

Module 5: Forest modeling, GIS and remote sensing

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Nowadays, the Geographic Information System (GIS) has become a key decision-making tool in many policies including land use planning, climate change predicting, forest management, etc. It is a computer-based tool that captures, analyses, stores, manipulates and displays geographic information in different dimensions. It is very essential in almost all life sectors. It can for example be used for data mining, to refine data processing/analysis and facilitate their synoptic and pictorial representations; thus making it more attractive in any kind of work. Despite this usefulness, GIS remains a myth for many students and researchers in our areas. Mastering this tool can help in time saving in several fields and improve efficiency.

This module will offer participants a perfect starting point in GIS and remote sensing applications in various research fields including forest modelling. It will provide a brief theoretical background on GIS and remote sensing, and allow participants to be able to handle spatially referenced data. Finally, it will focus on species distribution modelling, a very important tool for conservation issues. The main points to cover are:

- Background on GIS and remote sensing
- The interface of QGIS or ArcGIS
- Creation and manipulation of Vector Data
- Creation and manipulation of Imagery Data
- Habitat suitability modelling in conservation and domestication perspective