

Best Practices in Pakistan of Using Space-based Information for Disaster Management

Sequence of presentation

- Pakistan
 - SUPARCO Establishments
 - Disaster Monitoring
 - Agriculture/Drought monitoring
 - Conclusion
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Pakistan

- Pakistan is a country of diverse agro-climatic regions. The climate is predominantly arid to semi arid
 - Agriculture occupies pivotal position as it contributes 21% of GDP and provides employment to 45% of labor force
 - The main focus of the Government in agriculture has been on addressing the issues of nation's food security
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SUPARCO Establishments

Spot Receiving Station



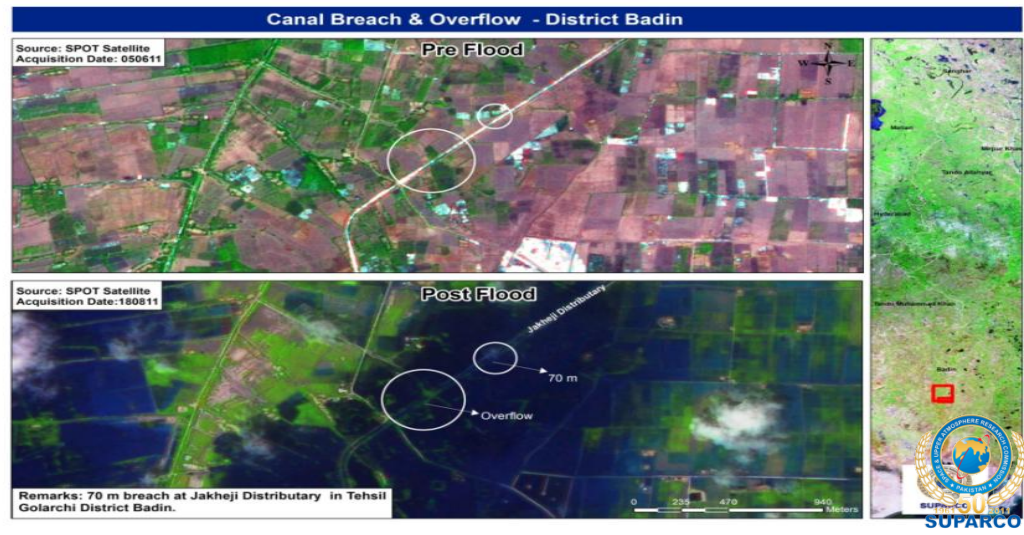
Aqua / Terra Receiving Station



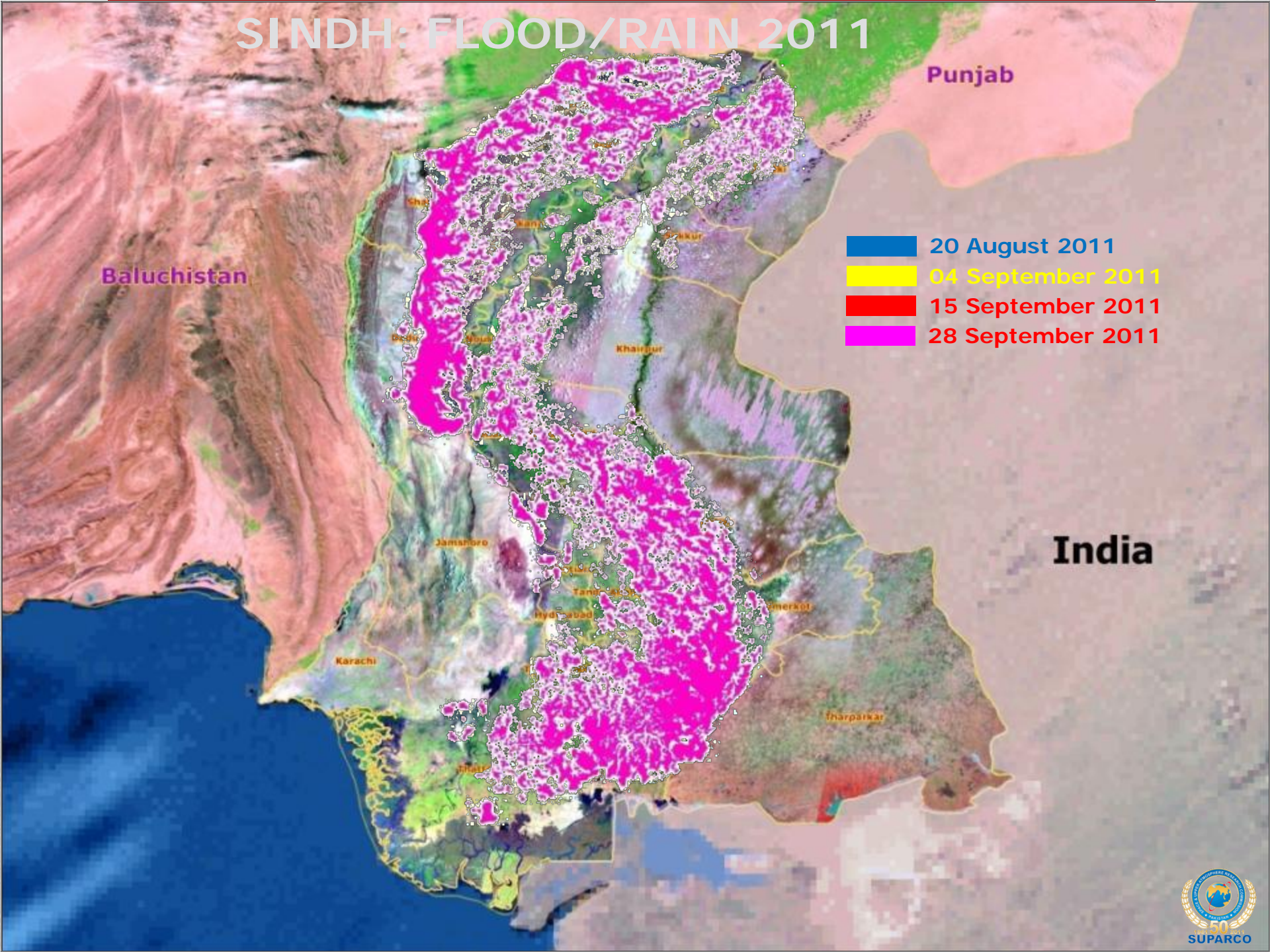
Disaster Monitoring

Pakistan Floods - 2011

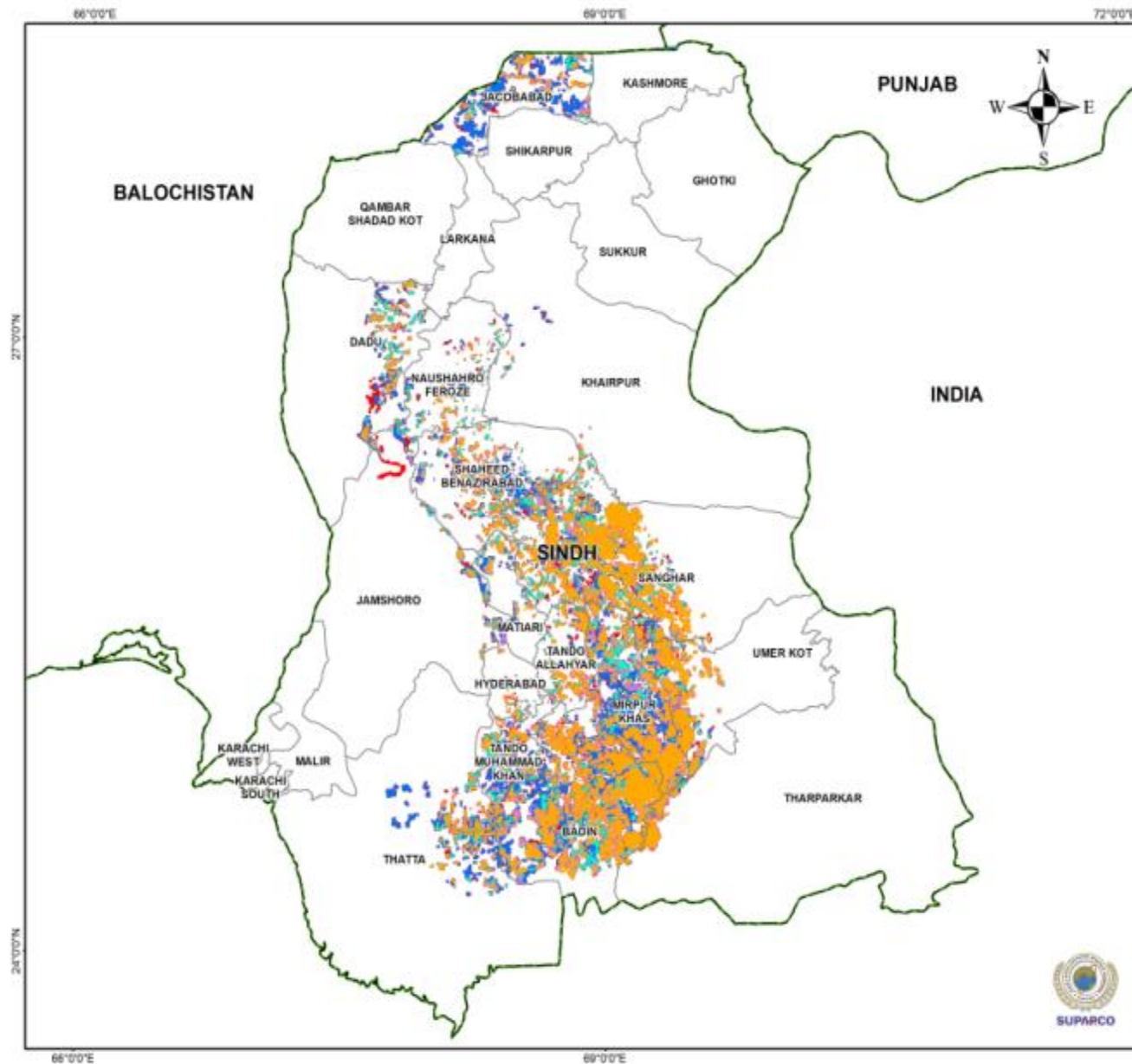
- A rapid mapping of the flood affected areas was carried out using pre-post MODIS data.
 - This was followed by use of SPOT 4 and SPOT 5 data for detailed damage analysis.
 - The information was supplied in regard to monitoring damages to infrastructure, settlements, canal breaches, roads, bridges, railways and cropped area.
 - Temporal flood inundation mapping, extent of flood water and statistics for various attributes regarding flood damage
 - Geographic and agriculture area damaged and extent losses in crop yield and production for Kharif season
 - The flood recession statistics are being provided on 5 daily basis
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SINDH: FLOOD/RAIN 2011



SINDH : FLOOD / RAIN 2011 Flood Receding



Legend

- Province Boundary
- District Boundary
- Flood Extent 171011
- Flood Extent 131011
- Flood Extent 081011
- Flood Extent 031011
- Flood Extent 270911

This map presents preliminary analysis of flood affected areas.

Data extracted from pre & post Flood Imagery acquired from MODIS Satellite Series at SUPARCO, Karachi.

This analysis has yet to be validated in the field

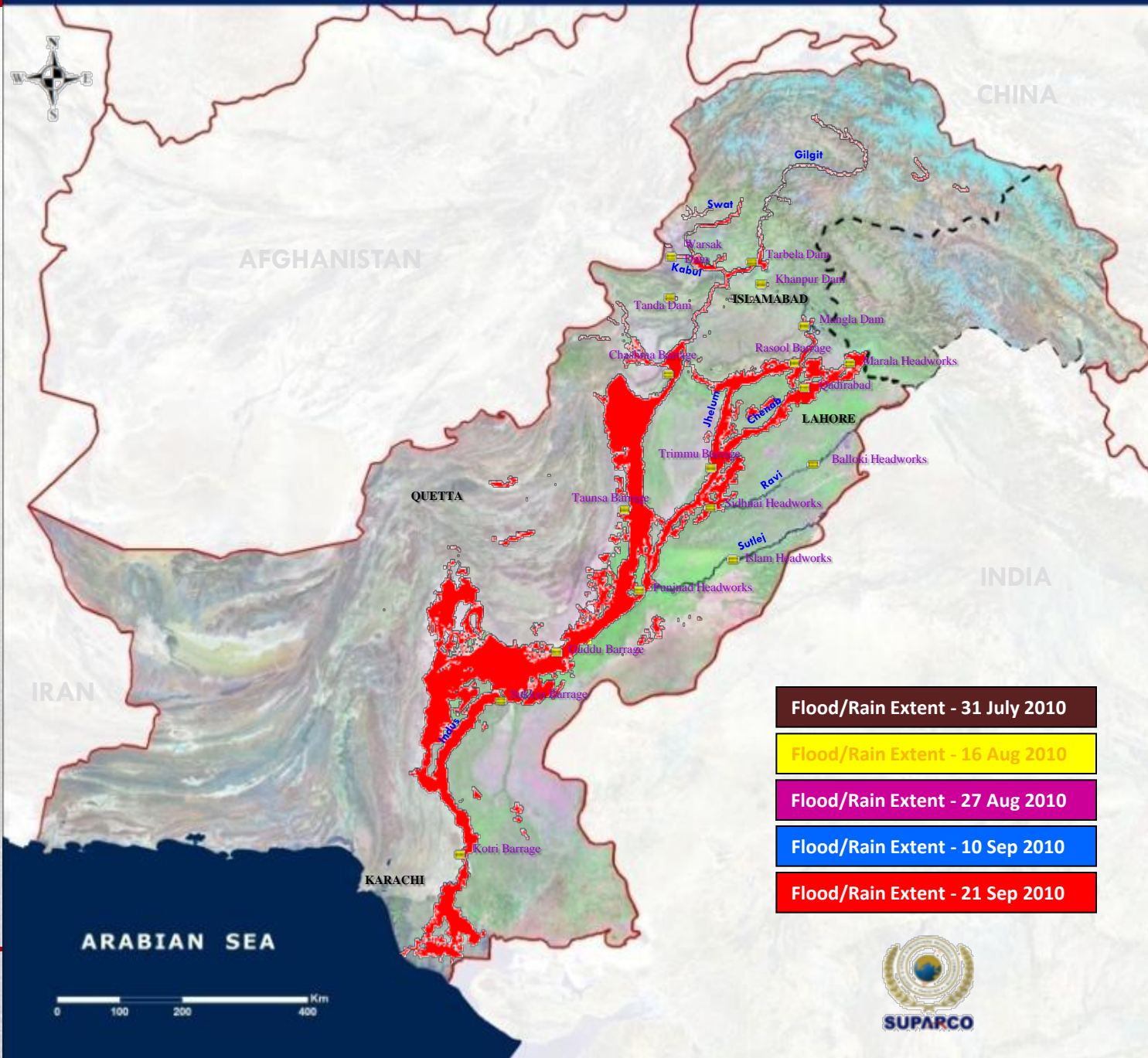
Projection: UTM Zone 42 N
Spheroid: WGS 84



Pakistan Floods - 2010

- Pakistan experienced worst monsoon-related floods since 1929.
 - SUPARCO monitored this disaster since its inception.
 - It developed maps showing flood extent, damage assessment on daily basis.
 - Provided these to the concerned agencies such as NDMA, MINFA, etc.
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PAKISTAN: FLOOD/RAIN 2010



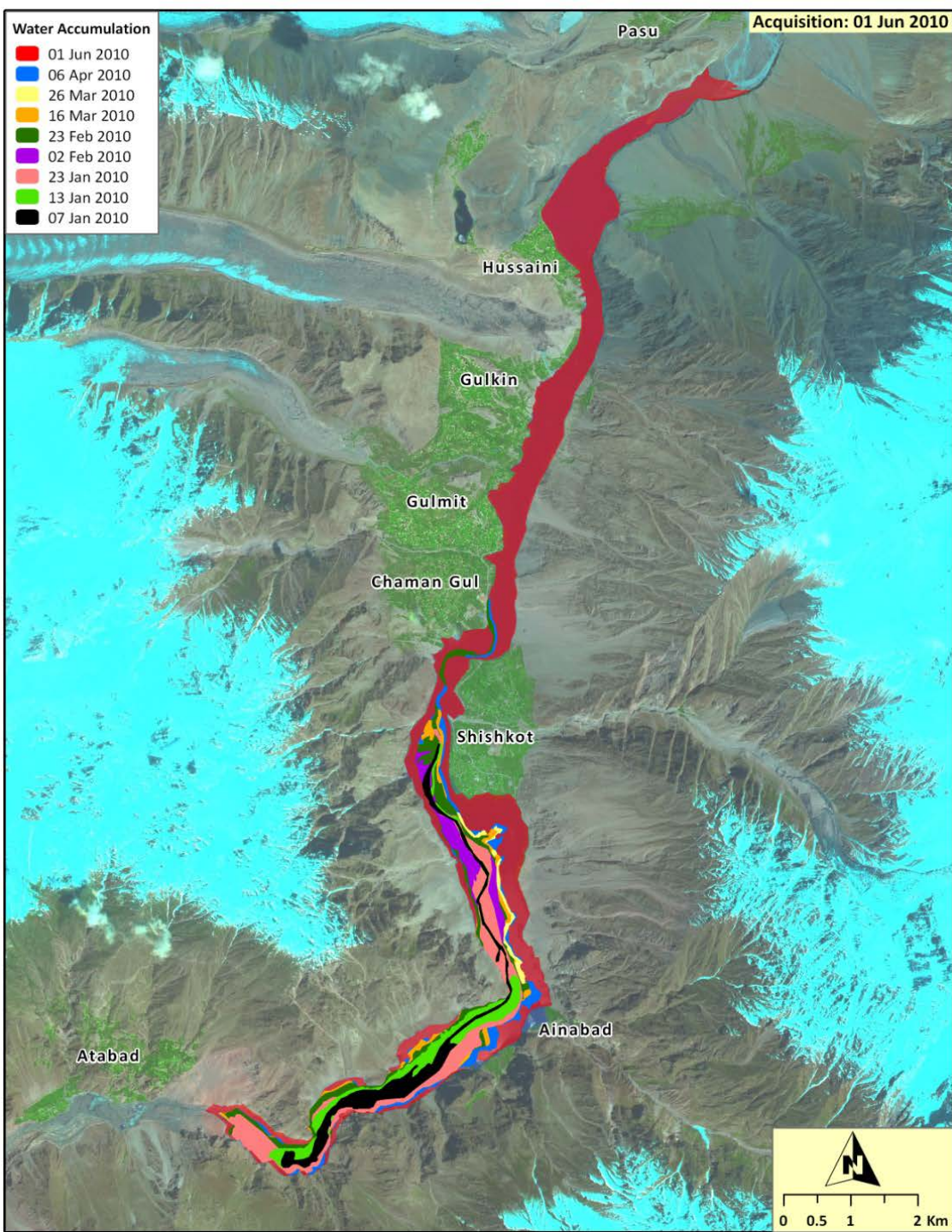
Pakistan Landslide - 2010

Major Landslides in Muzaffarabad





Acquisition: 01 Jun 2010

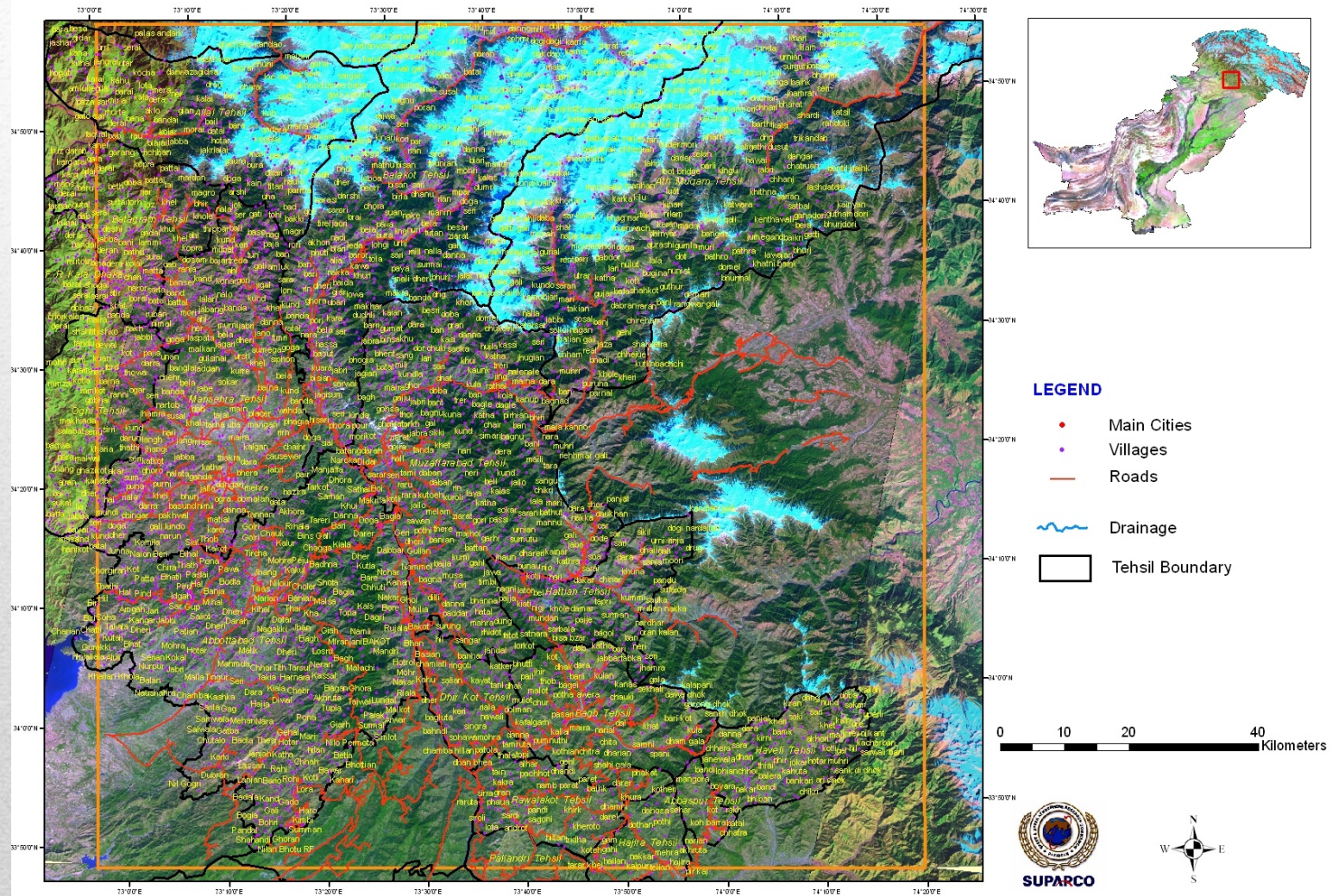


Hunza Lake

Temporal analysis of water accumulation
The water discharge started on 30 May
2010

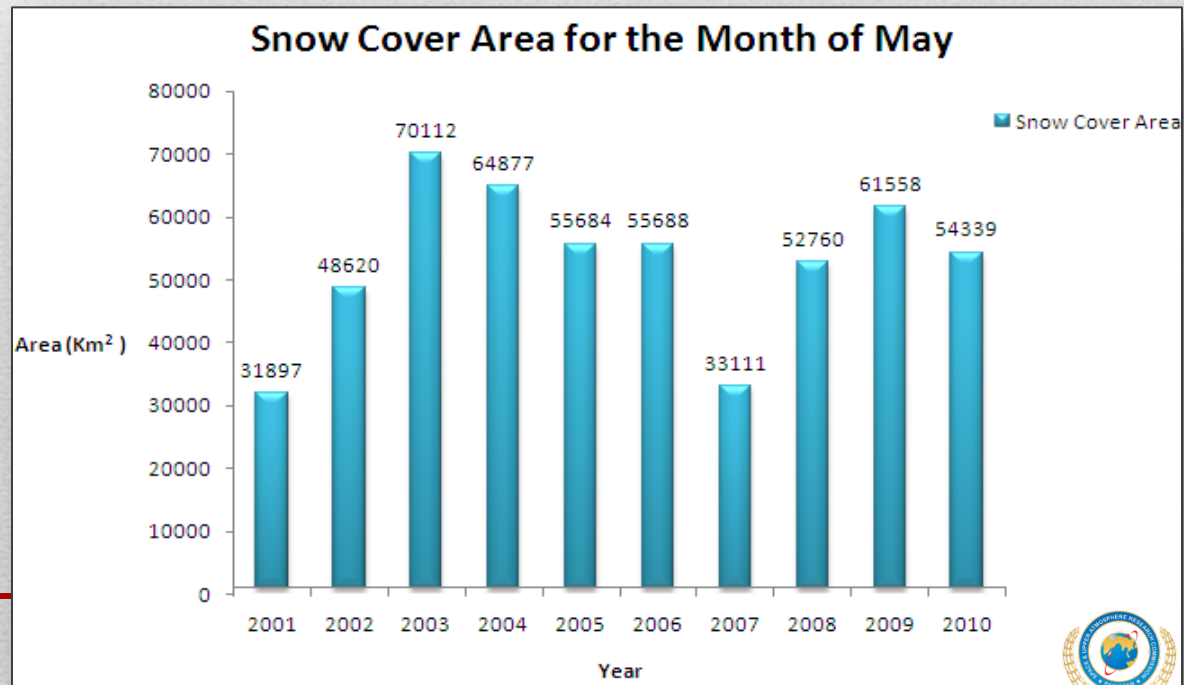
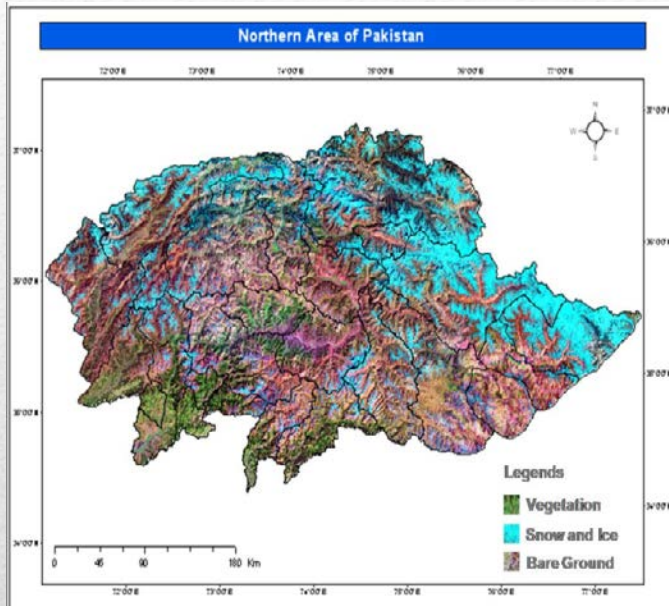
Earthquake

Roads Network in Affected Area



Glaciers Monitoring

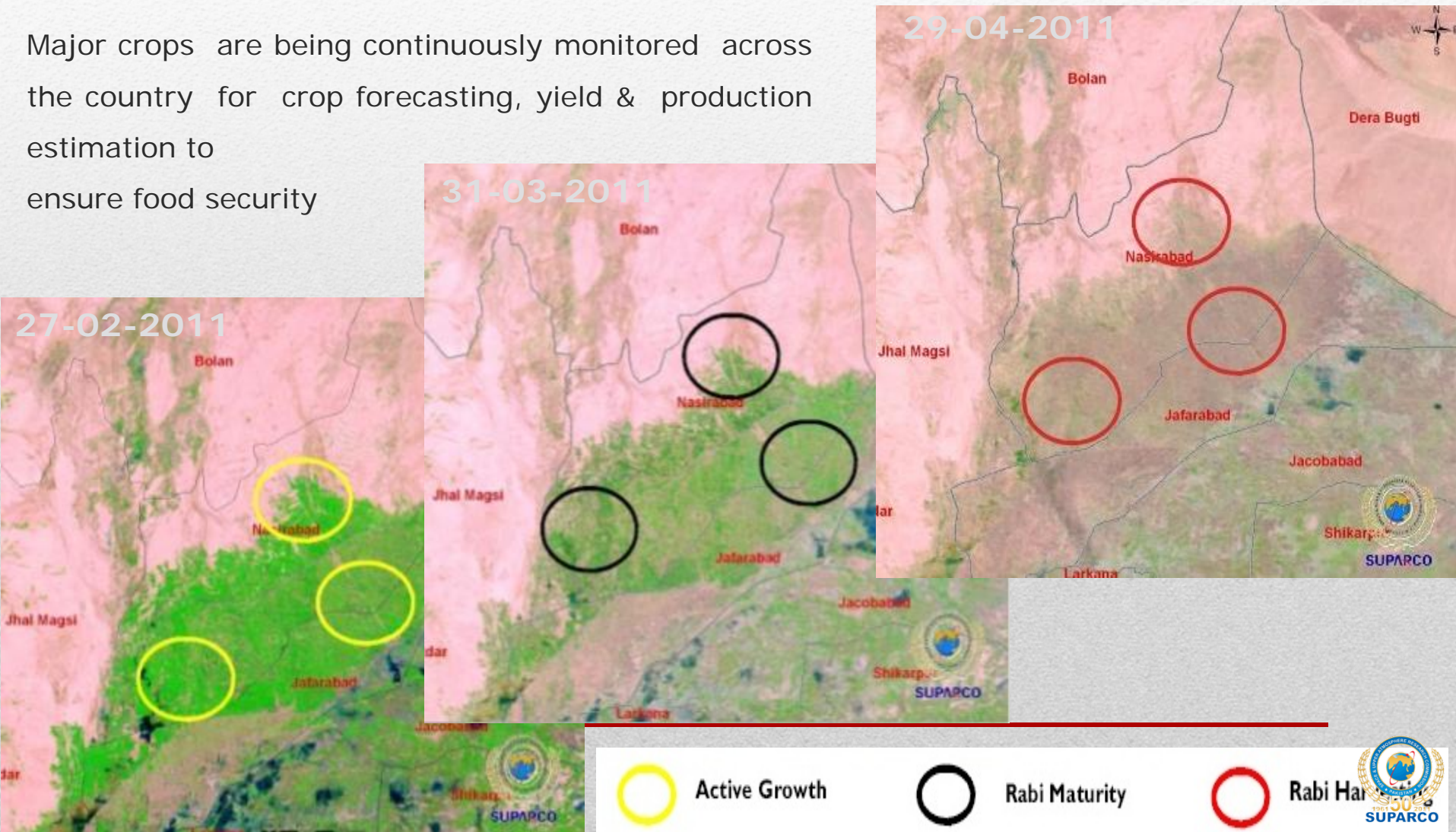
Seasonal Snow Cover Mapping using



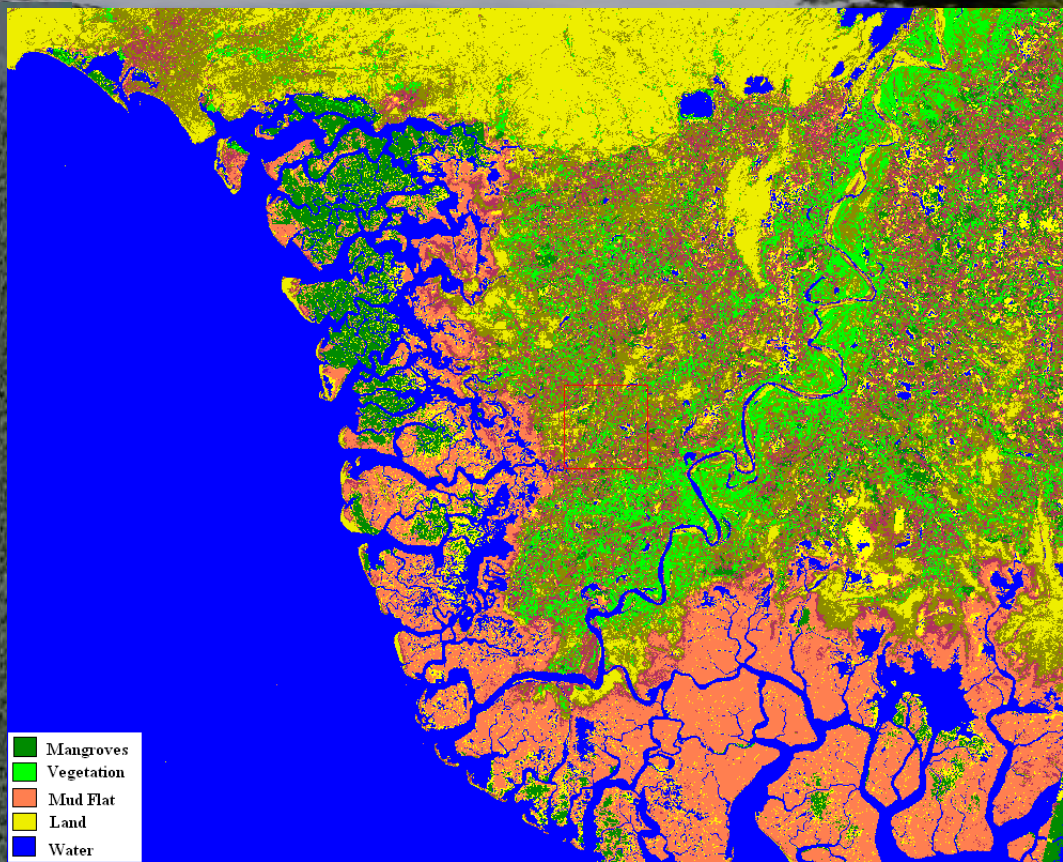
Agriculture/Drought monitoring

Agriculture

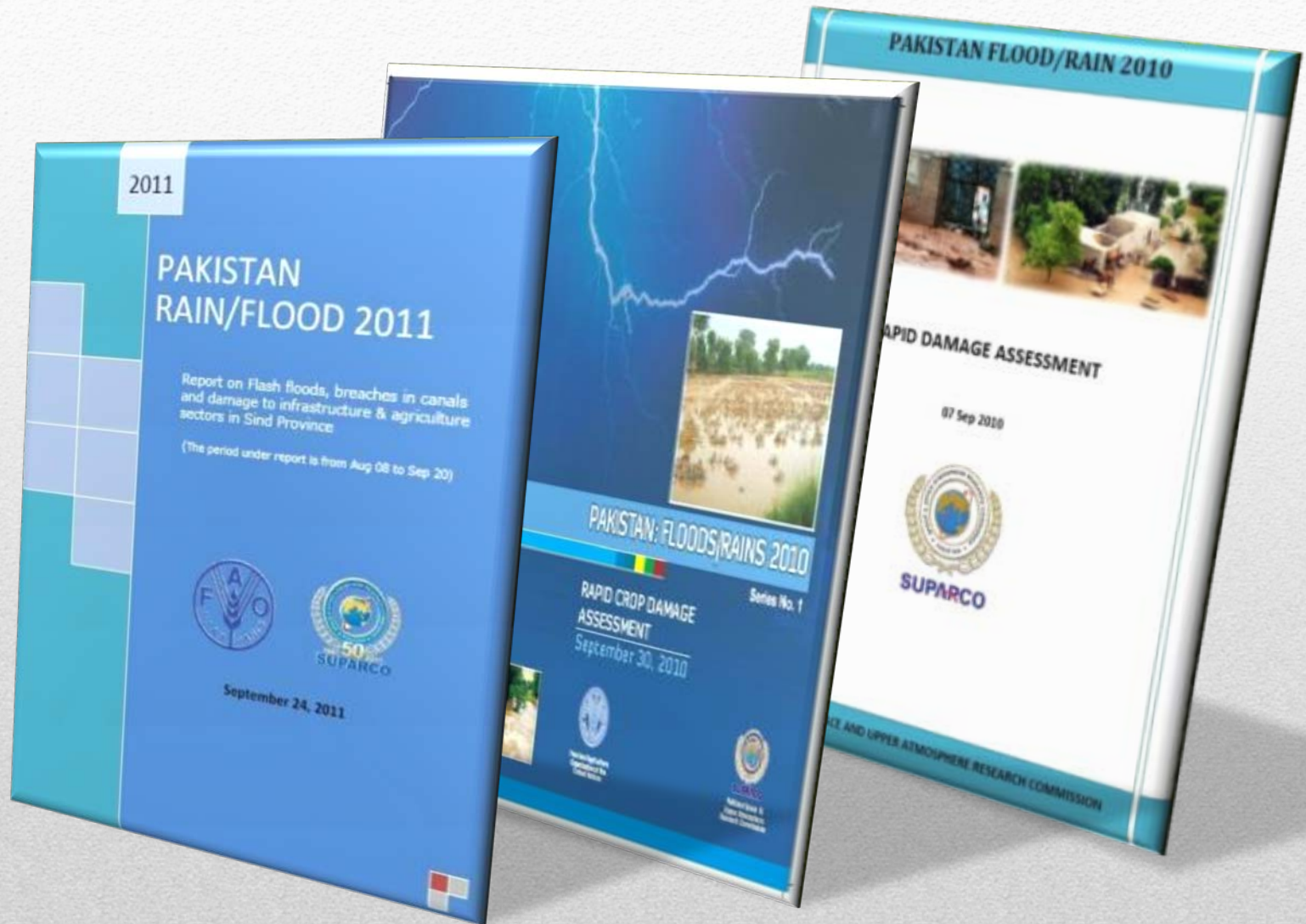
Major crops are being continuously monitored across the country for crop forecasting, yield & production estimation to ensure food security



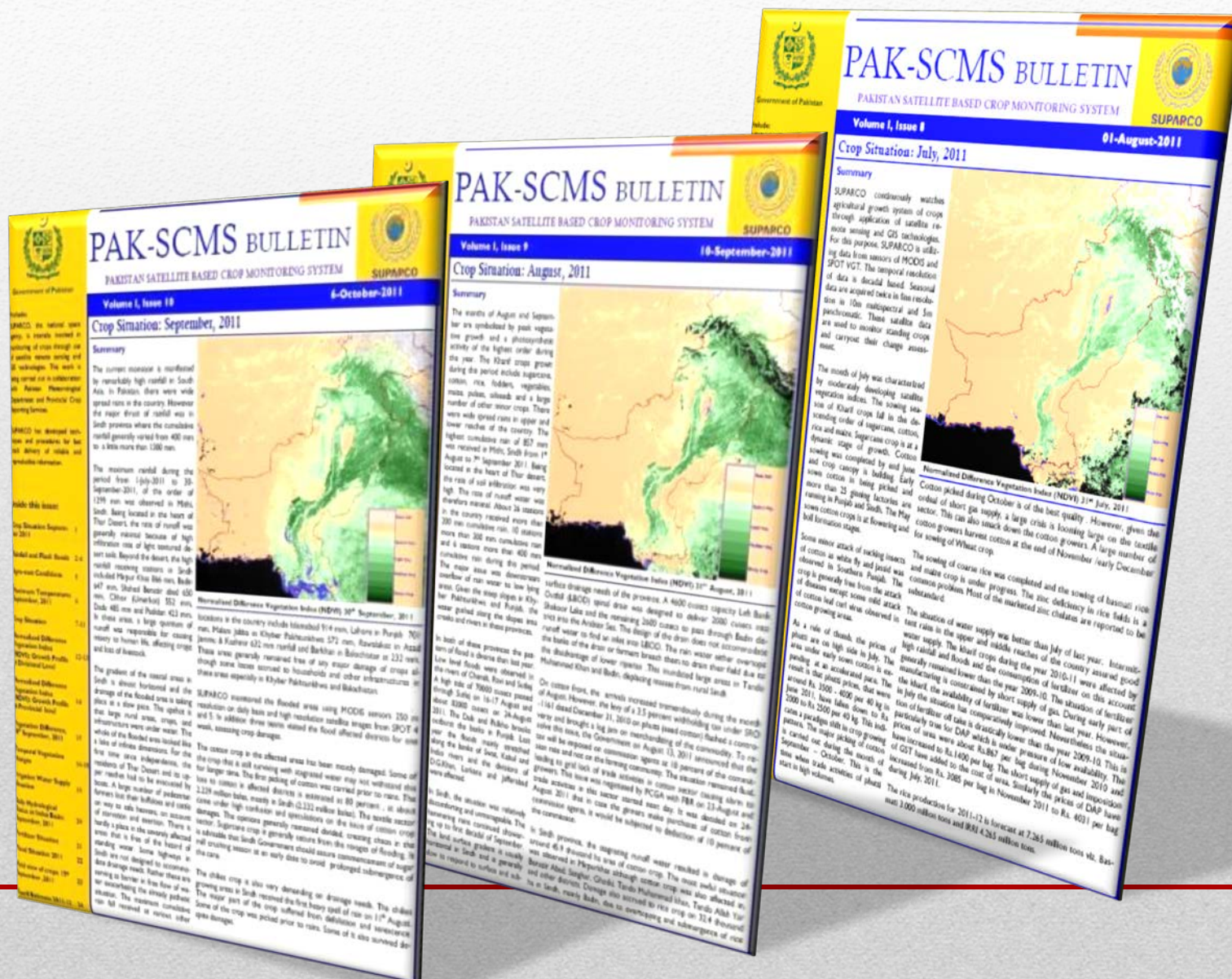
Mangroves monitoring



BULLETINS



BULLETINS



International Cooperation

- Bilateral and multilateral cooperation
 - Joint research projects
 - Capacity building and technology upgradation
 - Scientific & technical trainings
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Conclusion

Space science and technology can be effectively used for socio-economic development.



Thank you
