SPACE APPLICATION CENTRE FOR RESPONSE IN EMERGENCY AND DISASTERS (SACRED)

- THE CENTRE PROVIDES SPACE BASED INFORMATION TO NATIONAL / PROVINCIAL DISASTER MANAGEMENT AGENCIES TO RAPIDLY ASSESS THE EXTENT OF NATURAL DISASTERS AND DAMAGES TO HUMAN LIVES, PROPERTY AND INFRASTRUCTURE.

- THE CENTRE ALSO PROVIDES ASSISTANCE TO REGIONAL COUNTRIES IN CASE OF NATURAL DISASTERS.

INTERNATIONAL COOPERATION IN DISASTER MANAGEMENT

PARTNERS

UN SPIDER

Sentinel Asia

SUPARCO

International Charter Space and Major Disasters

- ✓ The International Charter aims at providing a unified system of space data acquisition and delivery to those affected by natural or man-made disasters through Authorized Users
- ✓ On Behalf of NDMA, SUPARCO has been registered with Charter as Authorized User (AU)
- ✓ SUPARCO is host to UN-SPIDER Regional Support office in Pakistan
- ✓ SUPARCO is also Member of JPT-3 project of Sentinel Asia and is registered as Data Analysis Node (DAN)
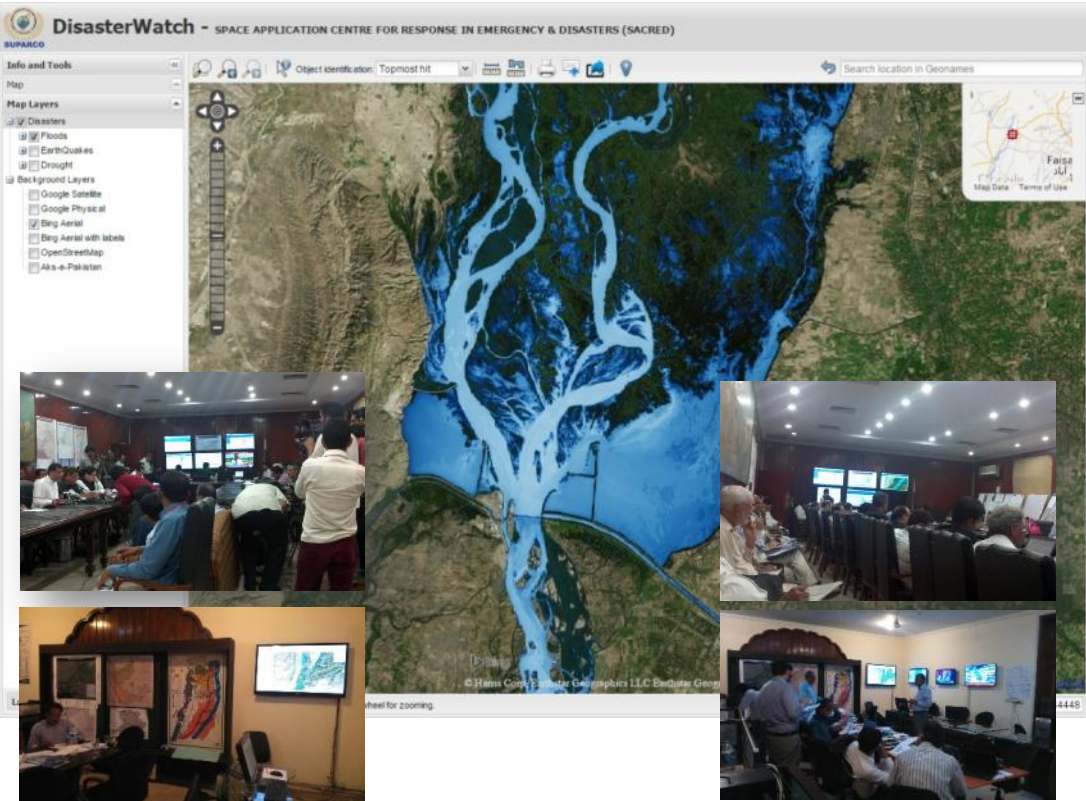
Disaster Monitoring
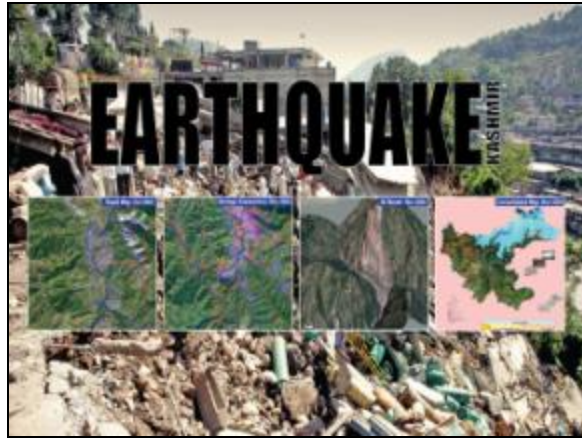
During Natural Disasters, SUPARCO provided technical support to various national Organizations NDMA, PDMAs and International Agencies ICIMOD, UN-FAO etc

Spatial Technologies for Flood Management

Near real-time support through DisasterWatch

SUPARCO's DisasterWatch web portal being utilized and referenced at a press-conference in Flood control room, S&GAD (Civil Secretariat) Punjab and PDMA Punjab control room.
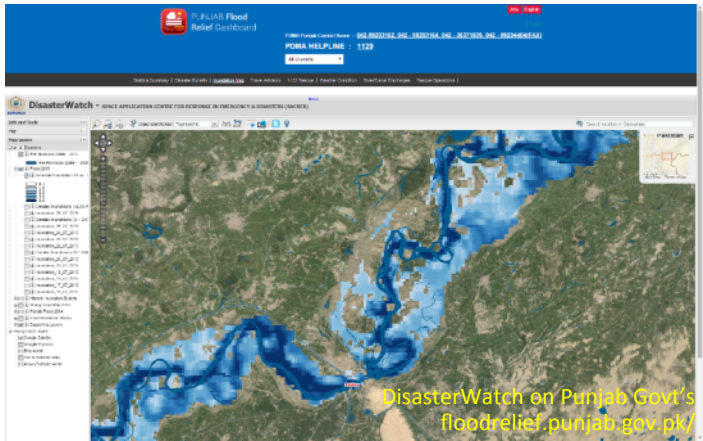
DisasterWatch on Punjab Govt's floodrelief.punjab.gov.pk/

DisasterWatch on NDMA's disasterinfo.gov.pk

- The information is disseminated to flood management stakeholders at every level through indigenously developed web-based visualization platform 'DisasterWatch', printed maps and statistics.

- DisasterWatch portal has additionally been integrated at with the NDMA and Punjab Government's official websites, through which, rescue / relief and flood management organizations such as Rescue 1122, PID, BoR, P&D access latest satellite based dataset and spatial information for planning and relief activities.

ASSOCIATION WITH UN-SPIDER AND JOINT TASK

- Afghanistan Landslide (FAO, ANDMA)

- Nepal Earthquake (ICIMOD)

- "Effective use of Space-based information to monitor disasters and its impacts: Lessons Learnt from Floods in Pakistan" Booklet

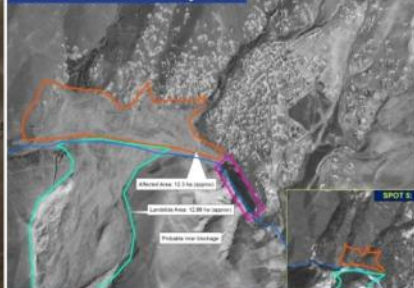- TAM Mission (Bangladesh and Sri Lanka)
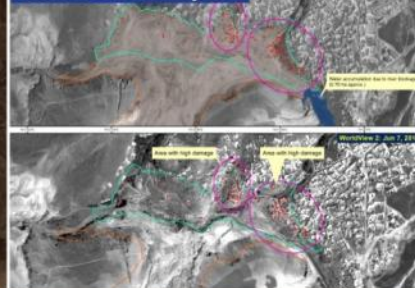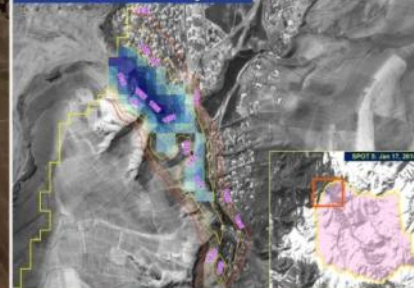
LANDSLIDE
AFGHANISTAN

Landslide Date: 2 May 2014

Post Landslide: 07 May 2014

Post Landslide: 08 May 2014

Post Landslide: 10 May 2014

2014

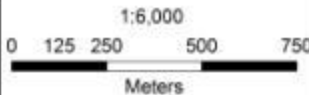# Thansing VDC, Nuwakot District, Nepal - DAMAGE IDENTIFICATION

Location Map

Nuwakot District

Thansing VDC
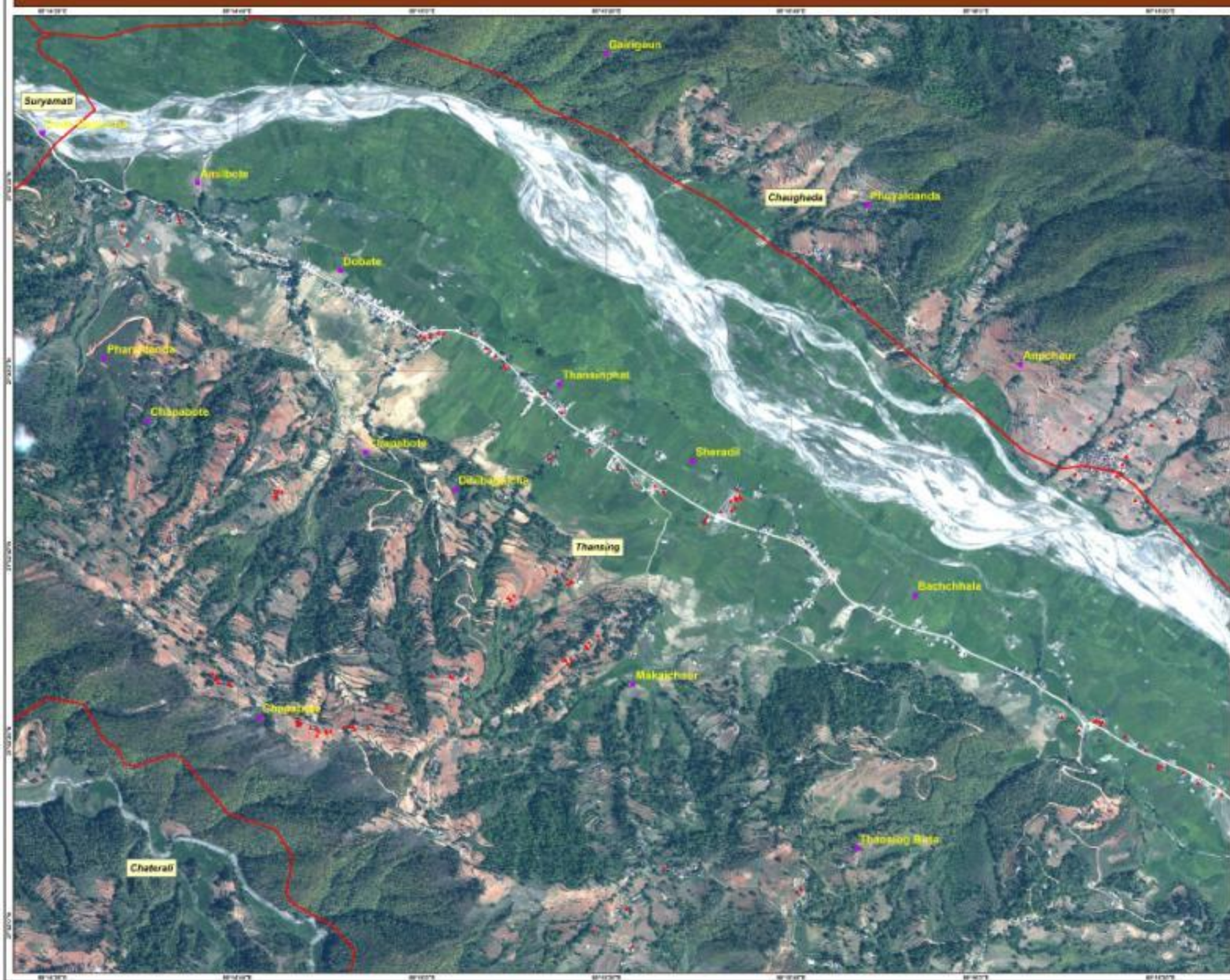
The 2015 Nepal earthquake was a magnitude 7.8 earthquake that occurred on Saturday 25 April 2015, with the epicenter approximately 29 km (18 mi) east-southeast of Lamjung and 81 km (50mi) NW of Kathmandu, Nepal. This is a post earthquake map of Thansing VDC, Nuwakot District. The damage is marked for built up areas only. The analysis is based on 0.31 m resolution WorldView-3 imagery acquired two days after the earthquake and was made available by USGS at HDDS Portal. This analysis is yet to be validated in the field. The map was produced at SUPARCO on April 30, 2015. Projection & Datum: WGS 84

Legend

▲ Severely damaged building
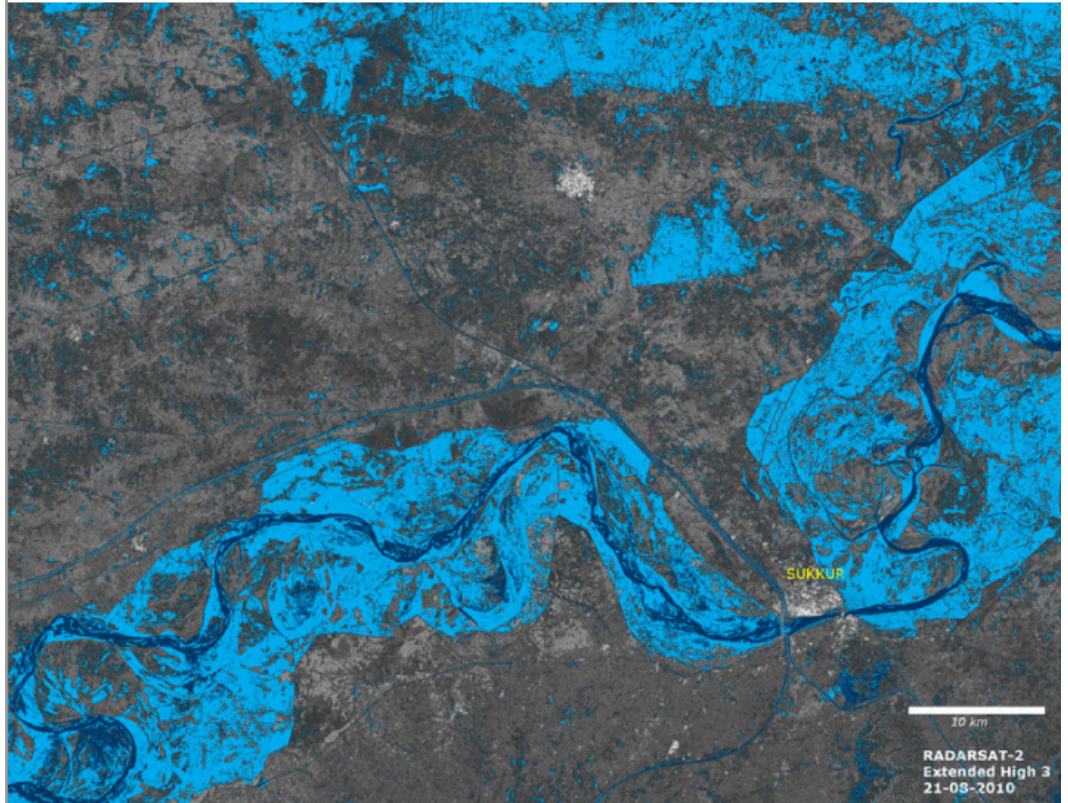
■ Locations (Tentative)

▭ VDC boundary (Tentative)

N

1:6,000

0   125 250   500   750

Meters

ICIMOD

USGS

http://www.un-spider.org/
network/regional-support-
offices/pakistan-regional-
support-office

UN-SPIDER REGIONAL SUPPORT OFFICES

SUPARCO

RADARSAT-2
Extended High 3
21-08-2010

Effective use of Space-based
information to monitor disasters
and its impacts

**Lessons Learnt from
Floods in Pakistan**

prepared by SUPARCO, Pakistan

BENEFITS OF ASSOCIATION/IMPACT OF THE WORK

- Capacity Building

- Networking with RSOs and other DM professional

- Best Practices - Knowledge Portal

- Data Application of the Month

- SUPARCO provided Rapid Damage Assessment during Flood 2014 and 2015 to Govt of Pakistan

SUPARCO's - DisasterWatch

Daily Inundation / Cumulative Inundation - Pakistan Flood 2015

disasterwatch.sgs-suparco.gov.pk

SUPARCO's - DisasterWatch

Crop Inundation / Damage Assessment - Pakistan Flood 2015

disasterwatch.sgs-suparco.gov.pk

Pakistan Floods 2015
Layyah & Dera Ghazi Khan Districts

Dera Ghazi Khan

Layyah

Layyah City

Taunsa

Kot
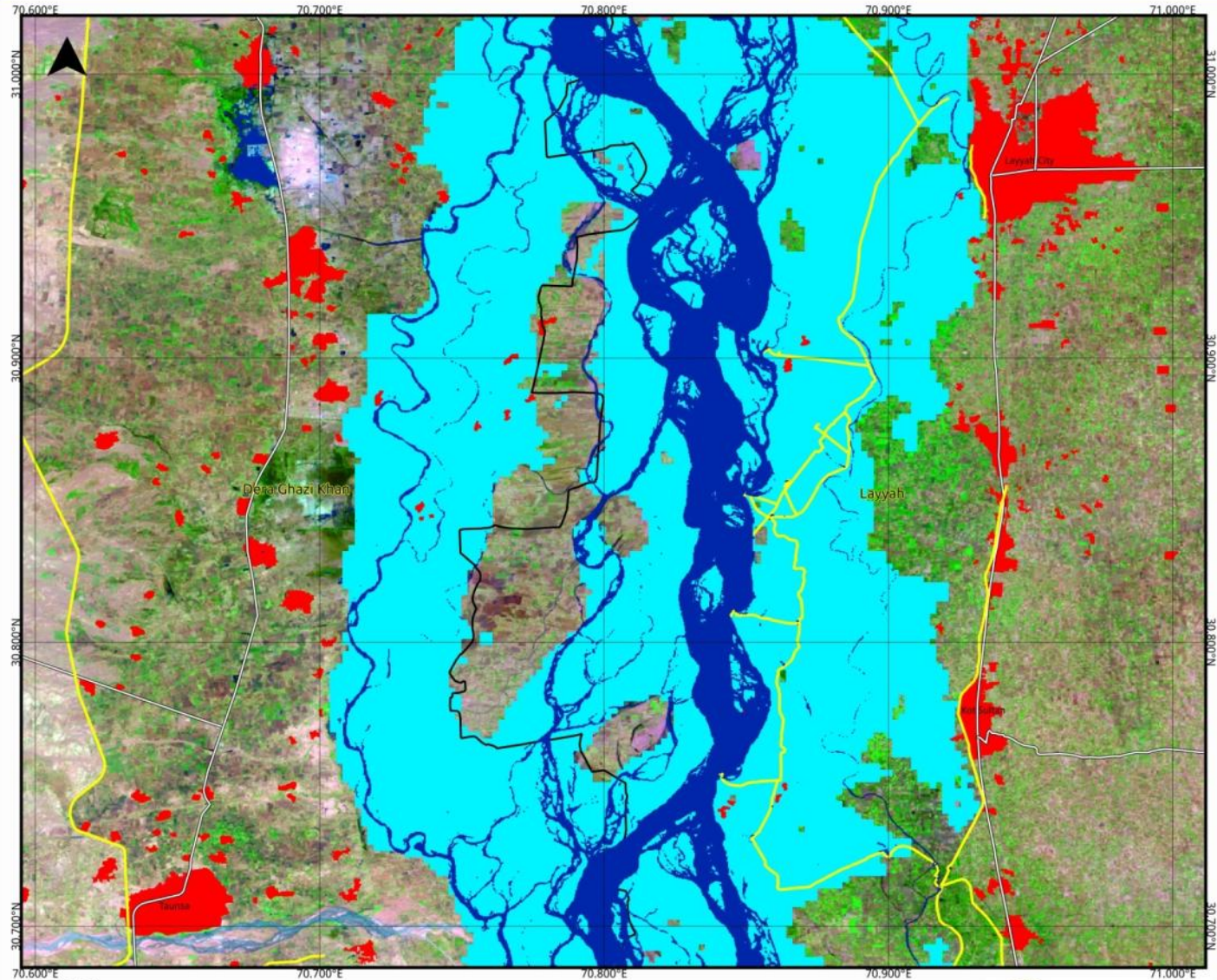
Description:
This map shows the comparison between the inundation extent as on 26-July-2015 with the pre-monsoon river extent. The area in focus is Indus River through Layyah and Dera Ghazi Khan District, where Medium flood levels prevail.
The pre-monsoon river extent is extracted using Landsat-8 15 meters resolution cloud free composite data (01-May-2015 to 30-Jun-2015). The inundation is extracted using MODIS as on 26-July-2015. The information provided in this map is yet to be validated in the field. The map is generated at SACRED-SUPARCO on 26-July-2015.
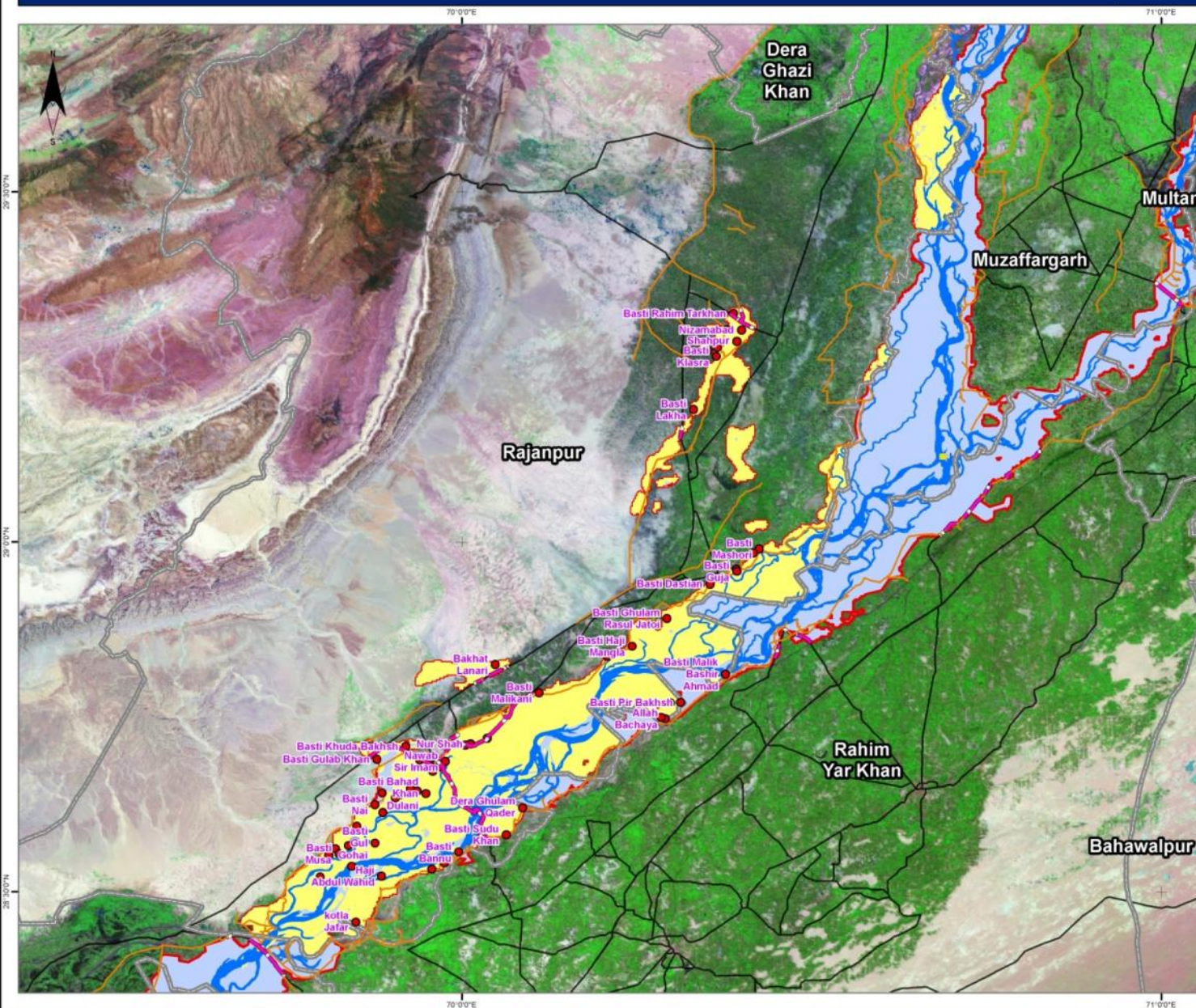
0   2.5   5   7.5   10 km

Legend
- Pre-Monsoon River Extent
- Inundation-26-07-15
- Settlements & Builtup Areas
- Road Network
- Embankments
- Districts

SUPARCO   esa

PAKISTAN FLOOD 2015
RAPID DAMAGE ASSESMENT OF DISTRICT RAJANPUR ON AUGUST 08, 2015

Dera Ghazi Khan

Multan

Muzaffargarh

Rajanpur

Basti Rahim Tarkhan
Nizamabad
Shahpur
Basti
Klasra

Basti Lakha

Basti Mashori
Basti Guja

Basti Dastian

Basti Ghulam Rasul Jatol

Basti Hajj Mangla

Bakhat Lanari

Basti Malik Bashir Ahmad

Basti Malikani

Basti Pir Bakhsh
Allah Bachaya

Rahim Yar Khan

Basti Khuda Bakhsh
Nur Shah
Basti Gulab Khan
Nawab
Sir Imam
Basti Bahad Khan
Basti Nai
Dulani
Dera Ghulam Qader
Basti Gul
Basti Sudu Khan
Basti Musa Gohai
Basti Bannu
Haji Abdul Wahid

Bahawalpur

kotla Jafar

Legend

- Settllement (Affected 57)
- ▬▬ Roads (Affected Length 23.12 Km)
- ─── Kacha-Pakka Roads
- ─── Embankments
- ▮ Agriculture (Affected Area 1362.14 Sq Km)
- ▮ Cumulative Inundation Extent
- ▮ Normal River Course
- ▯ Districts Boundary

The map shows rapid damage assessment of District Rajanpur. Statistics of affected agriculture, roads and settlements are based on the cumulative flood extent from 16 July till August 08, 2015. This assessment is yet to be validated in the field. This map is produced at Space Application Centre for Response in Emergency and Disasters (SACRED)-SUPARCO in close coordination with NDMA and PDMA Sindh on August 10, 2015.

SUPARCO is host to the UN-SPIDER Regional Support Office (RSO) in Pakistan

Projection & Datum: WGS 84

0 5 10   20   30   40
Kilometers

SUPARCO   NDMA   PDMA
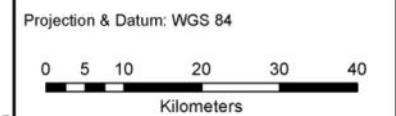
Pakistan Floods 2015

## Simulated Inundations (Rajanpur, Muzzafargarh & R.Y Khan)
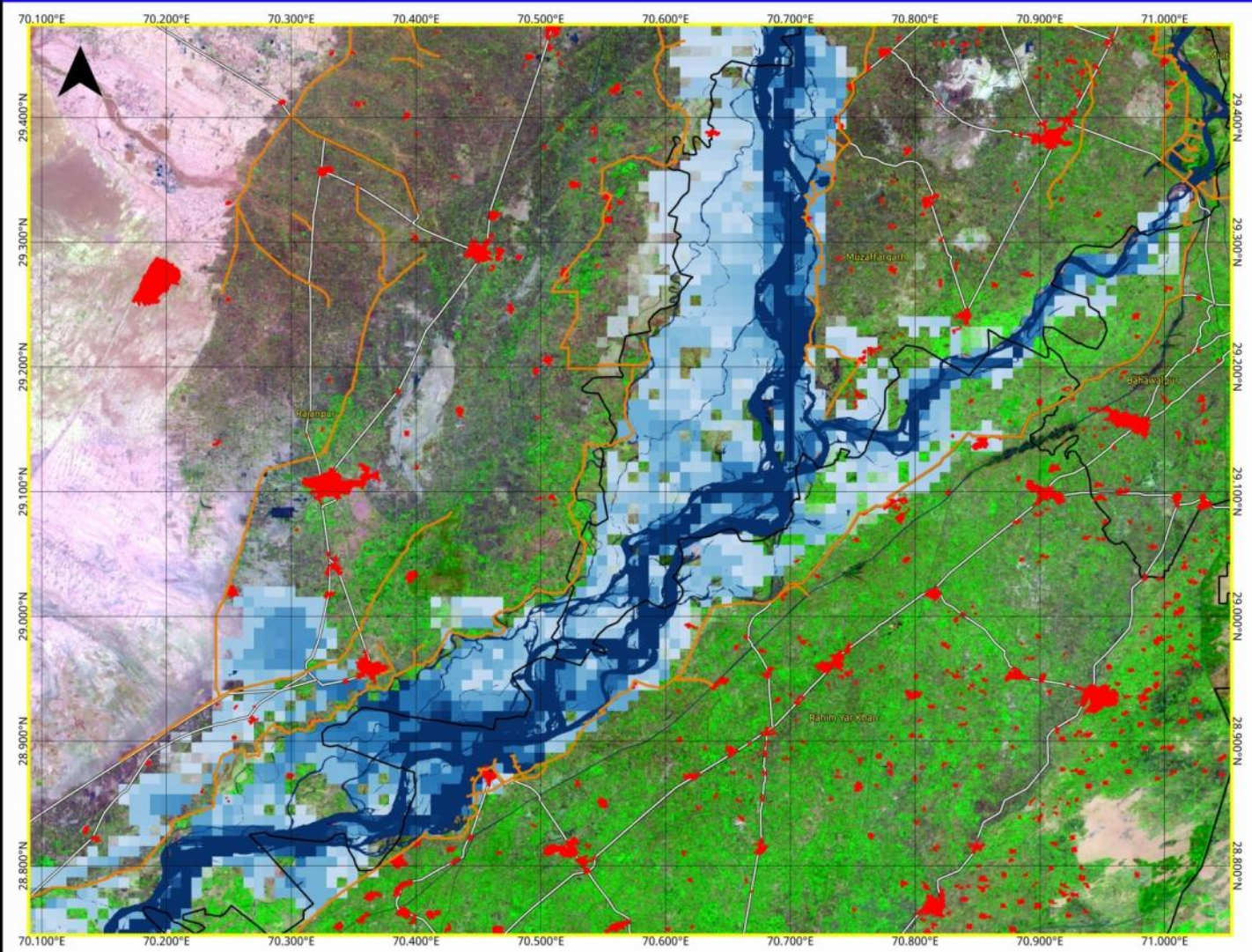
Description:
The map shows maximum simulated inundation from 11/07/15- 01/08/15 based on observed rainfall/discharge data as on 28/07/15. The area in focus is Rajanpur, Muzzafargarh & R.Y Khan Districts. The simulation also includes forecast inundations simulated on Indus River downstream of Kalabagh. These results are based on the Rainfall-Runoff-Inundation (RRI) model, a 2-D diffusive wave model calibrated on the lower Indus River basin. The simulated extent shows inundations with different depths. This analysis is yet to be validated in the field. This information was produced at SACRED SUPARCO on 29 July, 2015.
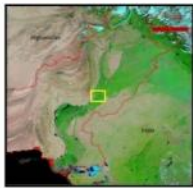
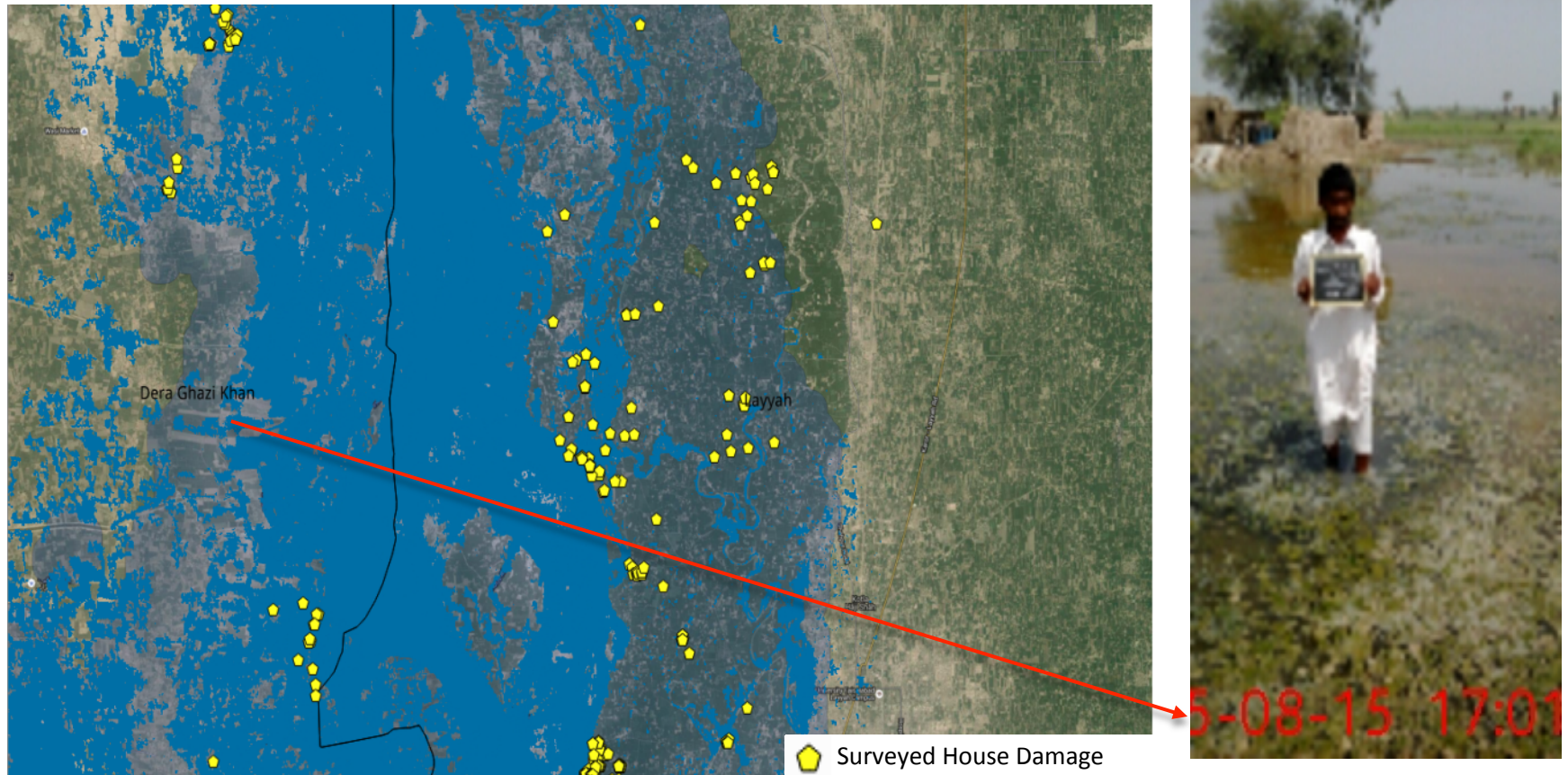## Legend

- ■ Pre-Monsoon River Extent
- ■ Settlements & Builtup Area
- ▭ District Boundary
- — Embankments
- — Road Network
- ● Dams&Barrages

Simulated Flood Depth (m)
- 0.1
- 1.0
- 2.0
- 3.0
- 5.0

Scale: 0 — 7.5 — 15 — 22.5 — 30 km
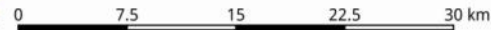
SUPARCO

HOUSE DAMAGE ASSESSMENT – FLOODS 2015

Surveyed House Damage

SUPARCO WAS REQUESTED BY THE GOVERNMENT OF PAKISTAN TO ASSIST IN VALIDATION OF HOUSE DAMAGE ASSESSMENT SURVEYS. THE VALIDATED DATA IS THEN USED FOR THE DISBURSEMENT OF COMPENSATIONS BY THE GOVERNMENT.

EXPECTATION/FUTURE PLANS

- Participation in Regional TAM Mission

- SUPARCO can provide Resource persons for Flood Modeling trainings

- Participation in Collaborative projects

- Capacity Building in the field of SAR data processing and analysis for Disaster monitoring, mapping and damage assessment especially earthquake and landslide