

Report on
88- IIRS ISRO Outreach Programme
on
“Basics of Geographical Information System”
(Human Resource Development Center, Integral University, Lucknow)
September 27, 2021 to October 22, 2021

Human Resource Development Centre (HRDC), Integral University Lucknow is one of the Remote Center of Indian Institute of Remote Sensing (IIRS), Indian Space Research Organization (ISRO), Department of Space, Govt. of India, Dehradun, India. Human Resource Development Centre, Integral University, Lucknow had successfully organized the 88- IIRS ISRO Outreach Programme on “**Basics of Geographical Information System**” from September 27, 2021 to October 22, 2021 for working professionals and students in association with Indian Institute of Remote Sensing, Indian Space Research Organization, Department of Space, Govt. of India, Dehradun.

Indian Institute of Remote Sensing (IIRS) under Indian Space Research Organization (ISRO) is a premier Training and Educational Institute set up for developing trained professionals in the field of Remote Sensing, Geo Informatics and GNSS Technology for Natural Resources, Environmental and Disaster Management. Formerly known as Indian Photo-interpretation Institute (IPI), founded in 1966, the Institute boasts to be the first of its kind in entire South-East Asia.

Prime focus of 88-IIRS ISRO Outreach Programme was Introduction to Basics of Geographical Information System. Important Topics included in programme are:

1. Fundamentals of Geographical Information System

We are presently positioned at the beginning of the twenty first century with the fast growing trends in computer technology information systems and virtual world to obtain data about the physical and cultural worlds, and to use these data to do research or to solve practical problems. The current digital and analog electronic devices facilitate the inventory of resources and the rapid execution of arithmetic or logical operations. These Information Systems are undergoing

much improvement and they are able to create, manipulate, store and use spatial data much faster and at a rapid rate as compared to conventional methods.

2. Maps

A map is a two dimensional representation of earth surface which uses graphics to convey geographical information. It describes the geographical location of features and the relationship between them. Maps are fundamental to society. Cartography refers to the art and science of map preparation. Though, the earliest of the maps were technically not as impressive as they are today but they certainly highlighted their role in communicating information about the location and spatial characteristics of the natural world and of society and culture.

3. Map Scales

Scale is important for correct representation of geographical features and phenomenon. Different features require different scales for their display. For example preparation of a cadastral map of a village and the soil map of a state would use different scale for representing the information. According to scale, maps can be classified as follows:

- a.** Cadastral : These maps register the ownership of land property. They are prepared by government to realize tax and revenue. A village map is an example of cadastral map which is drawn on a scale of 16 inches to the mile or 32 inches to the mile.
- b.** Topographical: Topographical maps are prepared on fairly large scale and are based on precise survey. They don't reveal land parcels but show topographic forms such as relief, drainage, forest, village, towns etc. The scale of these maps varied conventionally from 1/4 inch to the mile to one inch to the mile. The topographical maps of different countries have varying scales. Topographical survey map of British Ordnance Survey are one inch maps.

4. Representative fraction

It is expressed in fraction. If the scale is 1:50000, it means that 1 unit of measurement on map represents 50,000 units on ground. It is also known as numerical scale. The distance on map and the distance on the ground must be in the same units of length. The advantage of this scale is that- it can be read into different units of length. For example the map with a scale 1:50,000 would mean that a distance of 1 cm on ground represents 50,000 cm on the ground or it can also be said that a distance of 1 feet on ground represents 50,000 feet on ground.

The technical sessions constituted of a wide variety of topics taken by a team of expert's viz.: Overall **Twenty participants** attended the program and got benefitted from the much needed and timely insights on GNSS.

