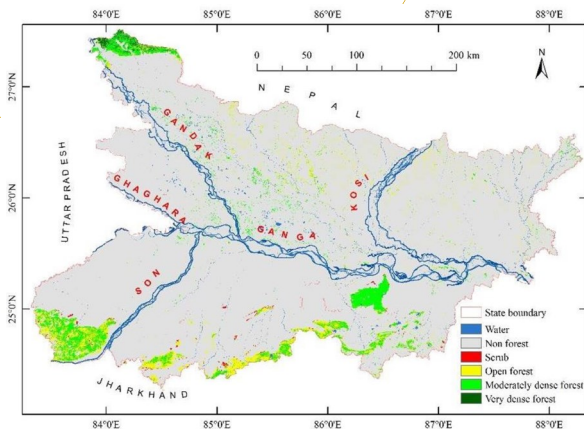


# APPLICATION OF REMOTE SENSING, GIS AND GPS IN FOREST RESOURCE ASSESSMENT



*Training program aims to equip the participants with essentials of RS-GIS and GPS. Participants are expected to get enough exposure for the hands-on exercise to make them handle licensed (ArcGIS and ERDAS) and free-open-source RS-GIS software. The program will equip participants to test and apply the tools of RS-GIS for developing needed maps. The program is aimed for mid-career professionals, students and researchers whose work demands use of RS-GIS applications who have no any prior exposure to RS-GIS tools.*

7 - 11 SEPTEMBER, 2020

**Course Director:**

Dr. Manoj Kumar  
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*Training will be imparted by the trained professional having vast experience of working in the field of remote sensing and GIS. Training will be hosted by the Forest Informatics Division of Forest Research Institute (FRI), Dehradun. FRI is a flagship research institute of Ministry of Environment, Forest and Climate Change, Government of India under the aegis of Indian Council of Forestry Research and Education (ICFRE). Established in 1906 as Imperial Forest Research Institute, it has a long history of forestry and allied research.*



**Day 1 (7<sup>th</sup> September), 09:00 am to 11:00 am**

Remote Sensing (RS): Principles of remote sensing; Indian Remote Sensing Satellites and Sensors, Recent RS&GIS technological trends. (Faculty: Dr. SPS Kushwaha, Senior Scientist and Ex-Dean, Indian Institute of Remote Sensing (IIRS), Dehradun)

Presentation of selected topic by individual participants with proposed methodology where he/she wishes to use RS-GIS tools, maximum 5 to 7 slides within 10 minutes for each.

**11:00 am to 1:00 pm and 02:00 pm to 5:30 pm**

Licensed and open source software for RS-GIS. Installation of open source software on individual laptops. Demonstration of essential tools of licensed and open source software. Sources for free satellite data downloading. Hands on exercise for downloading of satellite data and its handling. Basic image handling procedures like layer stacking and mosaicking. Forest cover mapping. (Faculty: Mr. Ajay Kumar, Forest Research Institute (FRI), Dehradun, Mr. Ram Kumar, HEXAGON Geospatial)

**Day 2, 09:00 am to 01:00 pm and 02:00 pm to 5:30 pm**

Hands on training on: Geo-referencing and geocoding; Sub setting and mosaicking; Digitization of boundaries of important features; Entry of spatial and non-spatial data; Land use and land cover classification; Transfer of GPS data in GIS database and Map composition. (Faculty: Mr. Anoop Kumar, FID, FRI)

**Day 3, 09:00 am to 01:00 pm and 02:00 pm to 5:30 pm**

Geographical Information System (GIS): Introduction to GIS; Spatial and non-spatial database for GIS analysis; Spatial (Vector and Raster) and Non-spatial (Hierarchical, Network and RDBMS) data models; Coordinate systems, datum and projections; Digital elevation models and their applications; Applications of GIS. Hand on training for using "Google earth" services. Global Positioning System (GPS): Overview and principles of GPS and other Navigation Systems: Surveying methods and field data integration with GIS. (Faculty: Dr. Manoj Kumar, FID, FRI)

**Day 4, 09:00 am to 01:00 pm and 02:00 pm to 5:30 pm**

Application of RS-GIS: Forest Resource Inventory; Land use and Land cover mapping; Soil survey and mapping; Ecosystem analysis; Biodiversity characterization and management; Watershed characterization; Forest change detection and monitoring; Forest fire monitoring and modelling. (Faculty: Dr. Amit Kumar Verma, FRI, and Dr. Rajiv Pandey, FRI)

TerrSet geospatial monitoring and modelling: Software for monitoring and modeling the earth system for sustainable development; IDRISI Image Processing for image restoration, enhancement, transformation and classification of remotely sensed imagery; Land Change Modeler for land planning, decision support, land change analysis and prediction with a special facility for REDD project-level modeling; Habitat and Biodiversity Modeler for habitat assessment, landscape pattern analysis and modelling, species distribution modelling (SDM) using MaxEnt and R. (Faculty: Dr. Manoj Kumar, FID, FRI)

**Day 5 and Day 6, 09:00 am to 01:00 pm and 02:00 pm to 5:30 pm**

Short exercises based on interest of individual participants. Trouble and query handling of individual participants. (Faculty: Dr. Manoj Kumar, Mr. Anoop Kumar, Mr. Ajay Kumar, Dr. Amit Kumar Verma) and distribution of certificates.

6<sup>th</sup> Day course will be optional (on request) for handling individual queries.

**(Breaks on all five days - Lunch: 01:00 pm to 02:00 pm, Tea breaks: 11:00 am to 11:15 am and 4:00 pm to 04:15 pm)**

**Course fee:** ₹ 13,200/- Thirteen thousand two hundred only (includes institutional charges @20%). Course fee includes charges for the course tea, lunch, dinner and training kit. Boarding and lodging facility will be provided to all participants without any extra charges, however travel costs for attending training has to be borne by the participants.

The requisite course fee is to be submitted in the form of Demand Draft (DD) in favor of **Director, Forest Research Institute, Dehradun**, and Payable at **Dehradun OR through Online Transaction** in the Union Bank of India, FRI Branch, Dehradun, Saving Account Number: 49690 20100 88942, Account Name: RSGIS Training, Account type: Saving, IFSC: UBIN 0549690, MICR: 248026003, PAN/TAN No.: MRTE00564E

**How to apply:** You just need to email your willingness for participation with your contact details (phone no. and email) and address for correspondence. You are also requested to submit desired fee in the form of DD or through online transaction. Demand Draft (through post) or the details of online transaction (through email) should reach by 20<sup>th</sup> August, 2020. Participants are advised to plan their journey only after confirmation from our side as we will restrict the participation up to limited numbers (not exceeding more than 10, nominations from forest departments will be additional) to ensure enough exposure with adequate hands on exercise. To confirm your seat email us your willingness along with proof of online payment or scanned DD and speed post the same at earliest.

Applications will be shortlisted based on the training needs of applicants and first come, first served basis.

**All participants are expected to come with their own laptops (along with good quality mouse), so that we can assist in installing open source software on individual laptops.**

**For further information please feel free to contact us.**

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