VIVEKANANDA COLLEGE
THAKURPUKUR
KOLKATA-700063

NAAC ACCREDITED ‘A’ GRADE

Topic: Principal National agencies producing maps/ thematic maps
Course Title: Thematic Mapping and Surveying
Paper: Core Course 4
Unit: 1
Semester: 2nd
Name of the Teacher: Kunaljeet Roy
Name of the Department: Geography

NATMO --

National Atlas and Thematic Mapping Organization is a specialized institution of its kind in the world. This organization was assigned with responsibility in the field of thematic cartography and geographical research at national level. It has grown in size, activities, popularity and prestige since its inception and has established itself by making substantial contribution towards the nation's effort for socio-economic revival.

A subordinate office under Department of Science & Technology, it is the sole authority for depicting National framework data in the form of thematic maps and atlases to cater the actual picture of the development and planning initiatives of the country among the users. Keeping pace with the modern state of the art technologies and also to achieve the goal as per its mission in the arena of geo-spatial technologies, NATMO has already progressed a lot.

Major Functions

1. Compilation of the National Atlas of India
2. Preparation of the National Atlas maps in regional languages
3. Preparation of thematic maps based on research studies on environmental and associated aspects and their impact on social and economic development
4. Any other work entrusted by the Central Government or its agencies to NATMO
5. Installation of automated Mapping System for increasing speed and efficiency in mapping
6. Division of Digital mapping System &Digitized and Scanning of existing maps on digital format
7. Geographical Researches
8. Remote Sensing &GIS, Digital Image processing
9. Division on Cartography for the Visually Impaired
10. Capacity and Infrastructure building of NATMO to convert / to upgrade in digital mode.

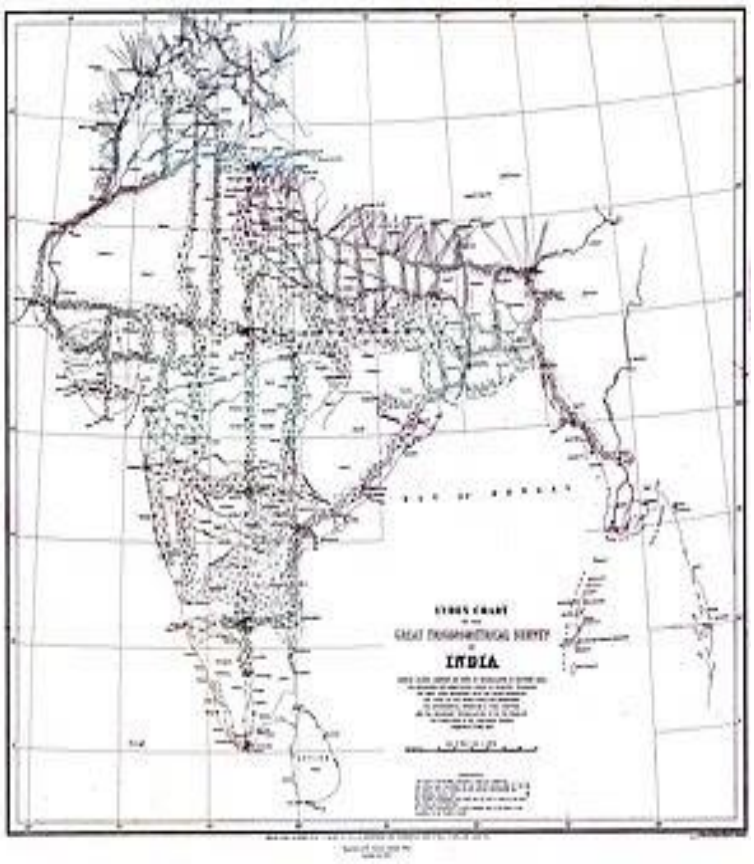
The plan of compiling a National Atlas of India was formulated for the first time in this country by Prof. S.P.Chatterjee, the then Professor of Geography, Calcutta University. A discussion on

this subject with late Pandit Jawaharlal Nehru in 1953 resulted in his instant approval of the project. The then Ministry of Natural Resources & Scientific Research after consultations with other Ministries decided to set up an Advisory Board in March 1954 for formulating a scheme for preparation of National Atlas of India. The Advisory Board gave a favourable report and also provided a tentative guideline about the scope and contents of the atlas. Subsequently in April 1954 the same Ministry sanctioned a skeleton staff of 7 posts on a temporary basis to help Professor S.P.Chatterjee in giving shape to the Board's suggestions.

Survey of India--

The National Survey and Mapping Organization of the country under the Department of Science & Technology, is the OLDEST SCIENTIFIC DEPARTMENT OF THE GOVT. OF INDIA. It was set up in 1767 and has evolved rich traditions over the years. In its assigned role as the nation's Principal Mapping Agency, Survey of India bears a special responsibility to ensure that the country's domain is explored and mapped suitably, provide base maps for expeditious and integrated development and ensure that all resources contribute with their full measure to the progress, prosperity and security of our country now and for generations to come.

The history of the Survey of India dates back to the 18th Century. Forerunners of army of the East India Company and Surveyors had an onerous task of exploring the unknown. Bit by bit the tapestry of Indian terrain was completed by the painstaking efforts of a distinguished line of Surveyors such as Mr. Lambton and Sir George Everest. It is a tribute to the foresight of such Surveyors that at the time of independence the country inherited a survey network built on scientific principles. The great Trigonometric series spanning the country from North to South East to West are some of the best geodetic control series available in the world. The scientific principles of surveying have since been augmented by the latest technology to meet the multidisciplinary requirement of data from planners and scientists.



Organized into only 5 Directorates in 1950, mainly to look after the mapping needs of Defense Forces in North West and North East, the Department has now grown into 22 Directorates spread in approx. all parts (states) of the country to provide the basic map coverage required for the development of the country. Its technology, latest in the world, has been oriented to meet the needs of defense forces, planners and scientists in the field of geo-sciences, land and resource management. Its expert advice is being utilized by various Ministries and undertakings of Govt. of India in many sensitive areas including settlement of International borders, State boundaries and in assisting planned development of hitherto under developed areas.

Faced with the requirement of digital topographical data, the department has created three Digital Centers during late eighties to generate Digital Topographical Data Base for the entire country for use in various planning processes and creation of geographic information system. Its specialized Directorates such as Geodetic and Research Branch, and Indian Institute of Surveying & Mapping (erstwhile Survey Training Institute) have been further strengthened to meet the growing requirement of user community. The department is also assisting in many scientific programs of the Nation related to the field of geo-physics, remote sensing and digital data transfers.

NRSA (now NRSC)--

Considering the importance of the activities carried out in the area of aerial and satellite remote sensing, the National Remote Sensing Agency (NRSA), an autonomous society under Department of Space (DOS) has been converted into a full-fledged Government organisation called National Remote Sensing Centre (NRSC) from today (September 1, 2008).

NRSA was established as a registered society under the Department of Science & Technology in 1974 with the objective of undertaking and facilitating remote sensing activities in the country. The administrative control of NRSA was transferred to the Department of Space during early eighties and with the growth of indigenous efforts in space borne remote sensing, NRSA played a major role in the ground segment under the Indian Remote Sensing Programme. NRSA, through its training establishment Indian Institute of Remote Sensing (IIRS), Dehra Dun, has become an institution of international repute for capacity building.

It is expected that, with the conversion, NRSC will, as part of the Indian Space Research Organisation (ISRO), fully integrate with other ISRO Centres in the development and operations of the ground segment of the large constellation of India Remote Sensing Satellites and will also take a bigger role during the R&D phase of IRS programme.

NRSC as a Government entity, is expected to fulfill its goals playing a major role in important national programmes, through linkages with all concerned Government departments/agencies

such as Ministries of agriculture, water resources, urban development, Home Affairs, etc., including the National Disaster Management Authority (NDMA).

Geological Survey of India (GSI)

The beginning of geological investigation in India was in the early part of the nineteenth century. A few amateur geologists associated with the Survey of India and Army initiated geological studies in the country. H.W. Voysey (1818-1823) of the Great Trigonometric Survey made the first Geological Map of Hyderabad region along with a detailed report. A committee for "The Investigation of Coal and Mineral Resources" was set up in 1837. The Secretary of the Committee John McClelland made the appointment of the first professional geologist. D. H. Williams was the first Geological Surveyor appointed by the East India Company in 1846. John McClelland for the first time used the term Geological Survey of India in his report in 1848. He designated himself as officiating Surveyor, Geological Survey till 1st April 1850. The Geological Survey of India (GSI) was set up in 1851 primarily to find coal deposits for the Railways. The arrival of Sir Thomas Oldham, Professor of Geology at Trinity College Dublin and the Chief of Irish Geological Survey at Calcutta on 4th March 1851, marked the beginning of the continuous period of the Geological Survey of India. Over the years, it has not only grown into a repository of geo-science information required in various fields in the country, but has also attained the status of a geo-scientific organisation of international repute. The main functions of GSI relate to creation and updation of national geoscientific information and mineral resource assessment. These objectives are achieved through ground surveys, air-borne and marine surveys, mineral prospecting and investigations, multi-disciplinary geoscientific, geo-technical, geo-environmental and natural hazards studies, glaciology, seismotectonic study, and carrying out fundamental research. Outcome of work of GSI has immense societal value. Functioning and annual programmes of GSI assume significance in the national perspective.

GSI, headquartered at Kolkata, has six Regional offices located at Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata and State Unit offices in almost all States of the country. Presently, Geological Survey of India is an attached office to the Ministry of Mines.

If we go through the chronology behind the establishment of GSI, as found in their official website:

1821 First Geological Map of parts of India was of Hyderabad region by Dr H. W. Voysey

1840 Museum of Geology established in Calcutta in three rooms of Asiatic Society of Bengal

1846 D. H. Williams of British Geological Survey appointed geologic advisor to the East India Company for the purpose of carrying out geological survey of three coal bearing districts. He developed a number of deposits in Raniganj, Jharia and Karanpura coal fields

1851 Thomas Oldham arrived in Calcutta on 4th March and took charge of office on 5th March, 1851, which marks the establishment of the Geological Survey of India.

1951 M. S. Krishnan becomes the first Indian to be a Director of the Geological survey of India

After independence, the country undertook programme of planned development. Since then governmental policies and priorities are going through paradigm shifts in response to the market forces. GSI has been reciprocating to these changing scenarios time and again in a prompt and apt manner.

In 2001 GSI celebrated **150 years** of its dedicated service to the nation
The GSI publishes maps and necessary reports which helps researchers, geo-scientists and policy makers regarding achieving new dimensions of scholarly attention towards discovering new facets of earth science.

NBSSLUP (National Bureau of Soil Survey and Land Use Planning)

Subsequent to the recognition of Soil Survey as a National Priority in 1947, a need was felt for creating a centralized information warehouse to assimilate, verify and disseminate information on the nature, extent and distribution of soils in the country. Consequently, the Government launched All-India Soil Survey Scheme in 1956, which expanded in 1959 as the All-India Soil and Land Use Survey Organisation (AIS&LUS). In 1969, the AIS&LUS was bifurcated into two wings, one being under the Indian Council of Agricultural Research (ICAR). It was later in 1973 reconstituted as a Directorate through a Presidential Notification. The Directorate was accorded the status of a Bureau in 1976 and was named as National Bureau of Soil Survey and Land Use Planning (NBSS&LUP) with its Head quarters. at Nagpur, Maharashtra. It is one of the fourteen Natural Resource Management (NRM) institutes of the ICAR entrusted to conduct RD&T activities mainly in soil survey, remote sensing applications, land evaluation and land use planning.

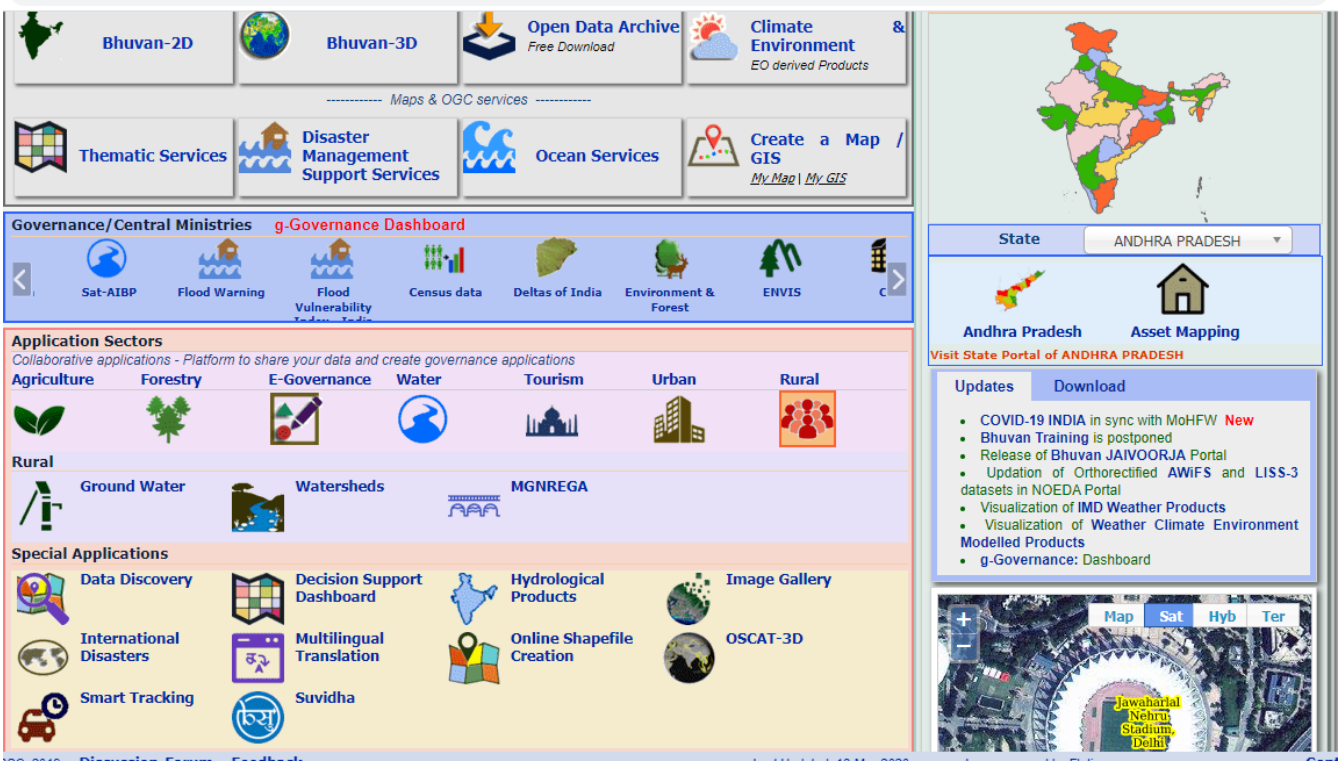
Objectives:

- To stimulate research and to collect, collate and disseminate information relating to all aspects of soil survey, pedology and land use planning.
- To sponsor and organize symposia, seminars and conferences which provide forum for presentation of papers in all areas of soil survey, pedology and land use planning.
- To publish journal, bulletins, reports and other publications to achieve the objectives of the Society.
- To present a common forum for scientists working in soil survey, pedology and land use planning where they can discuss topics of mutual interest.
- To enhance the education and teaching standards in soil survey, pedology and land use planning.
- To work in association with other national and international societies having similar objectives.
- To undertake all other activities that may assist in the fulfillment of the above objectives of the Society.

BHUVAN

Bhuvan, is the national Geo-portal developed and hosted by ISRO comprising of Geo Spatial Data, Services and Tools for Analysis. It has many versatile features, for Example (1) Visualization of Satellite Imagery and Maps (2) Analysis (3) Free Data Download and (4) Download Reports to name a few. The Satellite Imageries are of Multi-sensor, Multi-platform and Multi-temporal in nature can be visualized in 2D and 3D. Varieties of thematic maps are also hosted for analysis of various natural resources themes. Bhuvan platform supports many applications that address Governance and other Geo Spatial applications that are being used by the Central and State Governments Departments, Academia and Industry. Visit Bhuvan to view online Geospatial maps

If we go through the Bhuvan web portal designed by ISRO, we will find various and multi-faceted utilities of the geo-enabled satellite mapping:



Here we are getting its various application over the required geographical and social spheres helping mankind, like agriculture, forestry, e-governance, water resource, tourism, disaster management, heritage management and many more. The maps produced in 2D and 3D advanced platforms helps spatial research in numerous ways and thus provide a strong platform to interact over necessary academic attainment.