PROJECT WORK ON NATURAL RESOURCE MANAGEMENT USING RS-GIS

Unit-1
Overview of Applications of RS-GIS

A-Natural Resource Evaluation and Management

Natural Resource Evaluation and Management

- In natural resource management, remote sensing and GIS is mainly used in the mapping process. These technologies can be used to develop a variety of maps. Examples include:
  - Land use & land cover maps
  - Vegetation maps
  - Soil maps
  - Geology maps
  - Digital terrain modelling

Application of GIS Data in Forest Management

- With the help of remote sensing and GIS data, a forest manager can generate information with regards to
  - Forest cover
  - Types of forest
  - Human encroachment into forest land/protected areas
  - Encroachment of desert
  - Forest fire
- This information is critical in the development of forest management plans and in the process of decision making to ensure that effective policies have been put in place to control and govern the manner in which forest resources is utilized.

Application of GIS Data in Forest Management

- Application in Agriculture
- Application in Soil Science
- Application in Crop-Irrigation Demand Monitoring
- Application in Water Resource management
- Application in Crop Modelling
- Forest Management and wildlife habitat analysis
- Application in Water Quality Monitoring
- Application in Natural Disaster Management
- Change detection
- Application of GIS Data to Combat Desertification

Unit-1
Overview of Applications of RS-GIS

B-Urban planning and management

Urban planning and management

- Water supply
- Urban encroachments in fringe area
- Inadequate sewerage
- Traffic congestion
- Pollution
- Urban governance
- Maintain healthy urban environment
- Solid waste management
- Urban planning process
- Infrastructure development

Unit-1
Overview of Applications of RS-GIS

C-Land use Planning and Management

Land use Planning and Management

- Land Use/Land Cover Change Detection
- Mapping and management of land resources
- Aagricultural resources surveys
- Agroecological zonation
- Land degradation mapping and assessment
- Soil moisture estimation
- Soil fertility mapping and assessment
- Crop acreage estimation
- Crop yield forecasting
- Water resources planning and management
- Development of land resource information
- Development of land use options

Unit-1
Overview of Applications of RS-GIS

D-Environmental Management
&
Hazard Mapping

Environmental Management & Hazard Mapping

- Environmental degradation,
- Environmental monitoring and disaster management.
- Earthquakes, landslides, floods, fires, tsunamis, volcanic eruptions and cyclones
- Pre-Post change detection after disaster
- Decreasing glacier area
- Growth in glacial lake size
- Floods and glacial lake outburst flood
- Landslide and erosion modelling
- Evaluation of the pollution sources
- Impact of human activities on the environment
- Desertification mapping

Udaipur

- Slums
- Solid waste management
- Ahar (Encroachment, Pollution, Future Planning etc.)
- Lakes (Encroachment, Pollution, Future Planning etc.)
- Marble slurry
- Tourism places
- Step wells
- Change in forest area
- Change in agriculture area
- Next settlement development
- Development phases of Udaipur
- Crime Mapping
- Forest fire

Application of GIS Data in Watershed Management

- **Water bodies such as rivers, lakes, dams etc.**
- **Reservoirs can be mapped in 3D with the help of GIS technology.**