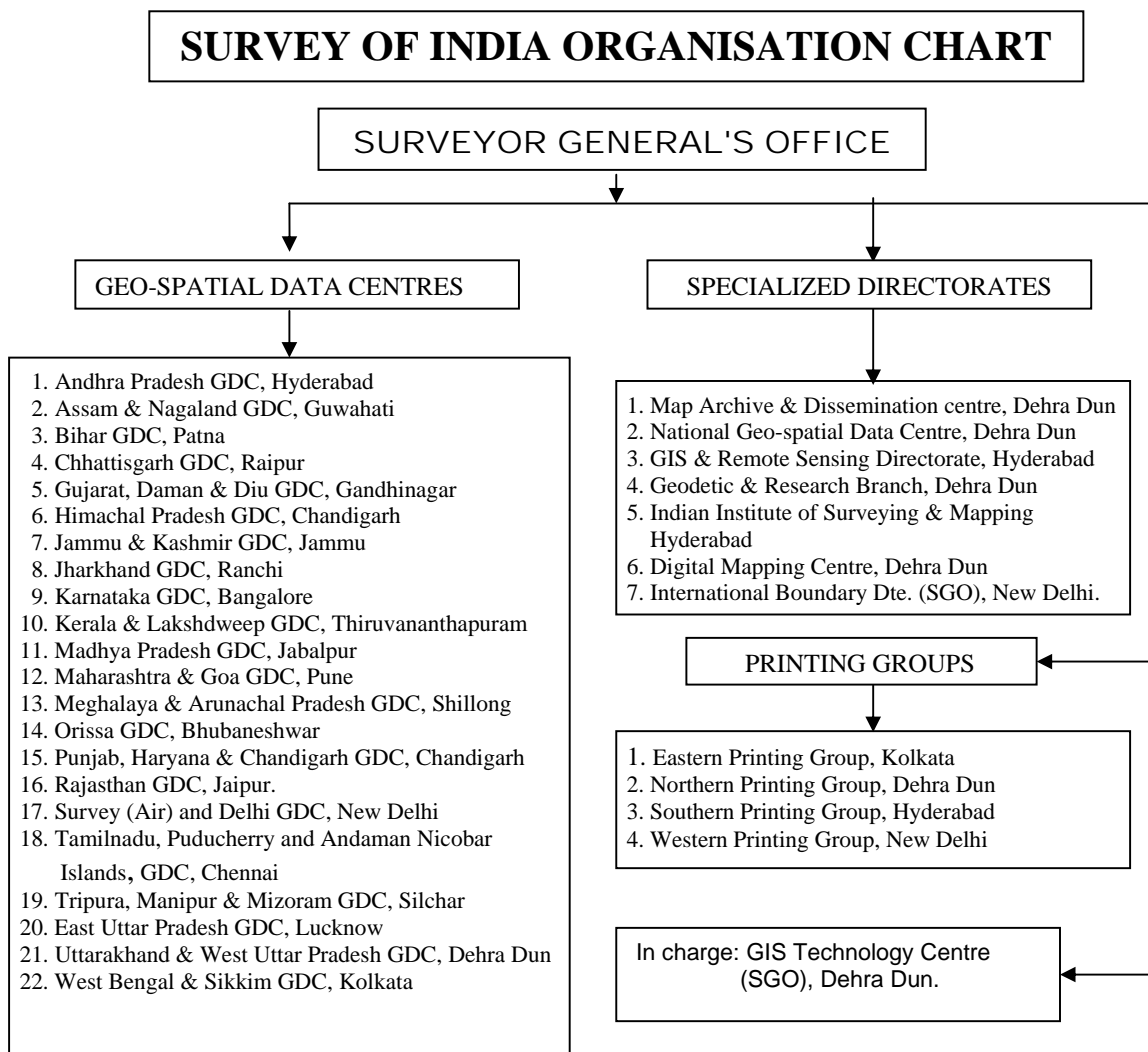
PRINTING

Printing of Topographical Maps, Geographical Maps, Special Purpose Maps, Project Maps, Tourist / Guide Maps and IAF Maps & Charts etc. was continued. 716 maps were printed during the year.

THE ORGANISATION

Survey of India has been restructured w.e.f. 01.01.2004 to meet the Spatial Data demands of Users in different states. Now Survey of India has its offices in almost all of the State Capitals of India named as Geo-spatial Data Centres. The Headquarters of Survey of India remains at Dehra Dun . The following chart depicts the entire structure of Survey of India.

Locations of various Surveys of India's GDCs, Special Directorates, and Printing Groups are as under:



THE CHARTER OF DUTIES

The charter of duties and responsibilities of the Survey of India (SOI) are enumerated below:

- (a) Provision and maintenance of geodetic plan and height control network and provision and maintenance of gravimetric and geomagnetic control network.
- (b) Provision of topographical cover in surveying and mapping for the entire country to meet the national requirements, including those of defence forces.
- (c) Collection of tidal data along the coast line and islands and Tidal predictions for 44 ports in the Indian Ocean, Arabian Sea and the Bay of Bengal including ports in Myanmar, Iran, Sri Lanka and Sultanate of Oman in the interest of good Neighbourly relations.
- (d) Compilation/ mapping and production of geographical maps e. g. Railway Map, Road Map, Political Map, Physical Map etc.
- (e) Preparation of the International Map of the World (IMW) series and the World Aeronautical Charts (WAC) series as a commitment to the International Civil Aviation Organization (ICAO).
- (f) Surveys for development projects, e.g., power and irrigation, mineral exploration, urban and rural development etc.
- (g) Surveying and mapping of forest areas, large cities and preparation of guide maps of cities/ towns/ places of interest.
- (h) Surveying and mapping of Cantonments, surveying and mapping for aeronautical maps/ charts for the IAF.
- (i) Standardization of geographical names based on phonetics and participation in the international body set-up by the United Nations for this purpose.
- (j) Demarcation of the external boundary of India, its correct depiction on maps published within the country. Also advising the Government of India on the demarcation of inter-state boundaries.
- (k) Training of officers and staff of the department, trainees from other central and state government departments and trainees from foreign countries.
- (l) Promotion of Research & Developmental activities in the field of geodesy, photogrammetry, cartography and printing techniques etc.
- (m) Introduction of modern technology in the related fields and indigenization of equipment as an aid to import substitution. This includes development of instruments/ materials indigenously to increase self-reliance and reduce the drain on the foreign exchange reserves.

- (n) Co-ordination and control in providing aerial photographic cover for the whole country.
- (o) Collaboration with training organizations, educational institutions and scientific bodies on specific projects to promote research and developmental activities.
- (p) Representation at various international and national conferences to promote the growth of surveying and cartography and to introduce the state-of-the-art technology for optimum results.
- (q) Support to Third World countries e.g., Nigeria, Afghanistan, Kenya, Iraq, Nepal, Sri Lanka, Zimbabwe, Indonesia, Bhutan, Myanmar and Mauritius etc. by providing technical know-how and expertise in various disciplines of surveying and survey education.

Besides above activities, the Surveyor General of India is associated with the under mentioned Expert Groups/ Committees.

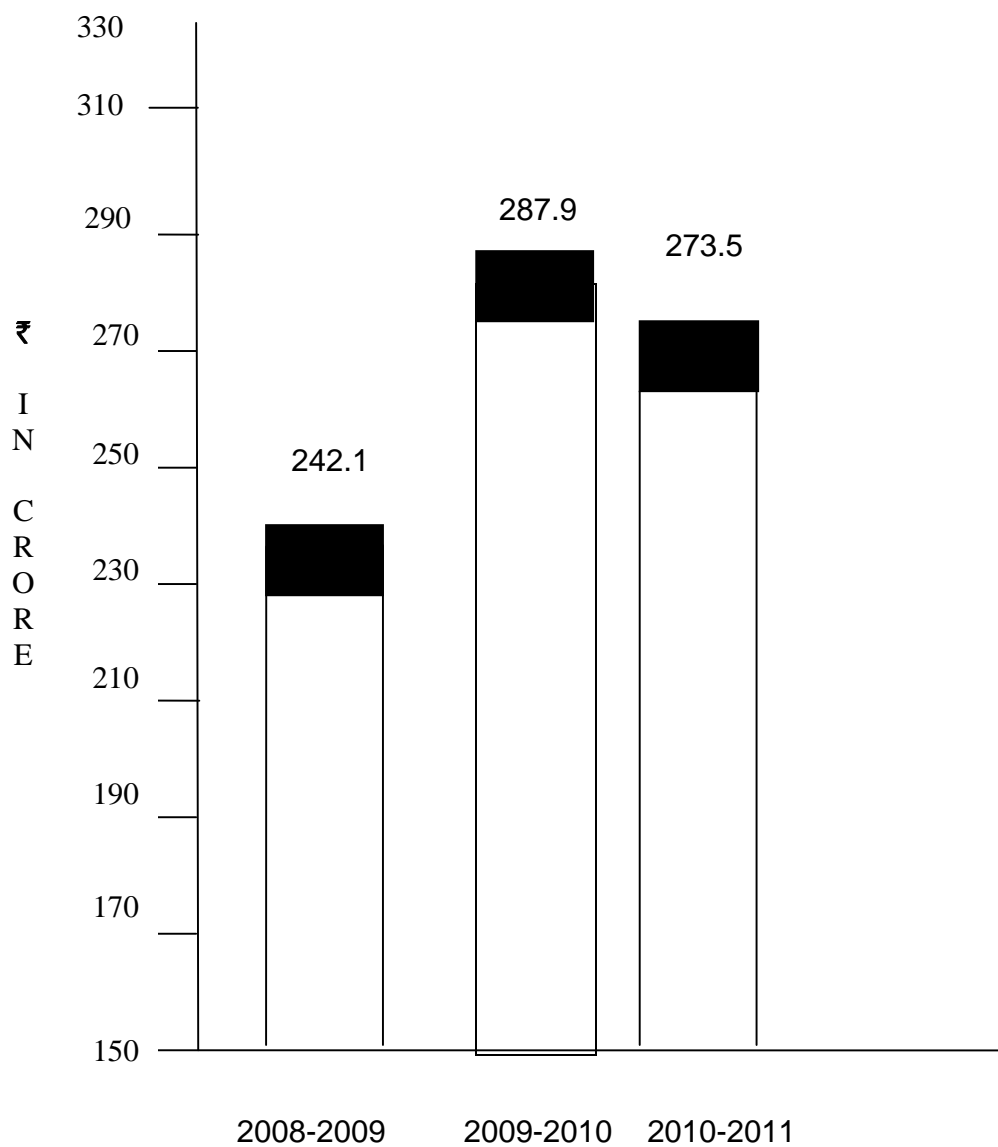
- i) Member of Executive Board of the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) under the auspice of the United Nations Regional Cartographic Congress (UNRCC).
- ii) Chairman of Standing Committee on Cartography and Mapping under NNRMS Programme, constituted by the Planning Commission.
- iii) Member of Management of Geological Survey of India.
- iv) Member of Governing Body of Wadia Institute of Himalayan Geology.


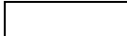
The Surveyor General of India acts as an adviser to various ministries of the Government of India on all surveying and cartographic matters. Survey of India also renders advice on the specifications of surveys and furnishes necessary data / Maps to various central and state government departments for development, Planning and defense applications.

PERSONNEL

Groups	Total
Group `A'	181
Group `B'	469
Group `C' Div.I	1,386
Group `C' Div.II	1,578
Ministerial Estt.	901
Group `D' Estt	2715

THE BUDGET



PLAN 
NON-PLAN 

THE ACTIVITIES

The main activities of the department have been as under:

GEODETIC AND GEOPHYSICAL :

Geodetic Control

The following tasks were carried out against the projected targets for densification of the geodetic & vertical control, adjustment of second level-net and providing precise planimetric & vertical control for various developmental projects:

i)	GPS Observations for GCP Library	239 Stations for Phase I 1262 Stations for Phase II
ii)	High Precision Levelling for Redefinition Reccee for HP Levelling of Indian Vertical datum	402 Lin km 150 Lin km
iii)	Precision Levelling for Project Surveys	945 Lin km
iv)	EDM Traverse	82.3 Lin km
v)	Gravity observation	861 Stations
vi)	Geomagnetic repeat observations	49 Stations
vii)	Maintenance / Inspection / Installation of Tide Gauges	61 Ports
viii)	Secondary Levelling for Ports	140 Lin km (02 Ports)

Geophysical

Continuous Geomagnetic observations of Horizontal Force (H.F.), Vertical Force (V.F.), Declination (D) and their absolute Measurement in order to control the baseline values, throughout the year by Digital Magnetic Instrument installed in Digital Magnetic Observatory Sabhawala, Dehra Dun.

Geomagnetic

Geomagnetic observations were carried out at 49 repeat stations to analyses Horizontal Force (HF), Vertical Force (VF) and declination (D) in Uttar Pradesh, Rajasthan, Madhya Pradesh , Bihar, Jharkhand, West Bengal, Orissa, Chhattisgarh and Uttarakhand.

Tidal Works

Work on modernization and expansion of Indian tide gauge network along the Indian Coast and Real time GPS and Tidal data transmission from remote locations through VSAT network as a part of modernization of Indian Tide Gauge network has been undertaken.

Installation and Maintenance of tidal gauges and data acquisition from the various tidal observatories located along the sea coast of India and offshore islands.

Tidal data processing, analysis and tidal predictions for the year 2010-2011 and its publication in the form of Indian Tide Table-2011 and Hugli River Tide Table 2011.

SPECIAL SURVEYS

Planimetric and height control for tunnel alignments, crustal movement studies for the following developmental projects as listed below:

Arunachal Pradesh:

Etalin H.E. Project

Bhutan:

Punatsangchhu HE Project

Chhattisgarh:

Makrana City Project

Delhi:

Central Water Commission Project

Gujarat:

Kalpasar Project

Haryana:

Thana – Plauri & Beri – Nichli Project

Relaying of Bhakra Grid Junction point in Seven Village of Haryana Project

Himachal Pradesh:

Luhari HE Project

Shongtong Karchhuam HE Project

Karnataka:

Nirmala Nagar Project

Meghalaya:

NUIS Project – Tura

Manipur:

Loktak Down Stream HE Project

Punjab:

Bhakra Dam HE Project

Ranjeet Sagar Dam Project

Uttar Pradesh:

Rihand Dam Project

Maudha Dam Project

Uttarakhand:

Lohari-Nag-Pala HE Project

WB & Sikkim:

Interlinking of Frakka – Sunderban Link

Rajasthan:

Interlinking of Rajasthan Sahasmati Link

AERIAL PHOTOGRAPHY

Aerial photography completed during the year in the various parts of the country has been as under:

Scale	Area covered	
1:8,000	1,264	Sq Km
1:10,000	21,330	Sq Km
1:15,000	<u>44,462</u>	Sq Km
Total:	67,056	Sq km

DIGITAL CARTOGRAPHY

The activities of National Geo-spatial Data Centre, Dehra Dun, GIS & Remote Sensing Directorate, Hyderabad, GIS Technology Centre, Surveyor General's Office (SGO), Dehra Dun and Digitization Cells under various Geo-Spatial Data Centre during the year are enumerated below:

Digitization and Creation of Digital Cartographic Data Base (DCDB)

Departmental

Digitization and creation of Cartographic Data Base on 1:250,000 scales have been completed and updation of these sheets is in progress.

Digitization and creation of Cartographic Data Base of OSM/DSM sheets on 1:50,000 scales have been completed as under:

Progress of OSM Sheets:

Total Sheets	Updated DTDB	Transformation	Submission of digital data For scrutiny			Data handed over to M/S Rolta for Patt	Patterned By Rolta	Patterned by GDC	Total Patterned up to date	Submitted for Printing	Printed Off
			NGDC	GIS & RS	Accepted						
5060	4547	4493	1983	2545	3181	2704	2638	1431	4069	2729	1143

Progress of DSM Sheets:

Total Sheets	Transformation	Patterning	Int.Bdy/ Coastal line Ver. Bdy by Bdy.Ver. Wing		Submitted to NPG for scrutiny		ADGMS(GSGS)		Printing	
			Submitted	Cleared	Total up to date	Data accepted by NPG	Sheet Submitted	Blue indent issued	Submitted	Printed off
5060	3388	2223	272	146	1528	1425	1530	1377	841	262

Digitization and creation of Cartographic Data Base of 6,451 sheets on 1:25,000 scales has been completed.

Progress of Important Project:

DSSDI Project:

Creation of Delhi State Spatial Data Infrastructure for GNCTD-3D GIS Solution Including of large scale base map.

Framework control, Aerial Triangulation, Digital Elevation Model & Ortho Photo has been completed except restricted area.

Project Procedure documents, Data Modelling, System Integration and Operations: Design Documents are completed, Physical infrastructure for all the Monitoring Centres have been completed and 5 centres are operationalized. Delhi Geo Portal of DSSDI project is completed and securing Geo-portal application is in progress.

Primary data has been captured and quality assurance/ quality control of version 1.0 is completed for all 9 districts. QA/QC of version 1.1 completed for 6 districts and for other district is in progress. Utility mapping for underground details are completed except restricted area.

3D topology, generation, texturing, rendering & visualization is completed for all 9 districts (1424 sq km) except restricted area.

NUIS Project:

Survey of India has undertaken the task of mapping of 152 towns on 1:2000 scales for core area and 1:10,000 for the peripheral areas under National urban Information Scheme (NUIS), of Ministry of urban Development.

1:10,000 Scale Survey:

Satellite Imagery of 151 towns has been received. 149 towns has been Geo-referenced and has been sent to NRSA for thematic mapping out of which 143 accepted.

Thematic mapping of 101 towns have been completed and final product of 81 towns has been sent to State Nodal Agency after obtaining security clearance from GSGS.

1:2,000 Scale Surveys:

Aerial Photography of 126 towns received and 107 towns scanned. Control points of 94 towns have been completed for 13 towns are under progress. 2D feature extraction of 73 towns has been completed so far. Ground survey of 6 towns, using total station has been completed while Ground Survey of 1 town is under progress. Data pertaining to 56 towns has been sent to State Nodal Agency.

1:1,000 Scales (Utility Mapping):

Work is under progress by M/S Eaga Energy Pvt. Ltd.

Mapping and Delineation of Hazard Line:

The objective of the project is to delineate, map and benchmark the coastal hazard line all along the mainland coast of India under World Bank Assisted "Integrated Coastal Zone Management (ICZM) project, where SOI has to generate a 0.5 meter elevation contour map on 1:10,000 scale as base map to delineate the Hazard Line for the entire mainland coast of India upto the maximum width of 7 Km from shore line on the landward side.

Tidal data pertaining to 40 years (as available with G&RB) for extraction of maximum annual elevation and extra-pullation for 100 years pertaining to 20 various ports (covered to M.S.L. heights as compiled by G&RB) has been submitted to MoEF.

DT Levelling is under progress:- 760 lin km along Gujarat coast, 414 lin km. DT & 523 lin km. ST Levelling along AP coast, 245 lin km along Orissa coast and 618 lin km. DT & 167 lin km ST Levelling along Tamil Nadu coast have been completed so far.

Provision of control work:- GPS observation for 23 GCPs along AP coast & 22 GCPs along Gujarat is completed and for other coastal state it is under progress.

Redefinition of Indian Vertical Datum:-

Computation of Levelling network observed for densification and Earth Quake Study under the project "Redefinition of Indian Vertical Datum" is in progress. Data comparison for different seasons on line Saharanpur via Dehra Dun. Digitization of charts for densification of Levelling network. Collection of old data for preparing graphs and comparative statement of old and new heights of different seasons of line Saharanpur to Karanprayag of different seasons. Computation of HP Levelling using software etc. and preparation of comparative statement.

Computation of Levelling data is in progress for data supply to ICZM project.

HP Levelling observations along line from Saiyan to Fathehpur via Kanpur, Saiyan to Auriya via Agra and Etawa are under progress.

Modernization and Expansion of Indian Tide Gauge Network along Indian Ocean and Island for Disaster Management:

Implementation of the project for "Modernization and Expansion of Tide Gauge network along Indian coast & Island" is in progress.

Maintenance/ Re-installation of Tide Gauges has been done on 23 ports namely Okha, Vavadinar, Cochin, Chennai, Ennore, Tuticorin, Vishakhapatnam, Paradip, Garden Reach, Port Blair, New Manglore, Karwar, Marmagao, JNPT, Krishnapatnam Aerial Bay, Nancowry, Campbell Bay, Kavaratti, Minicoy, Mumbai, Nagapattinam & Machilipatnam.

Installation of VSAT has been done at 4 ports and installation of INCOIS Tide Gauge at 12 Ports.

Real Time data being received from 7 ports Khandala, Marmagao, New Manglore, Haldia, Compbell Bay, Port Blair and Nancowry Islands.

Receiving & Archiving of Real Time GPS Data from Tidal observatories:

Real Time data being received from 7 ports Khandala, Marmagao, New Manglore, Haldia, Compbell Bay, Port Blair and Nancowry Islands, processing of RTDT data is in process.

GCP Library:

The project envisages setting of precise & consistent GCP Library in a Geocentric Coordinate system for the entire country. The Project will be completed in three phases, In 1st phase 300 1st order control points spacing of 250 to 300 km. apart covering the entire country has already been completed.

In phase- II: Densification of first order network at a spacing of 30 to 40 km apart is under progress. Recee / Site selection of 2214 points, construction of 2192 pillars GPS observation at 1278 stations has been completed so far. Processing & adjustment of GPS data for MP, UP Bihar, Maharastra, Gujarat, Karanataka and Kerala state is completed. The stations observed in the coastal areas are be used for ICZM project.

Coal Mine Project:

Preparation of updated Topographical maps of major Indian Coal field based on remote sensing technique.

The vector space files in dgn. format in respect of 10 coal fields (Priority-I area) (Bisrampur, Lakhanpur, Korba, Chirirmiri, Sonhat, Sohagpur, Talcher, Hasda, Arand, I.B. Valley & Mandi – Raigarh) has been completed and send to NRSC for aerial photography.

Field for providing control point (plan & height) is under progress. 60 permanent BMs and GPS observations on 45 pillars are completed. 60 BMs are connected by Levelling so far by Chhattisgarh, Orissa & Madhya Pradesh GDCs, DT Levelling 1551 lin km has been completed till date.

GIS based Mapping of Cities/towns (Census Project):

Survey of India has taken up a project with Registrar General of India (RGI) for supply of large scale maps, generated from high resolution satellite imagery for 441 towns in phased manner. In the 1st phase the state capitals will be completed. These maps will be used for next census operation.

Survey of India has supplied high resolution satellite imageries of 22 capital cities to ORGI for drawing ward boundaries and collection of requisite information from field. Digitization of ward map of 1320 ward is completed so far.

Progress of GCP Library

Total no. of GCP Pillars	-	2266
Recce	-	2214
Constructions of Pillars	-	2192
GPS observations	-	1278

Progress of Field Verification

Scale	Total No. of Sheets	Sheets already verified		Total Sheets verified up to Date	Remarks
		Up to 31 st March.10	During 2010-11		
1:50,000	5060	4536	130	4766	
1:25,000	19,393	676	49	725	

Scrutiny & Verification of Private Publishers / State Govt. / Central Govt. by Boundary Verification Wing:

Scrutiny	=	1339 maps
Certification	=	1184 maps
Released	=	419 maps
Boundary Description	=	163 maps
IAF Maps	=	14 maps
Maps	=	Nil maps
<hr/>		
Total	=	3119 maps

(a)	Amount received from Forest Department	=	Nil
(b)	Amount received from State Government	=	Rs. 1,09,680
(c)	Amount received from Private Publishers	=	Rs. 7,67,490
(d)	Amount received from Central Government	=	Rs. 78,560
	Total	=	Rs. 9,55,730

SALES OF MAPS & VALUE BY MRIO

Sl. No.	Description	No. of copies	Price Rs.
1	Defence	1,53,062	81,12,286
2	Central Govt.	80,506	34,40,598
3	State Govt.	2,041	2,36,953
4	Misc.	30,077	19,40,714
	Total	2,65,686	1,37,30,551
	Digital Data Supplied		1,29,62,577

TOPOGRAPHICAL SURVEYS AND MAPPING:

The details of topographical surveys and mapping on various scale have been as under:

Sl. No.	Activity	Area (sq km)	Distance (lin km)
1.	<u>Control Surveys</u>		
	Topo Triangulation	Nil	
	Traverse	2,000	lin km
	Levelling	18,530	lin km
	Aerial Triangulation	Nil	
2.	<u>Detailed Surveys</u>		
	Digital Photogrammetric Surveys	83	sq km
	Ground Survey	31,16,403	sq km
	Project Procedure Documents Data- Modeling System	Nil	
	Verification Topo Sheet	128	sheets
3.	<u>Fair Drawing</u>		
	Digital Mapping (DCDB for OSM) on 1:50,000	4,069	maps
4.	<u>Printing</u>		
	Topographical & others	716	maps

INTERNATIONAL BOUNDARIES - CONFERENCES/ MEETINGS:

India – Myanmar Boundary

Maj. General Umesh Chander, Additional Surveyor General, International Boundary Directorate (SGO) attended 17th Sectoral Level meeting between India-Myanmar at Tawang (Arunachal Pradesh) from 05.04.2010 to 06.04.2010.

Maj. General Umesh Chander, Additional Surveyor General, International Boundary Directorate (SGO) attended 16th National Level meeting between India and Myanmar in Ministry of External Affairs, New Delhi from 30.12.2010 to 31.12.2010.

Shri P.K. Ganguly, Director, Meghalaya & Arunachal Pradesh GDC and Shri C.K. Pant, SS, International Boundary Directorate (SGO) attended the Director Level meeting between India – Myanmar boundary task held at Moreh (Manipur) from 25.02.2011 to 26.02.2011.

India – Bhutan Boundary

Shri Swarna Subba Rao, Surveyor General of India, Maj. General Umesh Chander, Additional Surveyor General and Shri C.K. Pant, SS, International Boundary Directorate attended Indo-Bhutan Govt. Level meeting in the Ministry of External Affairs, New Delhi from 10.01.2011 to 11.01.2011.

A Joint Technical meeting was held between India- Bhutan from 23.03.2011 to 25.03.2011 at Shillong. Indian delegation was led by Sh. P.K. Ganguly, Director, Meghalaya & Arunachal Pradesh GDC while Bhutan delegation was led by Shri Choeki Khorlo, Head Boundary Cell, Bhutan.

India – Bangladesh Boundary

Maj. General Umesh Chander, Additional Surveyor General, International Boundary Directorate (SGO) attended meeting in connection with 4th India- Bangladesh joint boundary working group in the Ministry of External Affairs, New Delhi on 09.09.2010.

India- Bangladesh joint meeting to review the field work of 2009-2010 between DL R&S (Ex- officio), Mizoram and Survey General of Bangladesh held on 31st March, 2010 to 01.04.2010 at Kolkata.

India – Pakistan Boundary

Sh. Pankaj Mishra, Superintending, Surveyor, Punjab, Haryana & Chandigarh GDC attended the Joint Surveyors/ Engineers meeting at JCP Wagha (Pakistan side) on 26.05.2010.

Maj. General Umesh Chander, Additional Surveyor General, International Boundary Directorate (SGO) attended India-Pakistan Bi-Annual meeting between BSF and Pak Rangers at Lahore (Pakistan) from 26.10.2010 to 30.10.2010.

Shri D.R. Singh, SS Northern Zone, Chandigarh and Shri Neeraj Kumar, SS, Rajasthan GDC, Jaipur attended the officer's Level meeting on 26.10.2010 at Wagha border (Pakistan side) to discuss the schedule of progress of Survey work regarding India-Pakistan International Boundary.

SCIENTIFIC ACTIVITIES

Geodetic activities undertaken in Geodetic & Research Branch, Survey of India during the period under report include the following major disciplines:

Establishment of primary planimetric and height control for National Control Framework, its densification for mapping.

Geophysical surveys i.e. Gravimetric, Geomagnetic & Astronomical Surveys.

Retrieval and storage of GPS data being recorded at thirty-three Permanent stations established at Almora, Aizawl (Mizo. Univ.), Bangalore (CMMACS), Bhatwari, Bhopal (R.R. L.AB), Bomdila (Tex. Uni.), Bhubaneswar (SOI), Dehra Dun (SOI), (WIHG), Delhi, Dhanbad (WIHG), Guwahati (Univ.), Gangtok (GBPHED), Hanley (IIA), Imphal (Manipur Univ.), Jabalpur (GIS), Kanpur (IIT), Kothi (WIHG), Kodai Kanal (IIA), Leh (IAOH), Lucknow (GIS), Kukchung (NU), Munsiri (WIHG), Mumbai (IITB), Naddi (WIHG), Pananik (WIHG), Pithoragarh (WIHG), Pune, Shillong, Thiruvananthapuram (SOI), Tezpur (Tez. Univ.) , Lumani (Tex. Univ.), Chitrakut (IIT Kanpur), maintained by SOI and other organizations.

Sea level observations to establish the mean sea level. These observations are required to establish the datum for height control and tide predictions used by port authorities for Navigational purposes.

Modernization of Tide Gauge Network of India.

Provision of Geodetic & Geophysical control for developmental projects within the country and also in adjacent countries.

Central Store Maintenance Wing (CSMW) has the role of repair, production, calibration, quality control of surveying instruments. CSMW also undertakes the manufacturing of analogue survey pattern tide gauge as and when required.

Geodetic studies for monitoring the crustal movement, dam deformation, checking of verticality of archaeological structures, earthquake studies etc.

National/International collaborative activities in the field of Geodesy and Geophysics.

Mapping of Antarctica (Maitri & Environs) region.

Research & Development Programme in Sea level studies, Glaciology, Earthquake prediction etc.

COLLABORATIVE SCIENTIFIC ACTIVITIES

Following collaborative scientific activities in the field of Geodesy and Geophysics were continued:

Magnetic data has been supplied regularly to IIG, Mumbai and also supplied to World Data Centre when ever it required.

Supply of Mean Sea Level data of 18 Indian ports to International Permanent Service for Mean Sea Level (IPSM SL), U.K. for various scientific studies by the International Geodetic Community.

Field work and processing of data for transformation parameters between WGS-84 Datum and Everest Spheroid completed.

RESEARCH AND DEVELOPMENT

The main thrust of the research and developmental activities of the Geodetic & Research Branch during the period under report has been focused towards:

Processing/ analysis of pre & post Tsunami GPS data of Antarctica for crustal deformation & seismotectonic movement studies.

Backup and archival of data received from permanent GPS stations.

Downloading of precise ephemeris of IGS stations from web sites through internet.

Adjustment of Second Level Net in India (data compilation).

Data processing/ analysis and tidal predictions for year 2011 and 2012.

As a sequel to above programs, the following activities were initiated/ completed.

Data acquisition with Global Positioning System in static relative mode to obtain transformation parameters between the Everest Spheroid and WGS-84.

Gravity data acquired for equal for crustal movement studies across faults/ thrust zones as well as for Geodetic and Geophysical studies for International Geodynamics projects is being restructured and formatted, so as to meet the requirements (of redesigned mathematical model).

PARTICIPATION IN INDIAN SCIENTIFIC EXPEDITION TO ANTARCTICA

Two officers were deputed for XXXth Indian Scientific Expedition to Antarctica and carried out the following task:

Original P.T. Survey at Larsemann Hill of surrounding area on the scale 1:5,000 and 5 m C.I. However, mapping work could not be done in Sahirmocheroasis, Maitri due to early departure of the team.

Seven days GPS observations in campaign mode was carried out at Larsemann Hills and 6 days campaign at Maitri stations to carried out plate movement studies of Antarctic plate with respect to Indian plate.

Assistance to other scientific teams participating in the expedition to help in perusing their scientific jobs through survey and allied work.

PRINTING

The following maps were printed during the year:

Maps.			Nos.
1:25,000	...	...	27
1:50,000	...	...	329
1:250,000	...	...	09
Geographical Maps & Indices	...	...	Nil
Miscellaneous Maps / Indices/ Charts etc.	...	...	243

SPECIAL PURPOSE MAPS

The following special purpose maps were also printed during the year:

Maps		Nos.
District Planning Maps	...	02
Project Maps	...	Nil
Miscellaneous Maps/ Indices / Charts etc.	...	106

MAP SALES

Maps, Digital data supplied/ sold to the Ministry of Defence, Central and State Governments and other user's agencies.

TRAINING

433 trainees including 28 extra-departmental, 12 private and 19 foreign candidates are undergoing training in various courses run by Indian Institute of Surveying & Mapping, Hyderabad as per details given in Appendix 'A'.

PUBLICATIONS

The following publications were brought out during the period under report:

Indian Tide Tables 2011

Hugli River Tide Tables 2011

Magnetic Bulletin of Sabhawala Magnetic Observatory for the Year 2008 Completed and for the year 2009 is in progress.

Geodetic report 2002 and 2003 were also published during the period under report.

CONFERENCES / SEMINARS / MEETINGS

Maj. General Dr. B.Nagarajan, Additional Surveyor General, IISM attended the 3rd meeting of Task Force held in the Committee room of Ministry of Earth Science, DST, New Delhi on 07-04-2010.

Maj. General Manoj Tayal, Additional Surveyor General and Maj. General, P.N.Koul, Additional Surveyor General, SGO attended meeting with JS(Adm) relating to MoU, signed by Govt. of Haryana and also held discussion on Aerial Photography at DST, New Delhi on 12-04-2010.

Maj General K.S. Kaliprasad, Addl. Surveyor General and Shri S.V. Singh, Deputy Director, SGO, attended meeting of Empowered Committee on Review of Restrictions in National Map Policy and Remote Sensing Data Policy constituted by Ministry of Defence on 15.04.2010 at New Delhi.

Maj. General Manoj Tayal, Addl Surveyor General, SGO attended meeting with JS(Adm) at New Delhi on 20-04-2010.

Sh. U.N.Mishra, Deputy Director, G&RB, held discussion with Solicitor General of India regarding survey work for Bellary Ore Mines at New Delhi on 16-04-10.

Sh. R.A. Nirvikar, Director, Sh. B.C. Parida, SS and Sh. Chander Kant, TO, Punjab, Haryana and Chadigarh GDC attended the CWC meeting at R.K. Puram, New Delhi on 20.05.2010.

Maj. General Manoj Tayal, Addl. Surveyor General, Maj. General, P.N.Koul, Addl. Surveyor General, Sh. Chandra Pal, Deputy Surveyor General & Smt. Jaspal Kaur Pradyot, Director, Admn. & Finance, Surveyor General's Office, attended Geo-Intelligence Asia-2010 at New Delhi from 02-06-2010 to 03-06-2010.

Maj. General Dr. B.Nagarajan, Additional Surveyor General, IISM attended expert committee meeting on Landslides at IIT, Delhi on 07-06-2010.

Shri S.V. Singh, Deputy Director, SGO, attended the meeting at MoD, New Delhi regarding Restriction Policy on 07-06-2010. He also held discussion in MEA, New Delhi regarding J&K boundary on 08-06-2010.

Maj. General Dr. B.Nagarajan, Additional Surveyor General, IISM attended the 1st meeting of the PAC & GMC of Ministry of Earth Science at Mahasagar Bhawan, 12 CGO Complex, Lodhi Road, Delhi on 22-06-2010.

Maj. General Manoj Tayal, Addl. Surveyor General, SGO attended the meeting with Addl. Director General, Military Survey on review of restriction on National Map Policy at New Delhi on 25-06-2010.

A meeting among officers of Survey of India, MoEF and World Bank held at IIS&M, Hyderabad on 21.07.2010 to discuss on various aspects related to the execution of Coastal Hazard Line Mapping Project. Survey of India delegation led by Maj. General Manoj Tayal, Addl. Surveyor General, SGO.

Maj General K.S. Kaliprasad, Addl. Surveyor General, Surveyor General's Office and other senior officers from Survey of India attended meeting with NRSC at GIS&RS, Hyderabad for technical discussions on NUIS project on 22.07.2010 and also held discussions with RTI regarding NUIS job carried out by them on 23.07.2010.

Maj. General Umesh Chander, Additional Surveyor General, International Boundary Directorate (SGO) attended 2 days Programme on Science & Technology for Homeland Security 2010 at FICCI Federation House, New Delhi from 29.07.2010 to 30.07.2010.

Maj. General Manoj Tayal, Additional Surveyor General and Maj General K.S. Kali Prasad, Addl. Surveyor General and Smt. Jaspal Kaur Pradyot, Director, Administration & Finance, SGO attended first meeting of Steering Committee for Hazard Line Mapping Component of World Bank of MoEF also attended meeting of NUIS & meeting with JS, DST, New Delhi on 09.08.2010 to 10.08.2010.

Shri Swarna Subba Rao, Surveyor General of India attended CZHMP & Faculty Selection meeting at IIS&M, Hyderabad from 30.08.2010.

130th INCA National Executive Committee meeting was held in the conference hall of Surveyor General's Office, Dehra Dun on 12.08.2010.

Shri Swarna Subba Rao, Surveyor General of India, Maj General K.S. Kali Prasad, Addl. Surveyor General, SGO, Shri R.A. Nirvikar, Director, Punjab, Haryana & Chandigarh GDC and Shri D.K. Kar, SS, SGO attended HARSAC Project meeting in the Chamber of Joint Secretary, DST, New Delhi on 10.09.2010.

Shri Swarna Subba Rao, Surveyor General of India attended meeting with Secretary (IT), Govt. of Delhi on 18.09.2010 at New Delhi.

Sh. R.M.Tripathi, Addl. Surveyor General, SGO attended meeting in NIC, New Delhi. on 23-09-2010.

Shri Swarna Subba Rao, Surveyor General of India attended 6th NNRMS SC-C meeting at NRSC, Hyderabad on 08.10.2010.

Shri Swarna Subba Rao, Surveyor General of India and Sh. M. Dharma Raj, Additional Surveyor General and Project Director, ICZM attended ICZM review meeting with MoEF at Hyderabad on 22.11.2010.

Sh. R.M.Tripathi, Addl. Surveyor General, SGO, Maj. General, S.K.Pathak, Additional, Surveyor General, and Smt. Bindu Manghat, SS, DS(A) & D GDC attended a meeting, chaired by Surveyor General of India to discuss the short falls experience by Air Force in supply of maps and charts on 27.10.2010 at Technology Bhawan, DST, New Delhi..

Maj. General Umesh Chander, Additional Surveyor General, International Boundary Directorate (SGO) attended meeting in Ministry of External Affairs, New Delhi from 10.11.2010 to 11.11.2010 in connection with 4th Indo-Bangladesh Joint Boundary Working Group.

Shri Swarna Subba Rao, Surveyor General of India attended 32nd Indian Geography Congress of National Association of Geographers India (NAGI) at Chandigarh on 19.11.2010.

Shri Swarna Subba Rao, Surveyor General of India attended 4th meeting of the NSDI – Executive Committee at NSDI, New Delhi on 30.11.2010.

Shri T. Ramaswami, Secretary to the Govt. of India, Ministry of Science & Technology inaugurated the XXXth Indian National Cartographic Association (INCA), International Congress, hosted by Survey of India at Dehra Dun on 10.11.2010.

Shri Swarna Subba Rao, Surveyor General of India and Maj. General, V.P. Srivastava, Additional Surveyor General, G&RB attended meeting with JS(Adm), DST on 12.01.2011 at New Delhi, regarding sharing of Tidal Data with INCOIS, Hyderabad.

Shri Swarna Subba Rao, Surveyor General of India and Maj. General Umesh Chander, Additional Surveyor General and Shri C.K. Pant, SS, International Boundary Directorate (SGO) attended Indo-Bhutan Govt. Level meeting in Ministry of External Affairs at New Delhi from 10.01.2011 to 11.01.2011.

Shri Swarna Subba Rao, Surveyor General of India attended Indio-Norwegian bilateral talks at IIC, New Delhi.

Shri Swarna Subba Rao, Surveyor General of India attended meeting in Department of IT, Govt. of NCT of Delhi on 17.02.2011 at Delhi.

Maj. General Umesh Chander, Additional Surveyor General, International Boundary Directorate (SGO) attended "DGBSF- DGBGB Level Border Coordination conference at New Delhi from 03.03.2011 to 04.03.2011.

Shri Swarna Subba Rao, Surveyor General of India attended the meeting at ISRO Head Quarter, Bangalore on 17.03.2011.

Sh. Chandra Pal, Deputy Surveyor General, Surveyor General's Office attended meeting in DST on 22-03-2011 at New Delhi.

Shri Swarna Subba Rao, Surveyor General of India attended meeting with Director, NRSC, Hyderabad on 28.03.2011.

TECHNICAL PAPERS

Shri Swarna Subba Rao, Surveyor General of India participated and presented a paper at XXXth Indian National Cartographic Association hosted by Survey of India during 10 to 12 Nov. 2010.

Shri Swarna Subba Rao, Surveyor General of India address the trainees and made a presentation on highlighting various important aspects of surveying & mapping to IAS trainees on "Land Records designing" on 24.02.2011 at Lal Bahadur Shastri National Academy of Administration, Mussoorie.

FOREIGN VISITS / STUDY TOURS / DEPUTATION

A survey team comprising of one Officer Surveyor, one Surveyor and eight supporting staff has been engaged in Bhutan to provide Horizontal & Vertical control for Punatsangchhu-I HE Project from 12.07.2010.

Sh. Swarna Subba Rao, Director, AP GDC visited Kuala Lumpur, Malaysia from 26.07.2010 to 28.07.2010 to participate in the "Map Asia-2010" conference

Sh. U.N.Mishra, Director, G&RB, visited to Lobesa (Bhutan) for inspection of Punatsangchhu HE Project work carried out by department on 29.08.2010 for a period of one week.

Maj. General Umesh Chander, Additional Surveyor General, International Boundary Directorate (SGO) visited Pakistan to attend India- Pakistan Bi-Annual meeting between BSF and Pak Rangers at Lahore (Pakistan) from 26.10.2010 to 30.10.2010.

Shri D.R. Singh, SS Northern Zone, Chandigarh and Shri Neeraj Kumar, SS, Rajasthan GDC, Jaipur attended the officer's Level meeting at Wagha border (Pak side) to discuss the schedule of progress of Survey work regarding India-Pakistan International Boundary.

Shri Swarna Subba Rao, Surveyor General of India visited Cape-Town (South Africa) to participate and address "Indian Geospatial Technology Summit" in Map Africa-2010 from 23.11.2010 to 25.11.2010.

VISIT TO SOI OFFICES:
Northern Printing Group, Dehra Dun

A group of students from IIRS, Dehra Dun visited on 12-04-2010.

A team of Assistant Commandants from ITBP, Dehra Dun visited on 08-06-2009.

80 students and 2 staff members from Jawahar Lal Nehru Smarak PG Collge, Maharajganj, UP visited on 30-06-2010.

44 students from IIRS, Dehra Dun visited on 26-05-2010.

23 Cadets and 2 staff members from 10 Inf Div. Sig. Regt c/o 56 APO visited on 08-06-2010.

30 Cadets and 2 staff members from R.B.Sanya College, Dehra Dun Cantt. visited on 30.07.2010.

Dr. Inder Jit Singh, Joint Secretary (Adm.) from DST, Delhi visited on 20.08.2010

35 Assistant Commandants and 200 officers from ITBP, Mussoorie visited on 22-09-2010.

91 students and 3 teachers from Head of Department, BHU, Varanasi visited on 11.10.2010.

40 students and 5 teachers from Holy Engle School, Hissar, Haryana visited on 21.10.2010.

15 officers and 1 Instructor from Ministry of Home Affairs, SSB Academy, Srinagar, Garhwal visited on 15.11.2010.

34 students from National Power Training Institute, Faridabad visited on 21.12.2010.

40 students and 2 tour incharge from Department (Geography), BHU, Varanasi visited on 05.01.2011.

30 cadets from RIMC, Dehra Dun visited on 01-02-2011.

28 students and staff members from Swami Sahyanand Janta P.G. College, Hreya, Azamgarh visited on 21-02-2011.

18 students and one staff member from Teri University, New Delhi visited on 10-03-2011.

60 students and 2 staff members from Jalandhar visited on 28-03-2011.

National Geo-spatial Data Centre, Dehra Dun

Shri R.S. Singh, Head of the Department, Geology from SSV College Hapur, Meerut visited this office with the Student on 08-04-2010.

Shri Kapil Oberai, Scientist `C` from IIRS, Dehra Dun visited this office with a group on 04.04.2010.

A group of 9 trainees with one staff members from IIRS, Dehra Dun visited this centre on 09.06.2010.

Col. R.S. Athreye from T&T Wing School of Arhillery C/o 56 APO visited this office on 10.08.2010.

A group of students from Oak Grove School Jharipani, Mussoorie visited this centre on 07.10.2010.

CULTURAL AND EDUCATIONAL ACTIVITIES

Maj. General, P.N.Koul, Additional Surveyor General, SGO attended workshop as a Chief Guest on inaugural function and also delivered keynote address at National Institute of Technology, Hamirpur (HP) from 15 to 16.04.2010. Workshop activities including visit to Snow and Avalanche Study Establishment, Manali.

The workshop on Coastal Hazard Line Mapping was held on 24.06.2010 at NSDI conference hall. Officers from Survey of India, Ministry of Environment and Forest and World Bank attended the workshop to discuss in details regarding implementing the Coastal Hazard Line Mapping project.

Hindi Pakhwada was celebrated in various offices in Survey of India located at different places from 14.09.2010 to 30.09.2010 to encourage the officers and staff to work in "Rajbhasha Hindi". Hindi essay writing, noting – drafting and quiz competition was organized during this period.

NATIONAL SCIENCE DAY

As a part of the country wide celebration of National Science Day on 28-02-2011. Survey of India organized as an open day in all offices stationed at different part of the country. The Day was celebrated by displaying the exhibits and demonstration of various modern instruments of surveying and mapping. Number of people from Science Community and teachers from different schools visited the exhibition.

DEVELOPMENT SURVEYS

The following project surveys were continued/ carried out during the year 2010 - 2011

State
Name of Project

Arunachal Pradesh:

Etalin HE Project

Bhutan:

Punatsangchhu HE Project Stage II

Chhattisgarh:

Makrana City Project

Air Strip Survey of Vanasthi Vidhyapeeth

Delhi:

Central Water Commission

Gujarat:

Kalpasar Project

ICZM Project Computer Aided Digital Mapping

Haryana:

Harsal Project

Haryana-UP Boundary Work Project

Thana-Plauni & Beri-Nichli Project

Himachal Pradesh:

Shongtong Karchhuam HE Project

Luhari HE Project

Rihand Dam Project

Jharkhand:

Coal Mine Project

Karnataka:

Nirmala Nagar Project

ICZM Project (K&L GDC)

Maharashtra:

Coal Mine Project

ICZM Project

Computer Aided Digital Mapping (Mumbai city)

Meghalaya:

NUIS Project – Tura

Coal Mine Project

Manipur:

Loktak Down Stream HE Project

Orissa:

Coal Mine Project

Punjab:

Bhakra Dam HE Project

Multanpur Urban Development Survey

Tamilnadu:

Computer Aided Digital Mapping (Chennai city) ICZM Project

Uttar Pradesh:

Rihand Dam Project

Indrapuri Reservoir HE Project

Maudha Dam Project

Uttarakhand:

Lohari-Nag-Pala HE Project

West Bengal:

Interlinking of Rivers Frakka Sunderban Link

COURSES RUN AND OFFICERS TRAINED
REGULAR/ SCHEDULED COURSES

SL NO.	COURSE NO.	NOMENCLATURE	DEPTL.	EXTRA DEPTL.	FORE IGN	OTHERS	TOTAL
1	115.18	Office Management	08	--	--	--	08
2	113.02	Record Management	05	--	--	--	05
3	320.01	Dual Trade-Digitization of Cartographic Documents	07	--	--	--	07
4	340.40	Digitization of Cartographic Documents	15	02	--	--	17
5	340.41	Digitization of Cartographic Documents	15	--	--	--	15
6	400.86(A)#	Surveying Supervisor	42	--	02	--	44
7	400.86(B)#	Surveying Supervisor	42	01	--	--	43
8	400.87#	Surveying Supervisor	10	--	--	--	10
9	400.88(A)#	Surveying Supervisor	28	--	--	--	28
10	400.89(B)#	Surveying Supervisor	03	--	--	--	03
11	400.90#	Surveying Supervisor	08	--	--	--	08
12	400.91#	Surveying Supervisor	--	--	07	--	07
13	440.15#	Digital Cartography & GIS Applications	10	01	--	--	11
14	440.16	Digital Cartography & GIS Applications	09	--	--	03	12
15	440.17	Digital Cartography & GIS Applications	04	05	--	--	09
16	480.25#	Digital Photogrammetry & Remote Sensing	--	03	--	01	04
17	480.26	Digital Photogrammetry & Remote Sensing	11	--	--	--	11
18	480.27	Digital Photogrammetry & Remote Sensing	08	--	--	01	09
19	480.28	Digital Photogrammetry & Remote Sensing	15	--	--	--	15
20	480.29	Digital Photogrammetry & Remote Sensing	14	01	--	01	16
21	500.69#	Surveying Engineer	03	--	06	01	10
22	500.70#	Surveying Engineer	03	--	--	--	03
23	500.71#	Surveying Engineer	--	--	04	--	04
24	500.72	Surveying Engineer	01	--	--	--	01
25	585.05	Map updation using Mobile Mapping System	09	03	--	--	12
26	690.19	Control and Detail Survey by GPS & total station	07	06	--	02	15
27	690.20	Control and Detail Survey by GPS & total station	03	04	--	03	10
28	700.20#	Advanced Geodesy	04	--	--	--	04
29	700.21	Advanced Geodesy	04	--	--	--	04
30	710.28	Advanced Photogrammetry & Remote Sensing	04	02	--	--	06
31	740.07#	Advanced Course on GIS	07	--	--	--	07
32	Spl.	Training on Ground Penetrating Radar (GPR)	14	--	--	--	14
33	Spl.	Training on Accounting & Procurement procedure for Coastal Hazard Line Mapping Project	31	--	--	--	31
34	Spl.	Course on GPS, Total Station and Digital Level for officials of Orissa GDC	09	--	--	--	09
35	Spl.	Training on Accounting & Procurement procedure for Coastal Hazard Line Mapping Project	21	--	--	--	21
		Total:	374	28	19	12	433

Courses continuing from previous year.

SPECIAL COURSES FOR SPECIFIC USERS

SL. NO.	COURSE NO.	NOMENCLATURE	DEPTL.	EXTRA DEPTL.	FOREIGN	OTHERS	TOTAL
1	Spl.	Course on GPS & Total Station for Land Records officials of Chhattisgarh state	--	12	--	--	12
2	Spl.	Course on Digital Photogramtry & Remote Sensing and GIS Applications for Staff for officials of DLRS, Mizoram, state	--	11	--	--	11
3	Spl.	Training on GPS & Total Station for officials of Survey & Land Records, Punjab state.	--	10	--	--	10
4	Spl.	Course on overview of Modern Survey Techniques for Revenue officials of Puducherry	--	13	--	--	13
5	Spl.	Course on Modern Surveying Techniques using GPS & Total Station for officials of Tamilnadu state.	--	15	--	--	15
6	Spl.	Course on overview of Modern Survey Techniques for Revenue officials of Puducherry	--	12	--	--	12
7	Spl.	Vocational Practical training for Engineering student	--	--	--	23	23
8	Spl.	Course on Geo-informatics for Urban and Rural Mapping for Assistant/ Associate Professors/ Research Fellows	--	--	--	16	16
9		Course on Modern Surveying Techniques using GPS & Total Station for official of Tamilnadu state	--	15	--	--	15
10	Spl.	Special Course on Digitization for official of Tamilnadu state	--	15	--	--	15
11	Spl.	Training on Modern Survey Instruments to officials of Oil Indian Ltd.	--	12	--	--	12
12	Spl.	Training on GPS & Total Station for officials of Navayuga Technologies Private Limited.	--	--	--	09	09
13	Spl.	Training on GPS & Total Station for trainees of Kerala Govt. (VI th Batch)	--	30	--	--	30
14	Spl.	Course on Photogrammetry, GIS & GPS for survey and Land Records, Andhra Pradesh.	--	14	--	--	14
15	Spl.	Course on Digital Photogrammetry for officials of NATMO	--	09	--	--	09
16	Spl.	Course on GPS & Total Station for officials & Survey & Land Records, Chhattisgarh state	--	15	--	--	15

17	Spl.	Course on GPS & Total Station for officials of Survey and Land Records, Lakhsweep.	--	08	--	--	08
18	Spl.	Use of GPS & TOTAL Station in Transmission Line Survey for APTRANSCO official of Andhra Pradesh	--	31	--	--	31
19	Spl.	Course on GPS & Total Station for officials of Survey and Land Records, Kerala – VII Batch.	--	28	--	--	28
20	Spl.	Course on Digital Photogrammetry, GIS and GPS for students of Jamia Milia Islamia University, New Delhi	--	--	--	33	33
21	Spl.	Course on Geo-informatics for Urban and Rural Mapping for Assistant/ Associate Professors/ Research Fellow	--	--	--	19	19
22	Spl.	Course on GPS & Total Station for officials of Survey and Land Records, Kerala – VIII Batch.	--	32	--	--	32
23	Spl.	Use of GPS & TOTAL Station in Transmission Line Survey for APTRANSCO official of Andhra Pradesh	--	31	--	--	31
24	Spl.	NLRMP training programme for working level officers of Revenue / Survey/ Settlement of State Government.	--	21	--	--	21
25	Spl.	Course on GPS & Total Station for officials of Survey and Land Records, Kerala – IX Batch.	--	30	--	--	30
26	Spl.	Training on Sample Integrated Database under NUIS scheme.	--	11	--	--	11
		TOTAL	--	375	--	100	475

Appendix - C**SHORT TERM AWARENESS COURSES**

SL. NO.	COURSE NO.	NOMENCLATURE	DEPTL.	EXTRA DEPTL.	FOREIGN	OTHERS	TOTAL
1	-	Seminar on GIS and other Modern trends in Mapping	--	19	--	--	19
2	-	GPS & Total Station Concept & Application	--	07	--	03	10
3	-	Datum Co-ordinates and Map Projection Concept for Advanced Map user	--	20	--	--	20
4	-	Short term Course on Photogrammetry and Remote Sensing – An over view for policy makers		02	--	--	02
		Total :	--	48	--	03	51

Appendix - D**SHORT TERM AWARENESS COURSES**

SL. NO.	COURSE NO.	NOMENCLATURE	DEPTL.	EXTRA DEPTL.	FOREIGN	OTHERS	TOTAL
1	Academic	Tech (Geomatics)- 2008-10 #	--	--	--	11	11
2	Academic	Tech (Geomatics)- 2009-10 #	--	--	--	16	16
3	Academic	.Tech (Geomatics)- 2010-12	--	--	--	16	18
		Total :	--	--	--	02 \$ 35	35

Sponsored

\$ Courses continuing from previous year.

USE OF HINDI IN OFFICIAL WORK

In accordance with the Official Languages Rules, 1976, 16 Geo-Spatial Data Centers/ Directorates/ Printing groups including headquarter of Survey of India are located in Region 'A' while 6 Geo-Spatial Data Centre in Region 'B' and 21 Geo-Spatial Data Centers/ Training Institute/ Printing groups / Zonal Offices are in Region 'C'. The position regarding the use of Hindi in the department for the year 2010-2011 remained as under:-

Correspondence

During the year 2010-2011 intensive measures were taken for transacting the official work of the union in Hindi by the various offices of the department. 6,154 documents were issued bilingually under section 3(3) of the Official Languages Act, 1963. Letters received in Hindi were replied to in Hindi. Region wise position regarding correspondence in Hindi remained as under:-

- 1) Correspondence in Hindi by the offices located in Region 'A'
 - With 'A' and 'B' Region – 83.7%
 - With 'C' Region – 66%

- 2) Correspondence in Hindi by the offices located in Region 'B'
 - With 'A' and 'B' Region – 84.8%
 - With 'C' Region – 75.9%

- 3) Correspondence in Hindi by the offices located in Region 'C'
 - With 'A', 'B' and 'C' Region – 42 %

Training

During the period under report 18 officers/employees passed Hindi Prabodh, Praveen and Pragma examination and 07 LDC's passed Hindi Typing examination, under Hindi Teaching Scheme.

Hindi workshop

With a view to acquaint with the Official Language orders/rules and the target laid down in the Annual Programme Hindi workshops were organized in Surveyor General's office, Dehra Dun; Specialized Zone, Dehra Dun, Geographical Information System and Remote Sensing Directorate, Hyderabad; Andhra Pradesh GDC, Hyderabad; Karnataka GDC, Bangalore, Printing Zone, Hyderabad.

Shri Vinod Kumar Sharma, UDC, Surveyor General's Office was awarded second prize for Hindi Essay writing competition organized under the auspicious of Town Official Language Implementation Committee, Dehra Dun.

Incentive Scheme

During the year 2010-2011 incentive schemes for noting and drafting for doing official work in Hindi, Hindi typing and Hindi stenography remained continued. Till now 26 employees of the Department have been awarded under the incentive scheme for noting and drafting in Hindi.

Hindi Day / Fortnight / Function

During the year Hindi day/Hindi fortnight/Hindi functions were organized in the month of September in various offices of the Department. To encourage the use of Hindi various competitions pertaining to Hindi were organized on this occasion and the winners were awarded. Chal Vaijayanti Running Shield was given to the Establishment -3 section for doing maximum work in Hindi in Surveyor General's Office, Dehra Dun. On this occasion prize distribution ceremony, Hindi Quiz Competition was also organized besides recitation of poems in Hindi.

Publication of in-house Magazine in Hindi

The following offices published in-house magazines in Hindi during the period under report:-

1. Surveyor General's Office, Dehra Dun	---	Sarvekshan Darpan 6-7
2. Western Printing Group, Delhi	---	Mudran Deepika.
3. Western Zone, Jaipur	---	Naya Prayas
4. Central Zone, Jabalpur	---	Dhrohar
5. Northern Zone, Chandigarh	---	Jagriti
6. Geographical Information System & Remote Sensing Directorate, Hyderabad	—	Pushpanjali
7. Southern Printing Group, Hyderabad	—	Perna
8. Assam & Nagaland GDC, Guwahati	—	Sanvedna
9. Indian Institute of Surveying & Mapping, Hyderabad	—	Pratibimb

Inspection

During this period, inspection of the three offices located at Dehra Dun namely Northern Printing Group, Map Archive & Dissemination Centre, and Digital Mapping Centre was carried out.

SCs, STs, OBCs & Persons with disabilities**SC/ST/REPORT- I****ANNUAL STATEMENT SHOWING THE REPRESENTATION OF SC's, ST's AND OBC's AS ON 01-01-2011 AND NUMBER OF APPOINTMENTS MADE DURING THE PRECEDING CALENDAR YEAR- 2010****SERVICE: MINISTRY/DEPARTMENT /ATTACHED /SUBORDINATE OFFICE: - SURVEY OF INDIA**

Groups	Representation of SCs/STs/OBCs (As on 01-01-2011)				Number of appointments made during the calendar year 2010									
					By Direct Recruitment				By Promotion			BY Deputation/Absorption		
	Total Number of Employees	SCs	STs	OBCs	Total	SCs	STs	OBCs	Total	SCs	STs	Total	SCs	STs
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Group A	173	16	8	5	1	-	-	-	-	-	-	-	-	-
Group B	501	115	55	24	-	-	-	-	14	5*	1*	-	-	-
Group C	3,617	567	229	180	11	2	2	4	107	11	5*	-	-	-
Group D (Excluding Sweepers)	2,664	737	114	60	-	-	-	-	-	-	-	-	-	-
Group D (Sweepers)	109	92	2	-	-	-	-	-	-	-	-	-	-	-
Total	7064	1527	408	271	12	2	2	4	121	16	6	-	-	-

* No Other SC/ST candidates are available even in the extended zone of consideration.

SC/ST/OBC REPORT-II**ANNUAL STATEMENT SHOWING THE REPRESENTATION OF SC's, ST's AND OBC's IN VARIOUS GROUP 'A' SERVICES AS ON FIRST JANUARY, 2011 AND NUMBER OF APPOINTMENTS MADE IN VARIOUS GRADE IN THE PRECEDING CALENDAR YEAR -2010****SERVICE: MINISTRY/DEPARTMENT /ATTACHED /SUBORDINATE OFFICE: - SURVEY OF INDIA**

Groups	Grade Pay in Rupees	Representation of SCs/STs/OBCs (As on 01-01-2011)				Number of appointments made during the calendar year 2010									
						By Direct Recruitment				By Promotion			BY Other Method		
		Total Number of Employees	SCs	STs	OBCs	Total	SCs	STs	OBCs	Total	SCs	STs	Total	SCs	STs
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
8000-13500 New=15600-39100	..... 5400	8	-	-	-	1	-	-	-	66	-	1	-	-	-
10000-15200 New=15600-39100	..... 6600	87	5	2	1	-	-	-	-	1	-	1	-	-	-
12000-16500 New=15600-39100	..... 7600	6	-	-	-	-	-	-	-	43	11	3	-	-	-
14300-18300 New=37400-67000	..... 8700	8	2	1	-	-	-	-	-	11	5	1	-	-	-
16400-20000 New=37400-67000	..... 8900	32	5	2	-	-	-	-	-	-	-	-	-	-	-
18400-22400 New=37400-67000	..... 10000	32	1	1	-	-	-	-	-	-	-	-	-	-	-
New=75500 (Annual increment @ 3%)	..... Nil	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		173	13	6	1	1	0	0	0	121	16	6	0	0	0

NOTE: If scales of pay in any service are different, applicable scales in the service may be indicated in column 1.

**ANNUAL STATEMENT SHOWING THE REPRESENTATION OF THE
PERSONS WITH DISABILITY IN SERVICES
(As on 01-01-2011)**

MINISTRY/DEPARTMENT: Ministry of Science & Technology
ATTACHED/SUBORDINATE OFFICE: Survey of India

GROUP	Number of Employees				
	Total	In Identified Posts	VH	HH	OH
1	2	3	4	5	6
Group A	173	1	-	-	1
Group B	501	4	-	-	4
Group C	3617	35	-	1	34
Group D	2773	3	-	1	2
Total	7064	43	-	2	41

Note: (I) VH Stands for Visually Handicapped (persons suffering from blindness or low vision)
(II) HH Stands for Hearing Handicapped (persons suffering from hearing impairment)
(III) OH stands for Orthopaedically Handicapped (persons suffering from locomotor disability or cerebral palsy)

**STATEMENT SHOWING THE NUMBER OF PERSONS WITH
DISABILITIES APPOINTED DURING THE YEAR
(FOR THE YEAR-2010)**

MINISTRY/DEPARTMENT: Ministry of Science & Technology
ATTACHED/SUBORDINATE OFFICE: Survey of India

GROUP	DIRECT RECRUITMENT							PROMOTION						
	No. of vacancies reserved			No. of Appointments Made				No. of vacancies reserved			No. of Appointments Made			
	VH	HH	OH	Total	VH	HH	OH	VH	HH	OH	Total	VH	HH	OH
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
GROUP A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GROUP B	-	-	-	-	-	-	-	-	-	-	-	-	-	2
GROUP C	-	-	2	2	-	-	2	-	-	2	2	-	-	2
GROUP D	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	2	2	2	-	2	-	-	2	2	-	-	2

Note: (I) VH Stands for Visually Handicapped (persons suffering from blindness or low vision)
(II) HH Stands for Hearing Handicapped (persons suffering from hearing impairment)
(III) OH stands for Orthopaedically Handicapped (persons suffering from locomotor disability or cerebral palsy).