



USING GIS AND REMOTESENSING, WATER RESOURCE MANAGEMENT IN MASAI PLATEAU

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INTRODUCTION

- Water is a basic resource of biosphere on Earth and Ecosystem. Water is also important for living organism including mankind and for development and survival of plant community.
- Present study has based on water resource management of the Masai Plateau area, which having hilly and mountains area that is Sahyadri mountain ranges. It has suffering from the water stress. There were lot of water resources e. g. springs and wells and bore well's but water strategies are absent that result there were various problems with water that is drinking fresh water, and agricultural irrigation area also.

STUDY AREA

- The Kolhapur district is a part of Deccan plateau and western Maharashtra. The Masai Plateau is a part of Sahyadri Hills ranges with dense forest. The absolute location of Kolhapur district is $15^{\circ} 45'$ north to $17^{\circ} 17''$ North latitudes and $73^{\circ} 40'$ east to $74^{\circ} 40'$ east longitude. Total area of the district is 7746 km². Which is 2.5 % of the state. The general height of the district is 1000 mtrs and Masai Plateau is 120 mtrs from the mean sea level.
- The population of Kolhapur district is 35,23,162 according to census 2001.

SIGNIFICANCE OF THE STUDY

- Masai Plateau is having a good water resources such as springs, wells and bore wells of mountainous area. Availability of information and spatial data for this resources are more significant to conservation, management of water resources for the study area. Hence for systematic conservation, presentation of water resources it is necessary attempt to the micro level study to generate useful data base for better planning and management.

OBJECTIVES

- To study the use of availability of natural stream or spring water, which have to drinking, domestic, livestock and agriculture use of dissipate.
- How does water conservation of local level? Participation of villager's and social awareness with encouragement. Through the education, regulation, incentives for water harvesting.
- To study water resources development and management in the study region.
- To provide suggestions and recommendation to conservation, presentation and management for water resources in the study region.

DATABASE AND METHODOLOGY

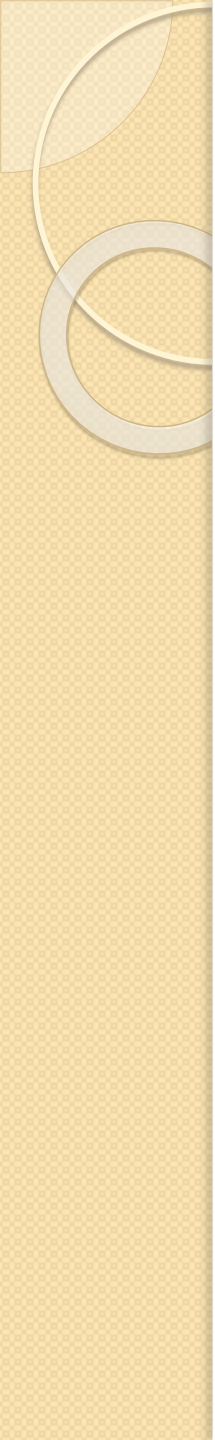
- Primary data will be collected by conducting field survey for micro level studies of the available resources under consideration.
- Secondary data will be collected from census recorded, Govt. publications and statistical reports that will be analysis GIS software. Gazette of Kolhapur districts, Department of Geology record.
- Surveying will be conducting by using GPS.
- Springs, wells, and boar well water velocity will be collected from the selected sites for the determine the water flow and discharge and volume of water and statistical analysis.
- Statistical technique will be use to data analysis, cartographic technique use to draw the maps and diagrams with the help of GPS, RS and GIS techniques.

YEAR WISE PLAN

SR. NO.	WORK	PERIOD	OBJECTIVE
1	Collection of primary & Secondary data	1 st Year	To collect data
2	Field Work	1 st Year	To get work site information
3	Preparation of rough draft	2 nd Year	To prepare draft report writing
4	Report writing	2 nd Year	To prepare a project report and its submission

FINANCIAL ASSISTANCE REQUIRED

SR. NO.	EXPENDITURE	FONDS (RS)
1	Books and Journals	50,000
2	Fieldwork	50,000
3	Laptop and Camera (Quotation Enclosed)-Instruments	75,000
4	Contingency	17,500
	Total	1,92,500



REMOTE SENSING: A IMPORTANT TOOLS IN GEOGRAPHICAL RESEARCH



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(M.A. SET,NET, Ph.D.)

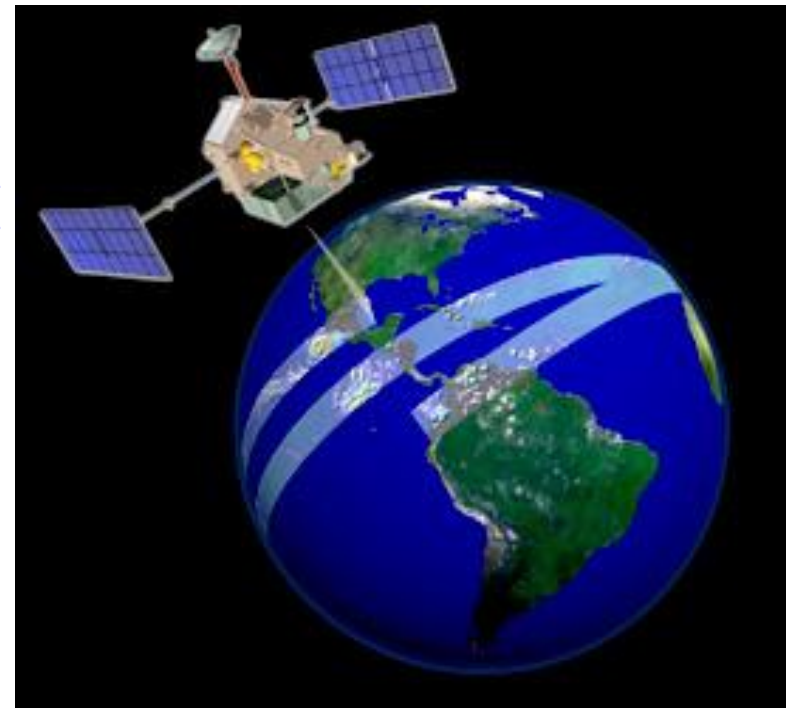
Assistant Professor,

HOD, Geography,

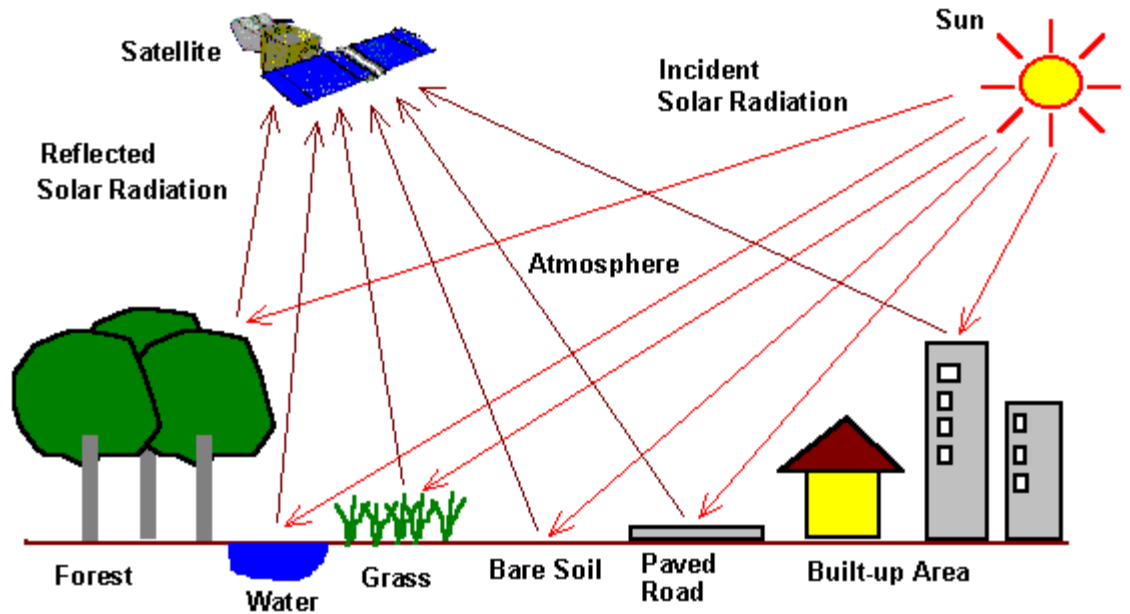
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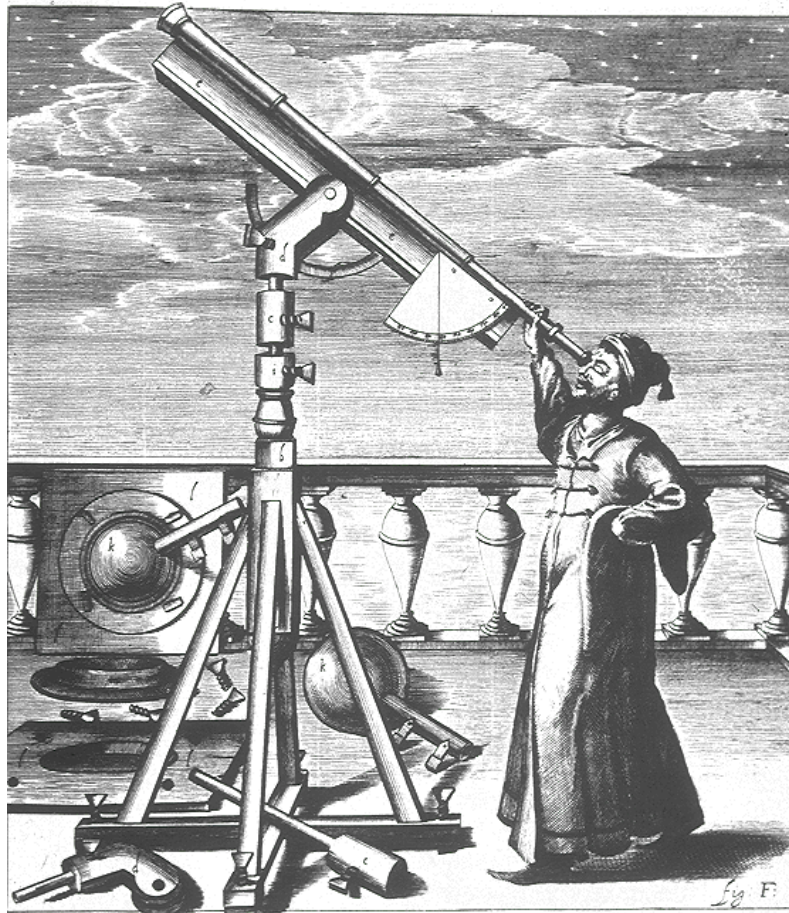
REMOTE SENSING



- Remote-Sensing means obtaining information about an object without touching itself.
- Remote-Sensing is data acquisition of electromagnetic radiation from sensors flying on aerial flying or space platform.

History of Remote Sensing

1609 - Invention of the telescope



Galileo

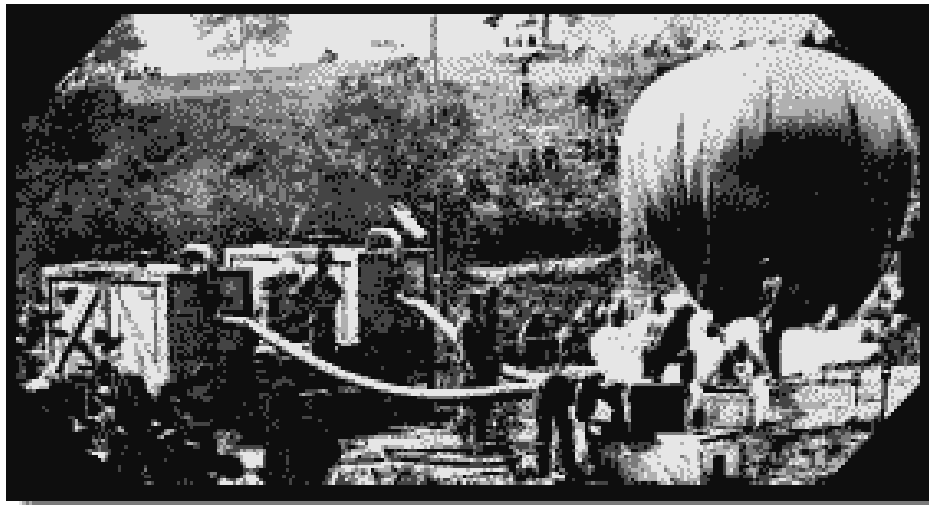
History of Remote Sensing

1859 - First aerial photographer

Gaspard Felix Tournachon, also known as Nadar



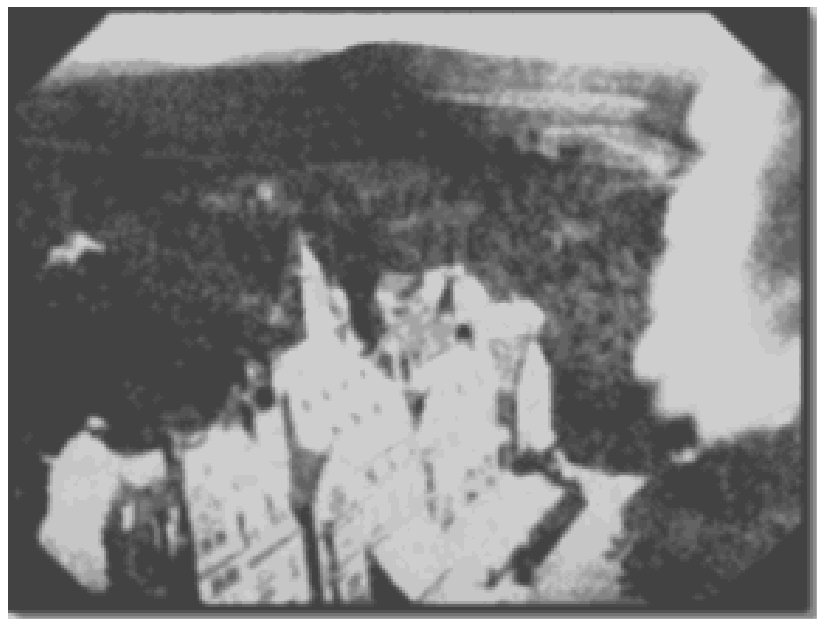
1862 - US Army balloon corp



History of Remote Sensing



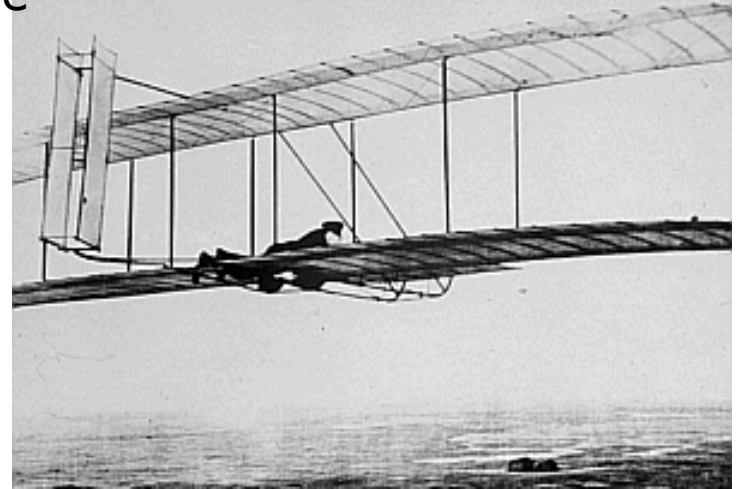
1903 - The Bavarian Pigeon Corps



1909 - Dresden International
Photographic Exhibition

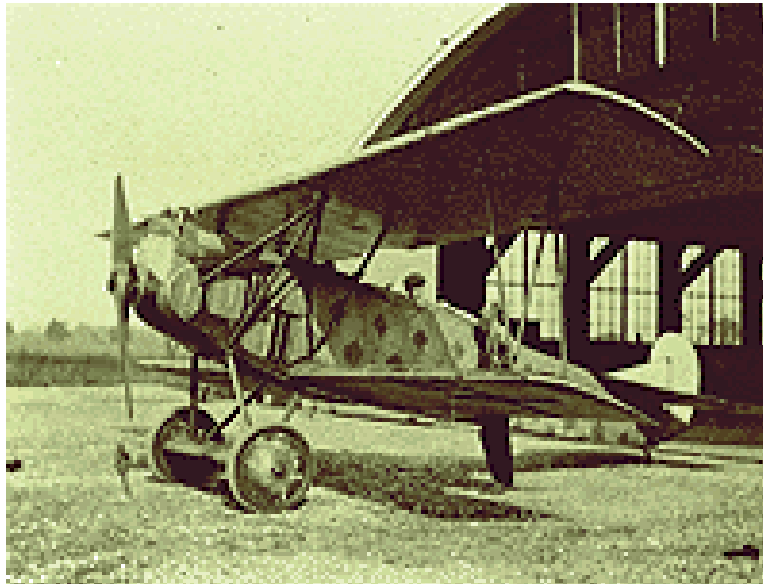
History of Remote Sensing

1908 - First photos from an airplane



First flight, Wright Bros., Dec. 1903

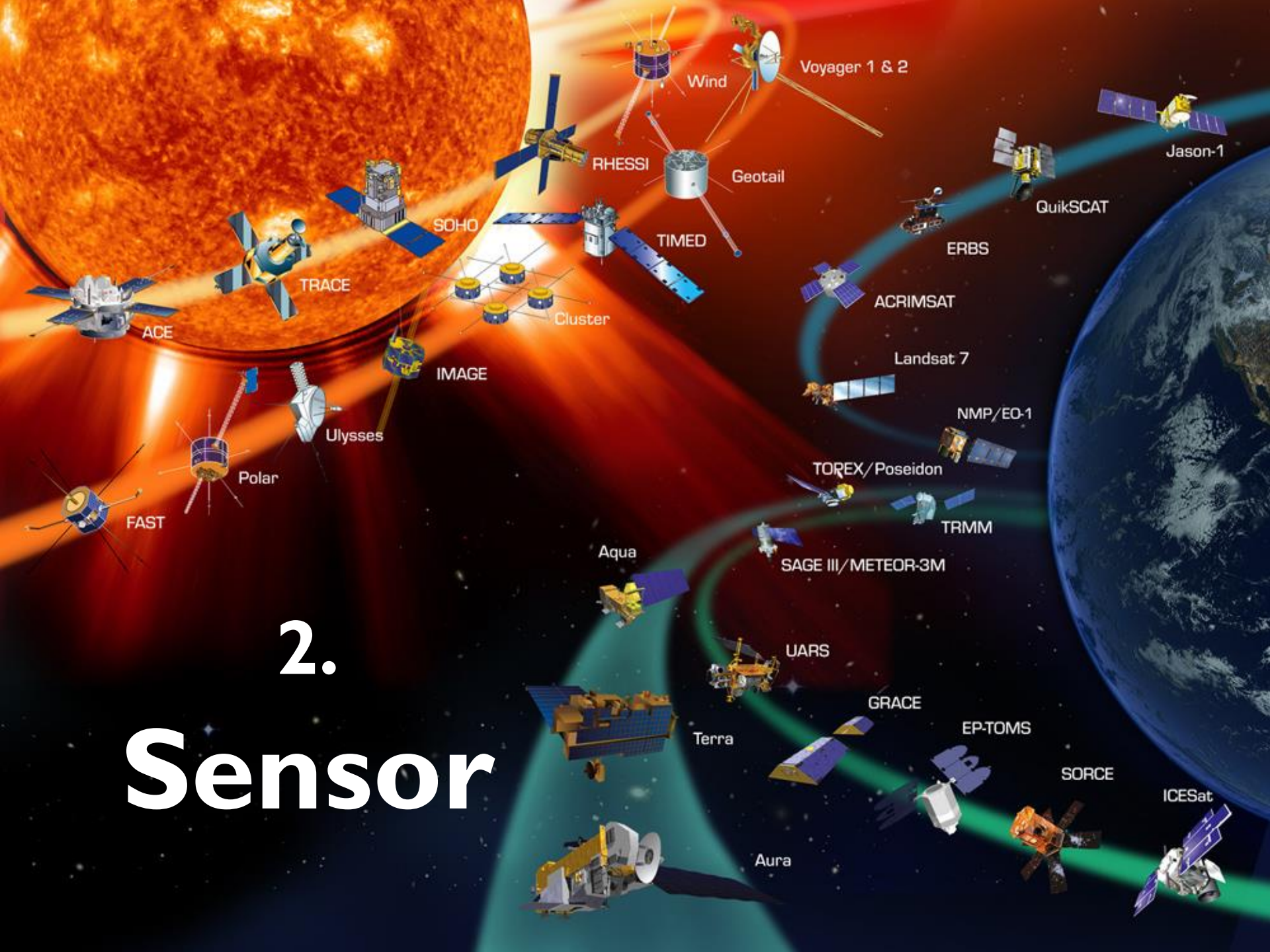
1914-1918 - World War I



ELEMENTS OF REMOTE SENSING



I.
Solar Energy



2. Sensor

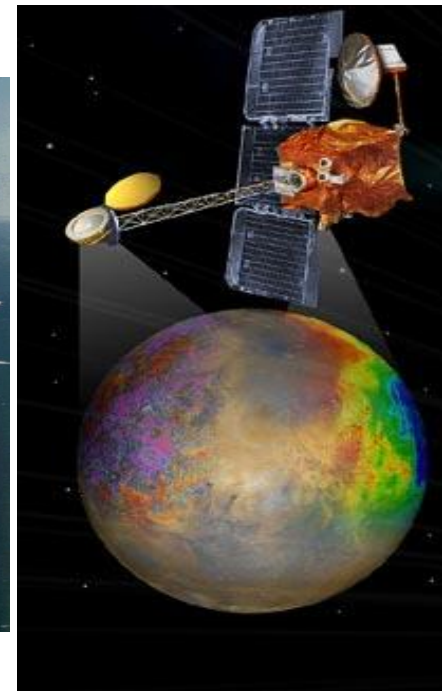
3. Platforms



Ground-based



Airplane-based



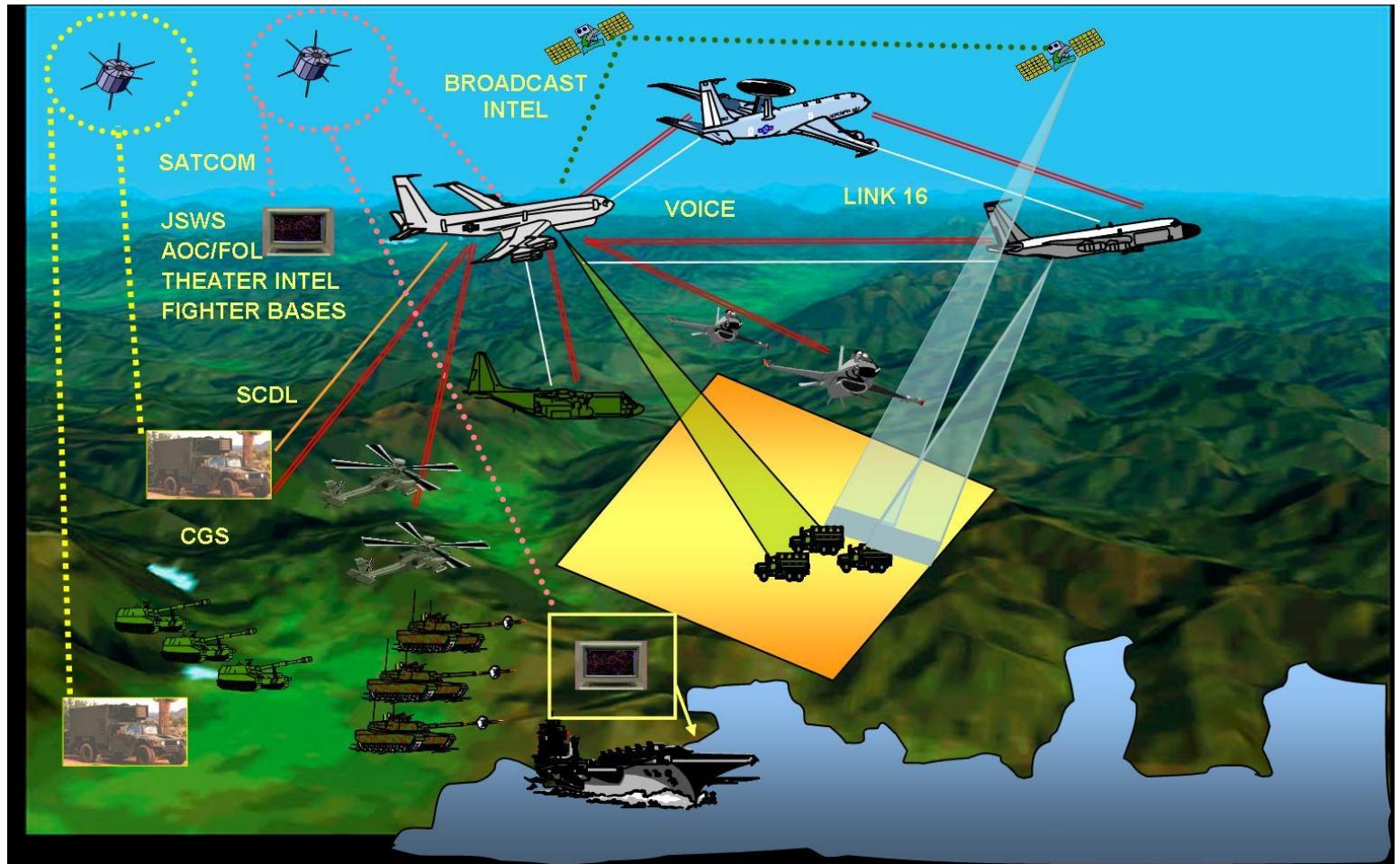
Satellite-based

- Ground based
- Aircraft
- Space shuttle
- Satellite

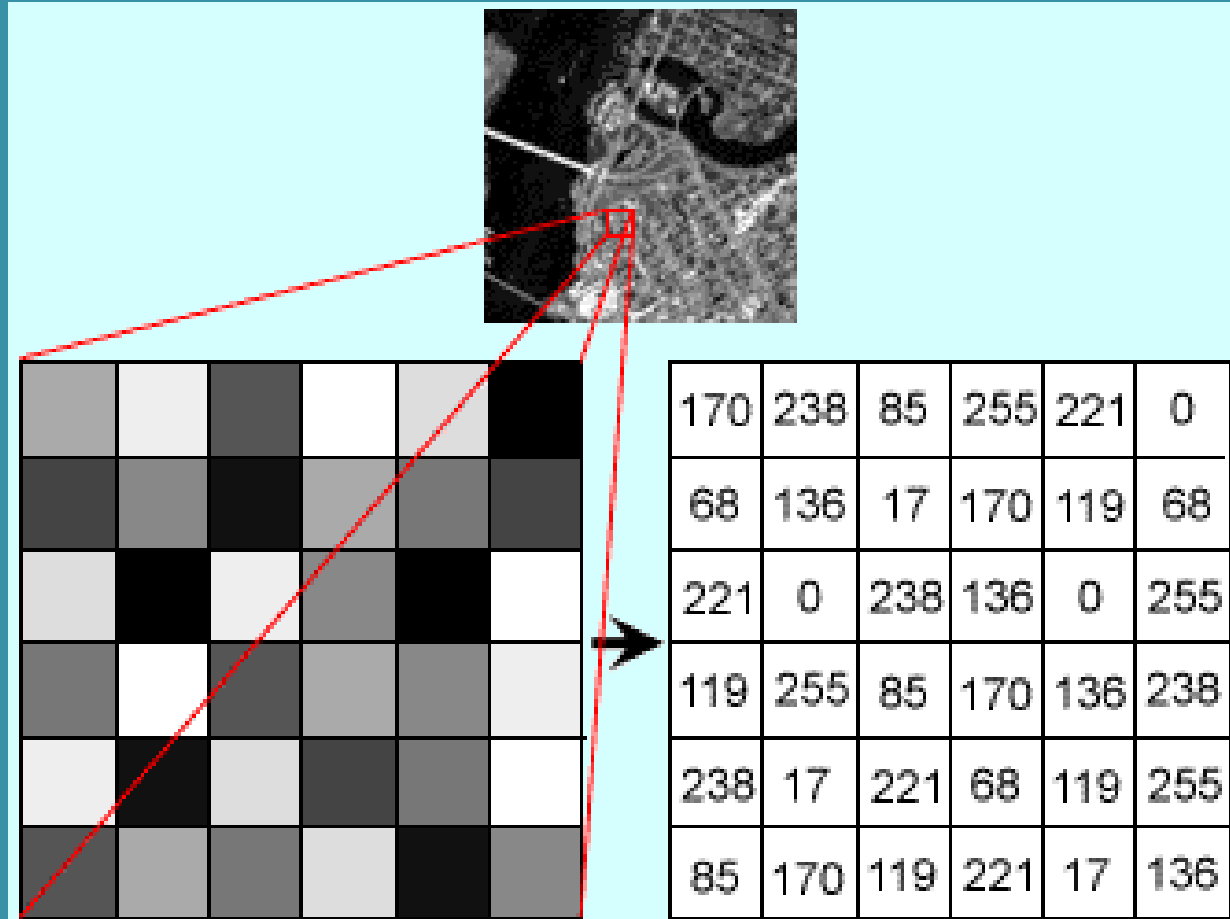


PROCESS OF REMOTE SENSING

I. Collection of Information



2. Analysis of Information



IMAGERIES



Quickbird images



Applications of National Priority



Carbon Management



Public Health



Energy Management



Aviation



Water Management



Homeland Security



Coastal Management



Disaster Management



Agricultural Efficiency



Invasive Species



Ecological Forecasting



Air Quality

Urban & Regional Planning

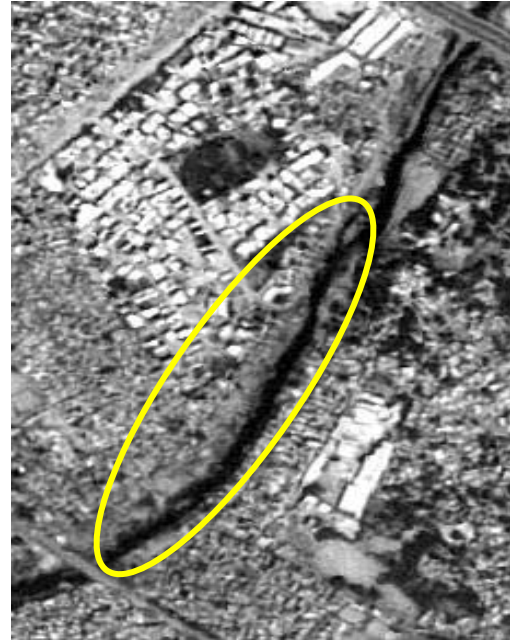
Scope

- Mapping & updation of city/town maps
- Urban sprawl monitoring
- Town planning
- Facility management
- GIS database development

Benefits

- Better decision support, planning & management
- Rapid information updation
- Infrastructure development monitoring
- Spatial information analysis

Lyari Express Way – Section (Essa Nagri)



Agriculture

Scope

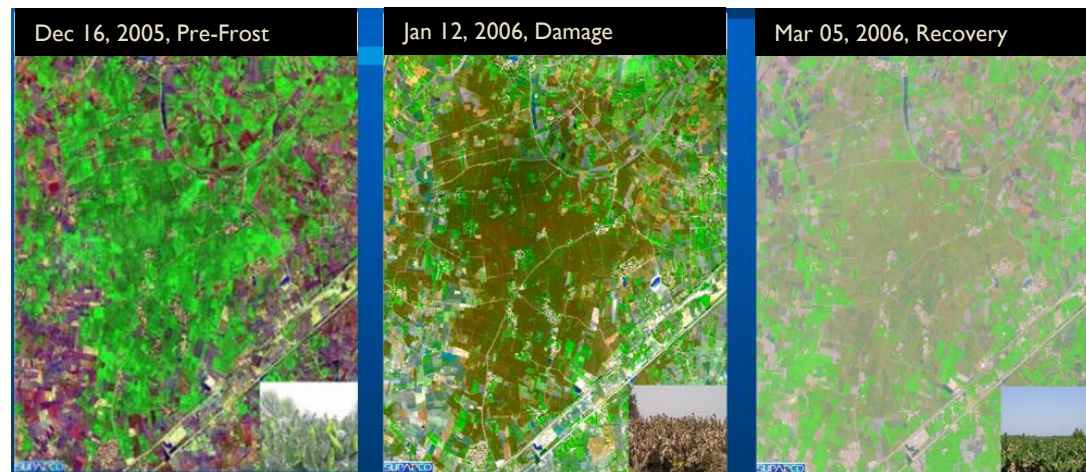
- Crop acreage estimation
- Crop modeling for yield & production forecast / estimation
- Crop & Orchard monitoring

Benefits

- Timely availability of crop statistics for decision making & planning
- Crop growth monitoring
- Soil status monitoring
- Regular reports regarding total area under cultivation



FFC Goth Macchi



Banana Plantation – Muhammad Pur (Ghotki)

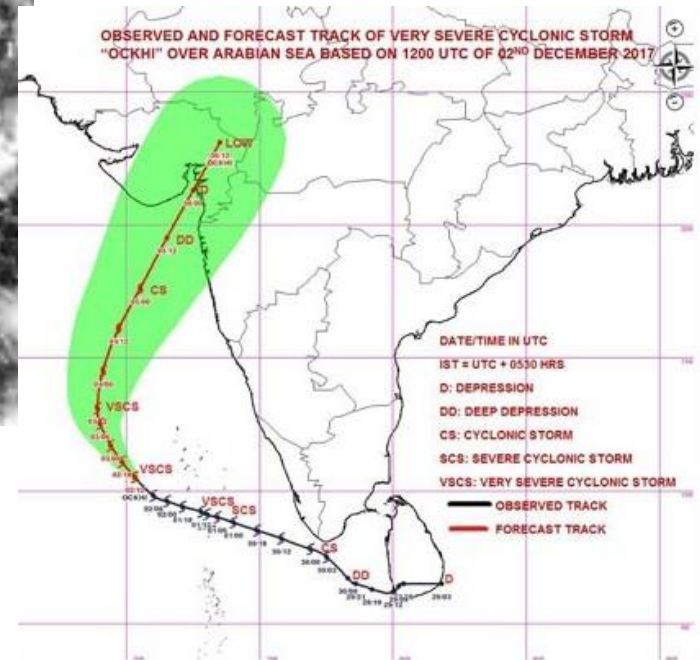
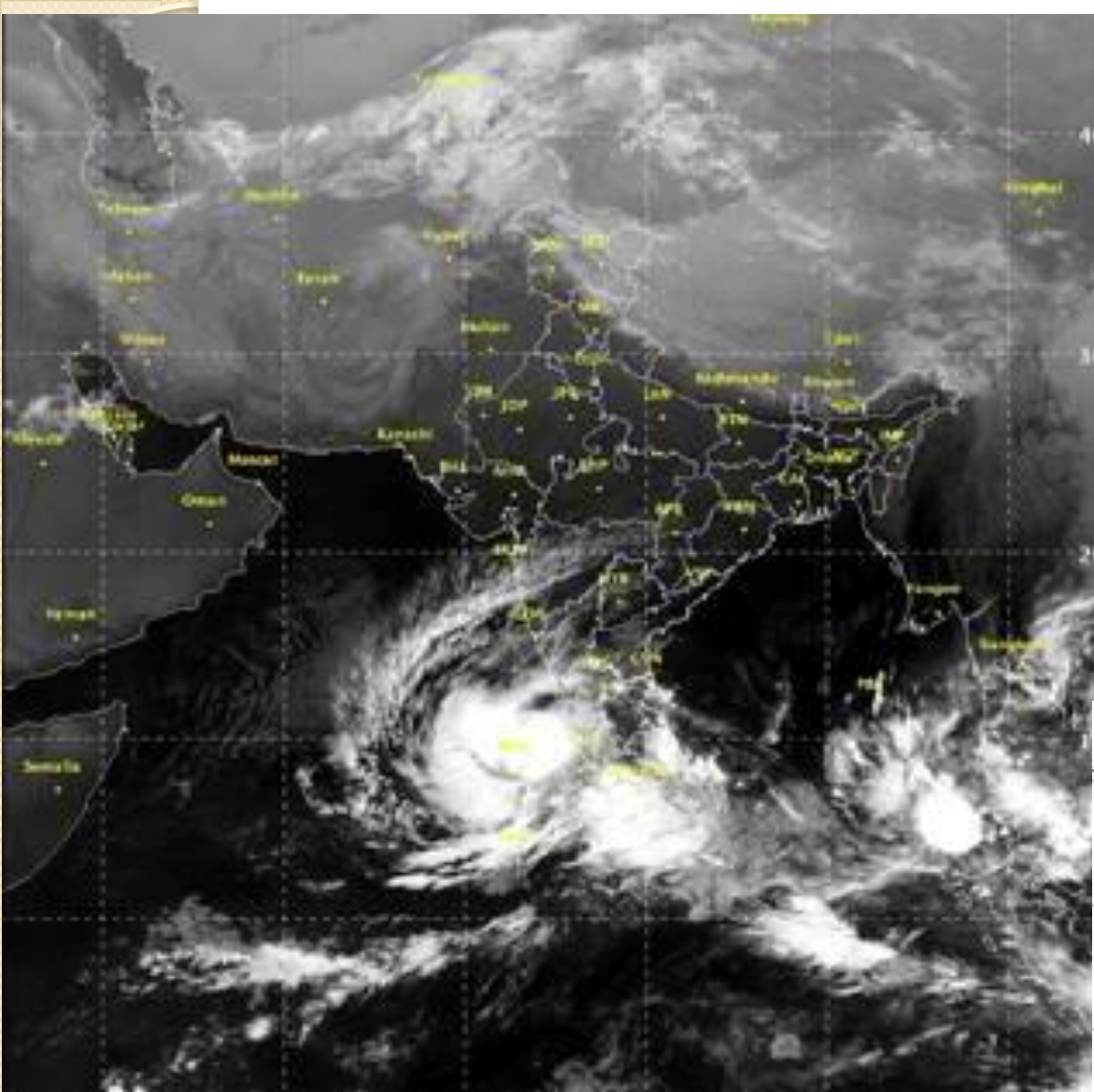
Science Of Geology



Meteorological Application

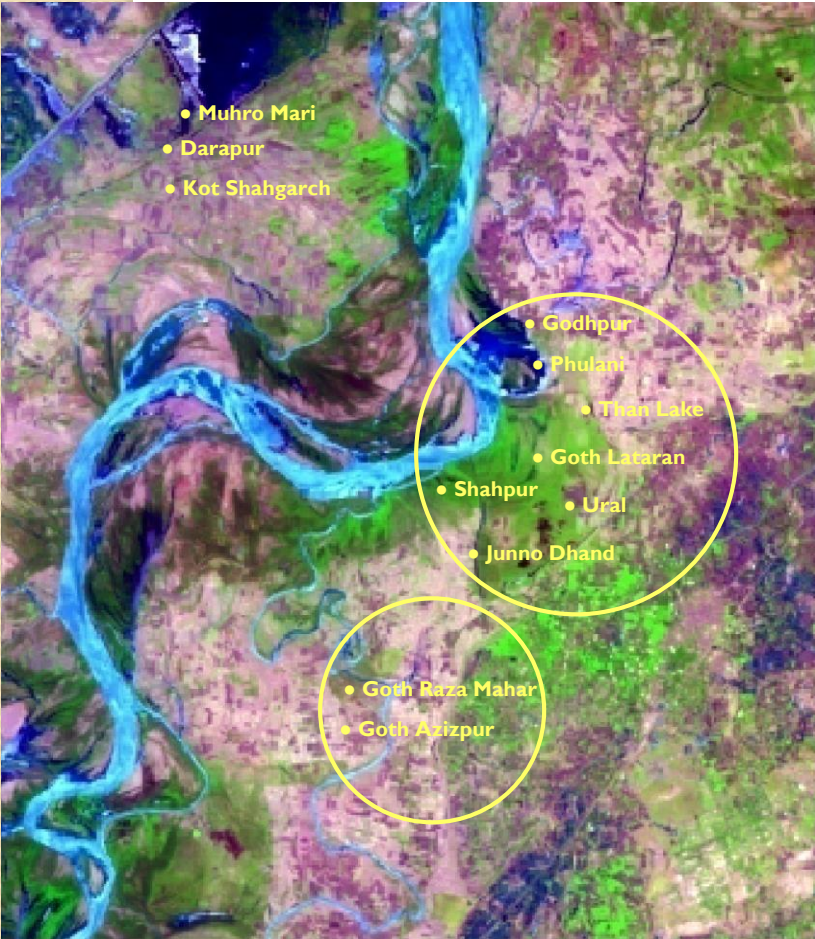


Ockhi Cyclone

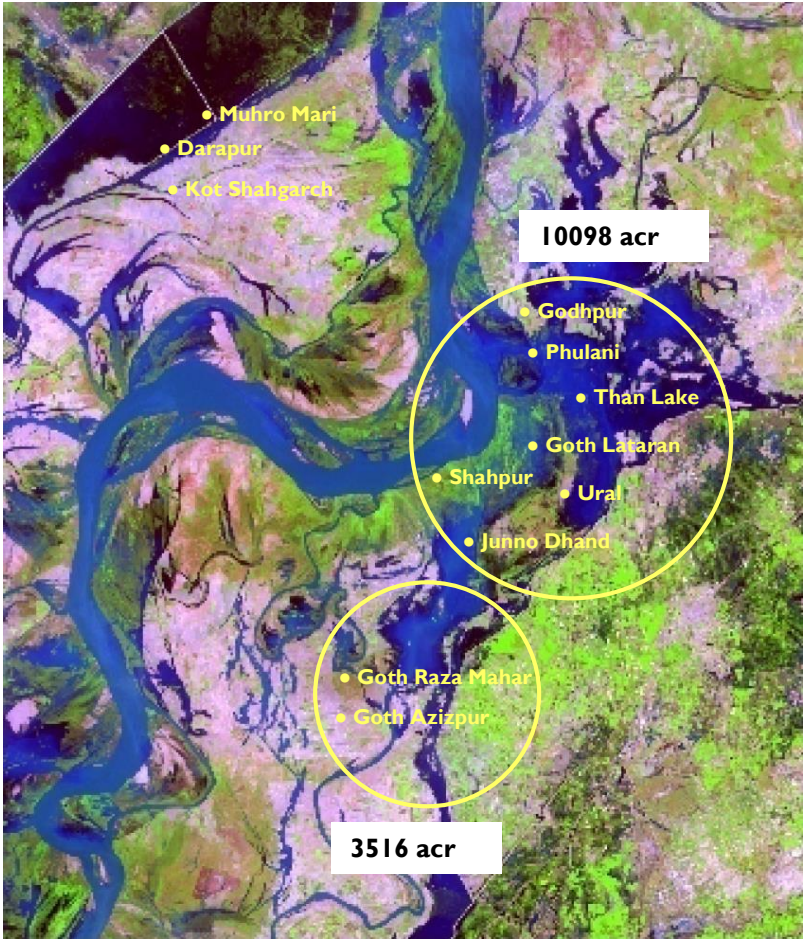


Flood Damage to Standing Crops

Pre Flood – 17 July 2006



Post Flood – 09 Aug 2006



Sukkur

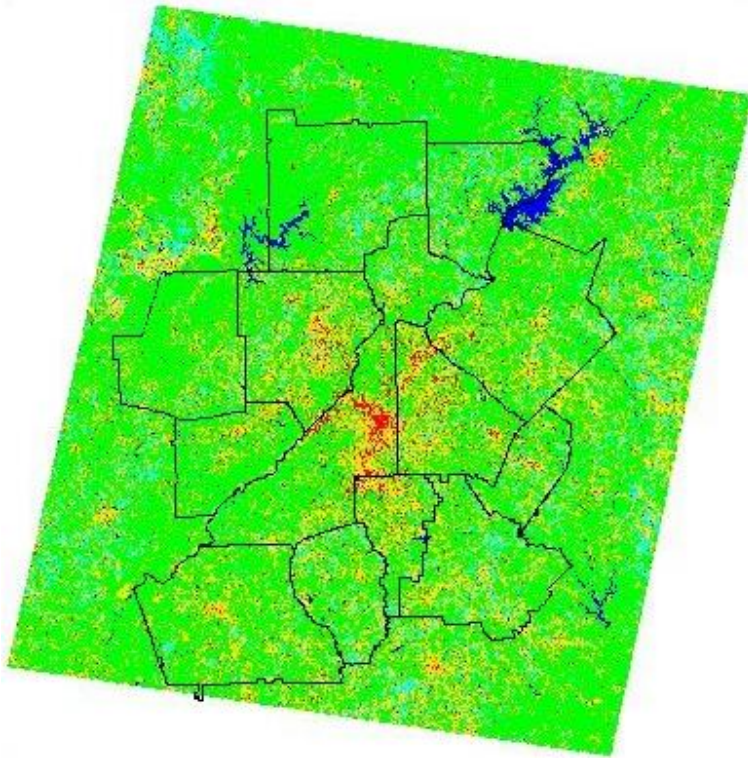
Change Detection - Flooding

Landsat imagery of the 1993 Mississippi flood

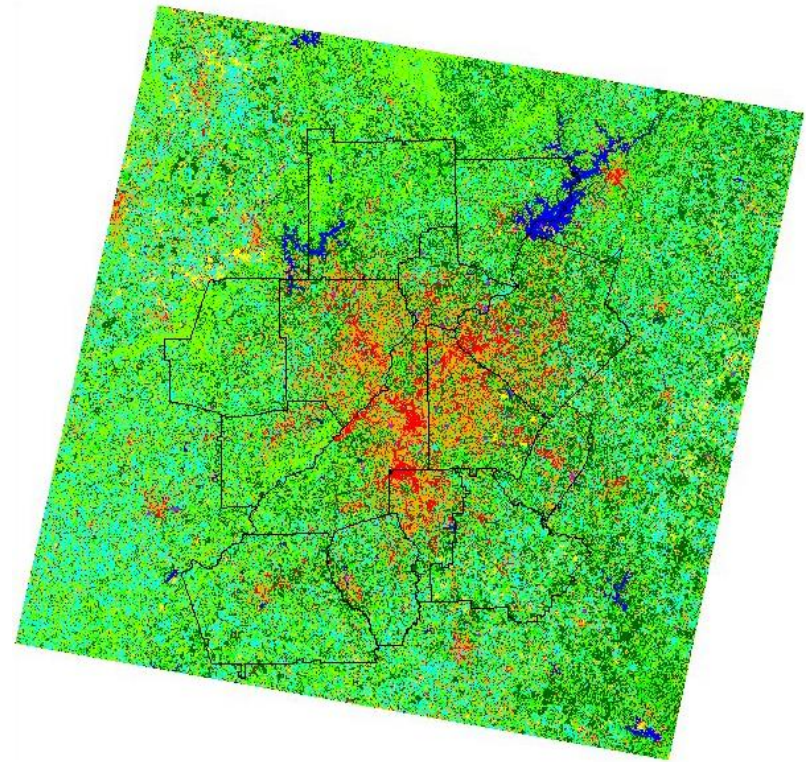


Application of Temporal Data: Urban Sprawl

Atlanta, GA
1973



1987



Forestry

Scope

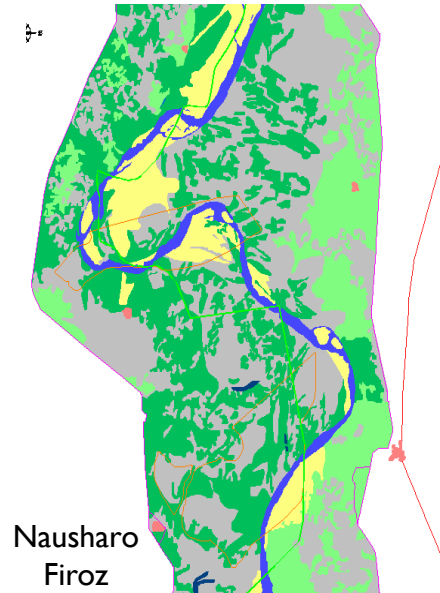
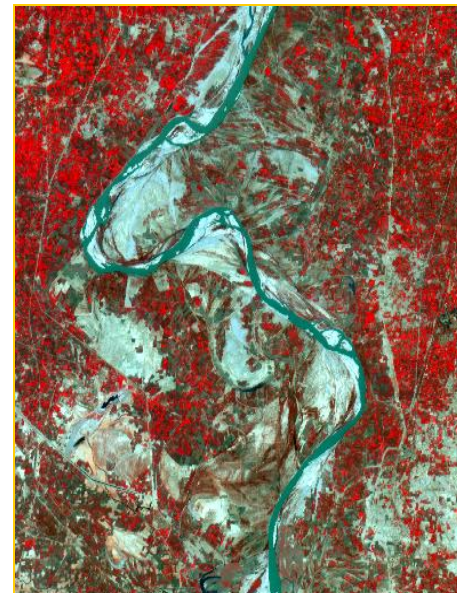
- Satellite image based forest resource mapping and updation
- Forest change detection
- Forest resource inventory
- GIS database development

Benefits

- Availability of baseline information
- Planning for afforestation strategies
- Futuristic resource planning
- Sustainability of environment
- Wild life conservation & development for recreation purpose

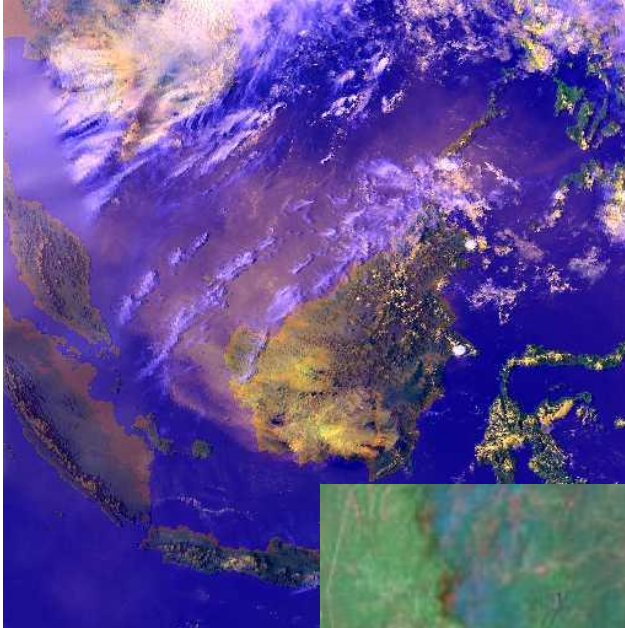


Sarhad Reserve Forest (Ghotki)



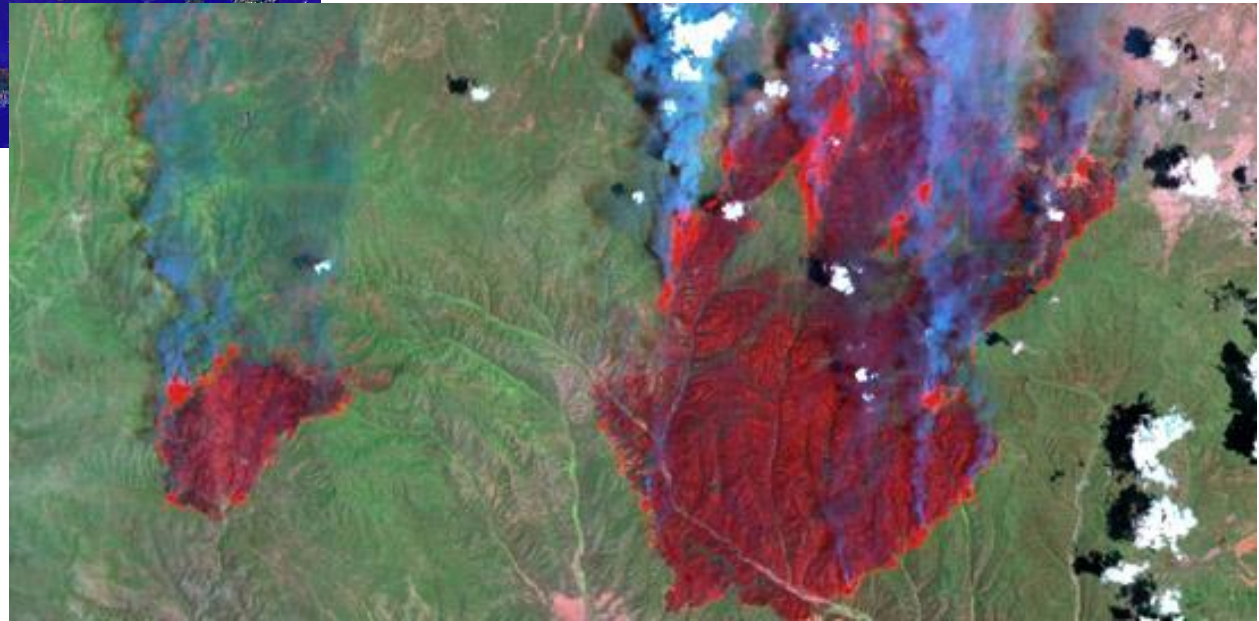
Nausharo Firoz

Detecting and Monitoring Wildland Fires



Borneo

Arizona, June 2002



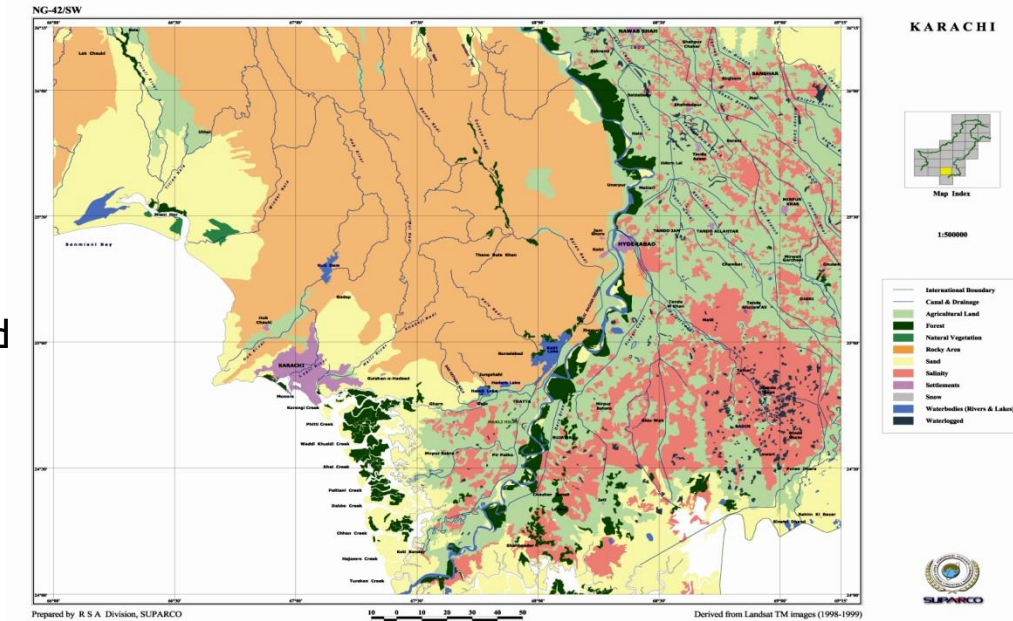
Landuse / Landcover Mapping

Scope

- Monitoring dynamic changes
- Urban/Rural infrastructure
- Waterlogging & salinity

Benefits

- Assessment of spatial distribution of land resources
- Infrastructure monitoring
- Availability of usable land
- Future planning for better land management for socio-economic development





Thanks for your attention!