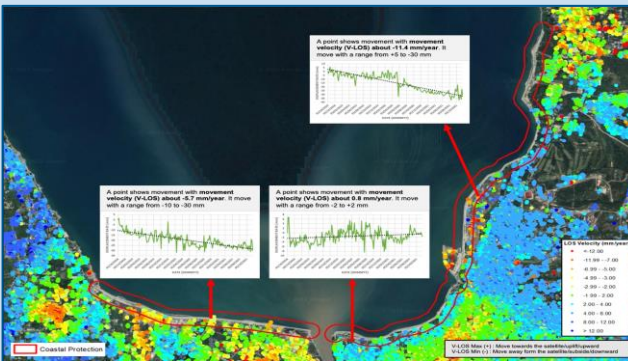
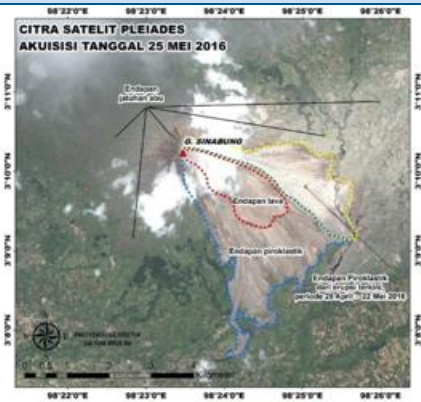
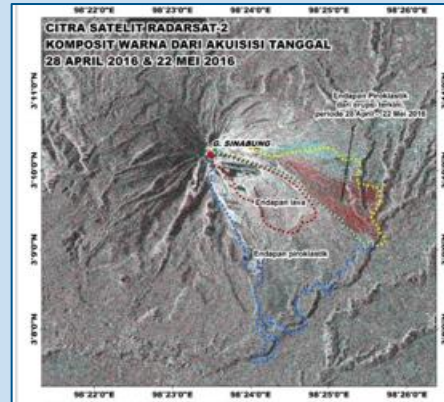
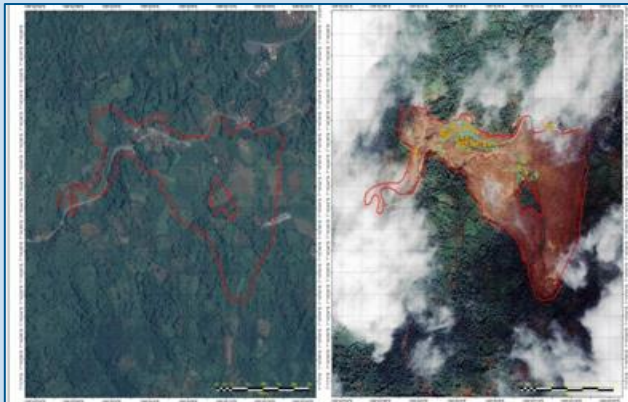


# Satellite Earth Observation Services Support for NATIONAL DATA PORTAL in Indonesia)



**PRESIDENTIAL REGULATION NUMBER 39 OF 2019 FOR ONE INDONESIA DATA SIGNED ON 12 JUNE 2019.**

**SATU DATA INDONESIA** or One Indonesia Data is a government data management policy to generate the reliable and accurate data, up to date, integrated, easily accessible, and can be shared and used by the stakeholders.

**PORTAL SATU DATA INDONESIA** is an Indonesia's official open data portal which developed to improve data governance management to support the implementation of government transparency and accountability, as well as support national development.

Access to portal satu data:  
<https://satudata.go.id/home>

**Data Indonesia Dalam Satu Portal**

**DATASET FEATURES:**  
SPATIAL : 11,79%  
STATISTIC : 88,21%

**SATU DATA INDONESIA**

**Data Indonesia, Dalam Satu Portal**  
Temukan data-data Pemerintah dengan mudah!

Semua Data Cari Data Publik Indonesia

**T o p i k**

- Pertahanan dan Luar Negeri
- Ekonomi dan Industri
- Pembangunan Daerah
- Perindungan Sosial dan Kesehatan
- Ketertiban Umum dan Keselamatan
- Pendidikan dan Tenaga Kerja
- Lingkungan dan Sumber Daya Alam
- Budaya dan Agama
- Pemerintahan Umum
- Pendukung Umum

Secretariat of One Data Indonesia



Kementerian PPN/  
Bappenas

Ministry of National Development  
Planning/BAPPENAS



**INA-GEOPORTAL** as a national geoportals that connects various Ministries, Institutions, Provinces, and Regions that are partners in connecting the National Geospatial Information Network (JIGN) node. Users can use the features of data analysis, geoprocessing, geotagging, drag and drop data files with opensource-based mapviewer technology.

**DATASET FEATURES:**

- Data analysis
- Geoprocessing
- Geotagging
- Downloading data including base map (administration, LULC, National DEM)

One Map Policy Portal was developed by the Geospatial Information Agency (BIG)



Access to Ina Geospatial Portal:  
<https://tanahair.indonesia.go.id/portal-web>

## STATISTIC INDONESIA

The data is derived from its comprehensive statistical activities, comprises of periodic information on structure and growth of economy, social change, and development.

Those statistics may be derived from its own researches and surveys as well as from other government department as secondary data.

The screenshot displays the official website of Statistics Indonesia (BPS). The header includes the logo and name 'STATISTICS INDONESIA' in blue, with language options for 'Indonesia' and 'English', and a search bar. The navigation menu contains links for Home, About, News, Advanced Release Calendar, Publication, Press Release, Service, and PPID. A 'CENSUS RESULT' button is also visible.

The left sidebar features a menu with the following categories and sub-items:

- Social and Population** (dropdown arrow):
  - Climate
  - Consumption and Expenditure
  - Education (button: Selengkapnya...)
- Economic and Trade** (dropdown arrow):
  - Business & Consumer Tendency Index
  - Communication
  - Construction (button: Selengkapnya...)
- Agriculture and Mining** (dropdown arrow):
  - Animal Husbandry
  - Fishery
  - Food Crops (button: Selengkapnya...)

The main content area features a large banner for 'REGSOSEK' (Registrasi Sosial Ekonomi Tahun 2022) with the dates '15 Oktober - 14 November 2022' and the slogan 'Mencatat untuk Membangun Negeri'. Below the banner is a search bar and a 'BPS Province Website' section with a dropdown menu to 'Choose Province'. The 'TUJUAN PEMBANGUNAN BERKELANJUTAN | SUSTAINABLE DEVELOPMENT GOALS' logo is prominently displayed.

The 'LATEST INFORMATION' section is titled 'News' and features a news item: 'BPS Receives Audience from Kemendesa'. The text of the news item reads: 'Jakarta -Friday afternoon (28/01/2022), the Acceleration of Development of Disadvantaged Villages, Eko Sri Haryanto, Head of BPS, Margo Yuwono, Eko conveyed...'. Below the news item are sections for 'BPS Activities' (dated Jan, 31st 2022) and 'Other Activities'.

The right sidebar contains several utility links: 'Information About SP2020' (Sensus Penduduk 2020), 'COVID-19 BPS Survey' and 'COVID-19 BPS Publications', 'DEVELOPMENT PLANNING DATA', 'Statistical Geographic Information System', and 'Satu Data Indonesia'.

Access to Statistics Indonesia:  
<https://www.bps.go.id>



# NATIONAL DATA GEOPORTAL FOR DISASTER



**BNPB**



**SIPANDORA**  
Sistem Pemantauan Bumi Nasional Berbasis Android

Unduh Aplikasi

Sistem Pemantauan Bumi Nasional  
Sistem Pemantauan Bumi Nasional (SPM) yang terdiri dari Sistem Informasi Geospasial (SIG) dan Sistem Pemantauan Berbasis Android (SIPANDORA) untuk memantau informasi terkait bencana.

9508 Layers | 41 Maps | 35 Users

**InaRISK**  
how risky is your place?

Home | Tentang InaRISK | Infografis | Indeks Risiko | Monitoring SPDR | Resiliensi | Metodologi | Disclaimer | GIS Services | Gallery Maps | Gallery Webgis | Dashboard Persebaran & Penilaian | Dashboard ACB | Dashboard SPAB | Dashboard STEP-A | Download | Panduan Penggunaan | Baku Risiko Bencana Indonesia | Baku RIB 2021

**METEOROLOGICAL, CLIMATOLOGICAL, AND GEOPHYSICAL AGENCY**

PROFILE | WEATHER | CLIMATE | AIR QUALITY | EARTHQUAKE & TSUNAMI | IT & INFRASTRUCTURE

Weather Forecast (12 Oktober 2022)

City	Time	Weather	Temp
Banda Aceh	19:00 WIB	Partly Cloudy	28°C
Serang	19:00 WIB	Mostly Cloudy	26°C
Bengkulu	19:00 WIB	Light Rain	24°C
Yogyakarta	19:00 WIB	Light Rain	24°C
Jakarta	19:00 WIB	Mostly Cloudy	25°C

Latest Earthquake

12 Oktober 2022, 16:55:55 WIB  
Magnitude 3.4  
Depth 1 km  
Location 2.07 LUJ - 98.97 BT  
Pusat gempa berada di darat 6 km TimurLaut Tapanuli Utara  
Felt (MMI Scale): III Tarutung, III Parmonangan, II Silangkit

**SIPANDA**  
Sistem Informasi Pemantauan Sumber Daya Alam dan Lingkungan

Sumber Daya Wilayah Darat | Sumber Daya Air | Sumber Daya Wilayah Pesisir dan Laut

**SIMBA**  
Sistem Informasi Mitigasi Bencana Alam

Peringatan Dini Bencana | Dampak Bencana

**InaRISK Gallery WebGIS**  
Available Group Gallery WebGIS

WebGIS: Tanggapi Bencana | WebGIS: Laporan Kegiatan | WebGIS: Kajian Risiko | WebGIS: Rencana Saliur | WebGIS: Monitoring | WebGIS: Peta Papua '19 2022

**InaRISK Gallery WebGIS**  
Available Group Gallery WebGIS

WebGIS: Tanggapi Bencana | WebGIS: Laporan Kegiatan | WebGIS: Kajian Risiko | WebGIS: Rencana Saliur | WebGIS: Monitoring | WebGIS: Peta Papua '19 2022

**Air Quality**  
Sehat (PM2.5: 40), Baik (PM2.5: 20), Sedang (PM2.5: 10), Buruk (PM2.5: 5)

**Climate Information**  
Days Without Rain

**Data Online**  
ALUR PENYEDIAAN PORTAL DATA ONLINE

SIPANDORA: <https://sipandora.lapan.go.id>

Authority:

Feature:

- SIPANDA : Natural Resources & Environment Monitoring Information System
- SIMBA : Natural Disaster Mitigation Information System

InaRISK: <https://inarisk.bnpb.go.id/>

Authority: National Agency for Disaster Countermeasure (BNPB)

Feature:

- Data analysis
- GIS Services
- Infographic
- Downloading tabular data

National Data Geoportal of BMKG: <https://www.bmkg.go.id/>

Authority: Meteorology, Climatology, and Geophysical Agency (BMKG)

Feature:

- Statistic and Tabular data
- Web Map
- Tsunami Early Warning

# NATIONAL DATA GEOPORTAL FOR DISASTER RESPONSE FOR INFRASTRUCTURE REHABILITATION

13 Oktober 2022 15:37:01 WIB Kebijakan | Hubungi kami | Login

**SITABA** BERANDA BERITA BENCANA STATISTIK PRA BENCANA BENCANA TERKINI PENANGANAN PUPR INFOGRAFIS SATGAS BENCANA INOVASI PUPR

Semua bulan Semua tahun

Supported by

Update Terbaru

- Banjir, Kabupaten Lebak - Banten - 10/10/2022
- Banjir, Kota Singkawang - Kalimantan Barat - 10/10/2022
- Banjir, Kabupaten Lamandau - Kalimantan Tengah - 10/10/2022

**Statistik Penanganan Bencana PUPR**  
Terakhir diupdate: 13-10-2022

Berdasarkan Data PUPR

**520** Bencana Alam

**22** Banjir Bandang

**388** Banjir

**1** Abrasi

**1** Puting Beliung & Banjir Rob

**13** Rob

**1** Banjir, Longsor & Puting Beliung

[Selengkapnya >](#)

**Statistik Bencana Alam**  
Terakhir diupdate: 13-10-2022

Berdasarkan Data BNPB

**2803** Bencana Alam

**885** Puting Beliung

**499** Tanah Longsor

**239** Kebakaran Hutan Da...

**22** Gempa Bumi

**21** Gelombang Pasang /...

**4** Kekeringan

[Selengkapnya >](#)

© Hak Cipta Kementerian Pekerjaan Umum dan Perumahan Rakyat. 2021

**Data Statistik Bencana SITABA**

Data Bencana BNPB | Statistik Infografis | Statistik Penanganan PUPR | Statistik Satgas Bencana | Statistik Inovasi | Statistik Desa Rawan Bencana

Data Statistik Bencana

Persentase

LAST UPDATED ON: 12 Okt 2022

Banjir	1186	Puting Beliung	885	Tanah Longsor	499
Kebakaran Hutan Dan Lahan	239	Gempa Bumi	22	Gelombang Pasang / Abrasi	21
Kekeringan	4	Pergeseran Tanah	3	Abrasi Sungai	2
Kecelakaan Transportasi	2	Banjir Lahar Dingin	1	Kecelakaan Laut	1
Longsor Galian	1	Gerakan Tanah	1	Pergeseran Tanah	1
Cuaca Ekstrem	1	Betakan Tanah	1	Kecelakaan Tambang	1

Data Kerusakan Infrastruktur: 1329.91.632

Data Statistik Korban Bencana: 403.337

**SITABA** BERANDA BERITA BENCANA STATISTIK PRA BENCANA BENCANA TERKINI PENANGANAN PUPR

Menampilkan infografis semua daerah

Tahun Provinsi

Indonesia

**Gerakan Tanah di Indonesia** **Gerakan Tanah di Indonesia**

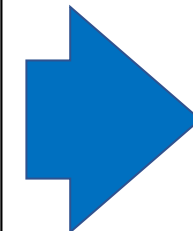
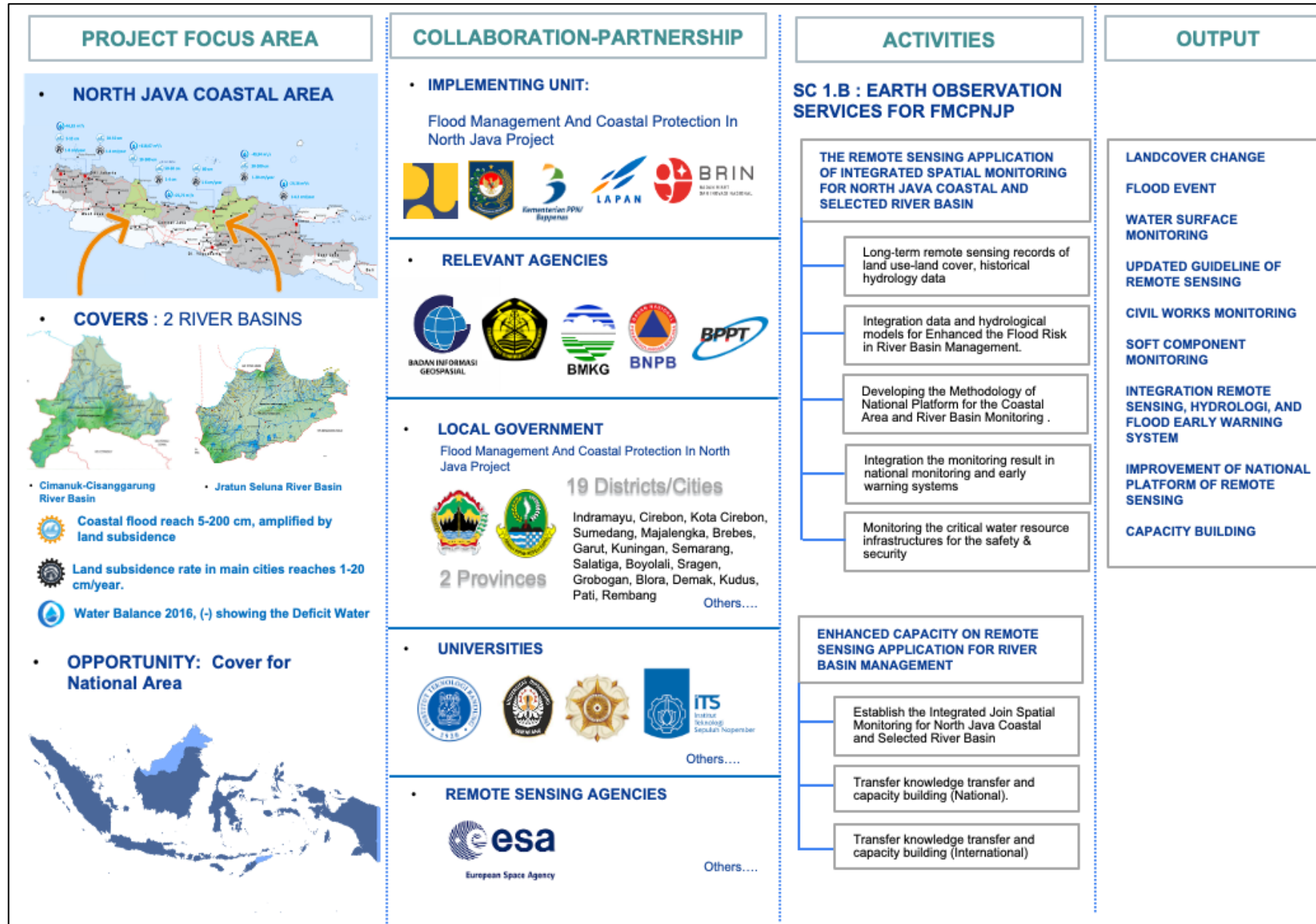
LIHAT DETAIL

SITABA: <https://sitaba.pu.go.id>  
 Authority: Ministry of Public Works and Housing (PUPR)  
 Feature:

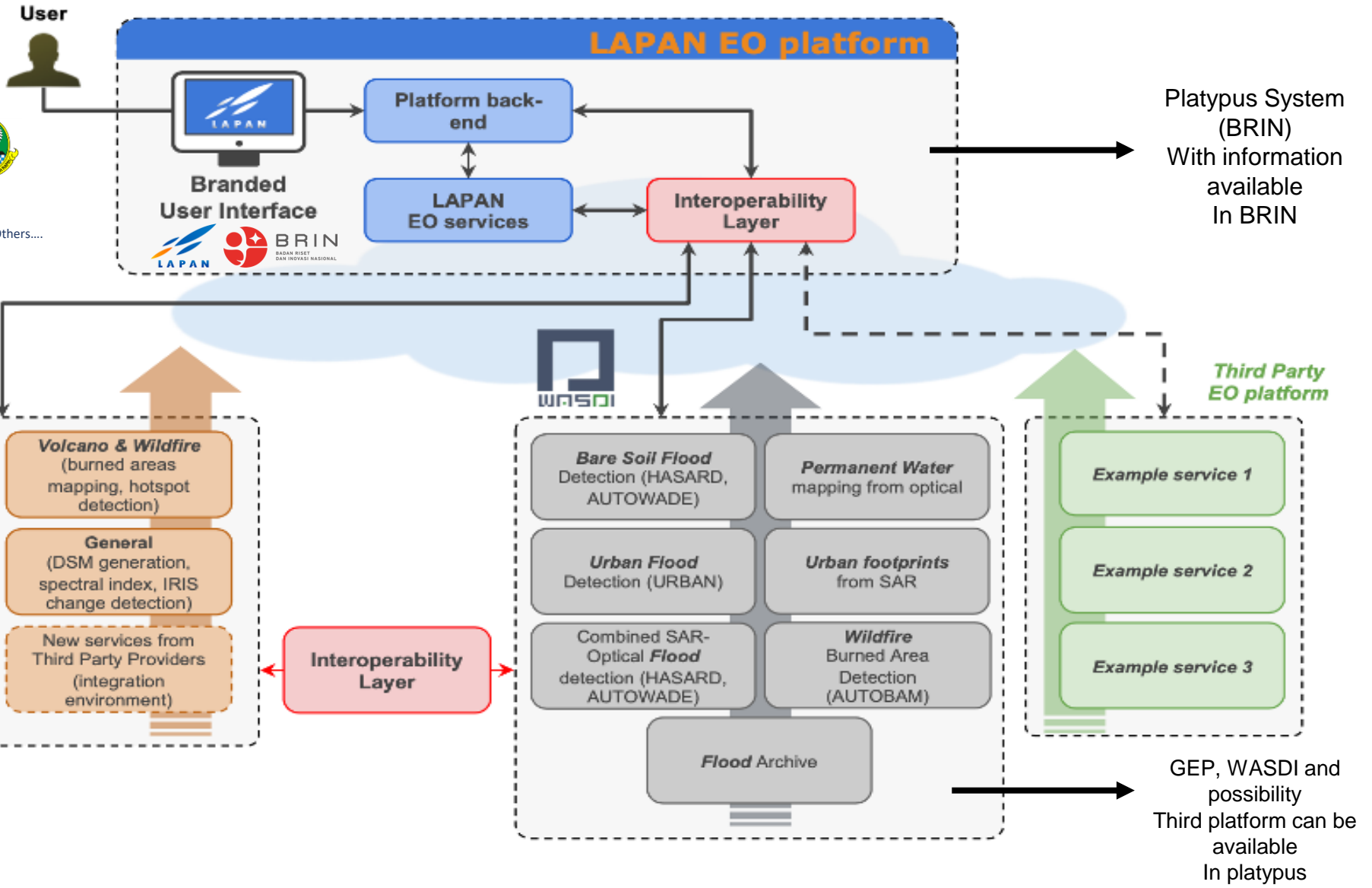
- Statistic and Tabular data
- Web Map of disaster management (mitigation, preparation, response, recovery) and rehab/recon carried out by PUPR



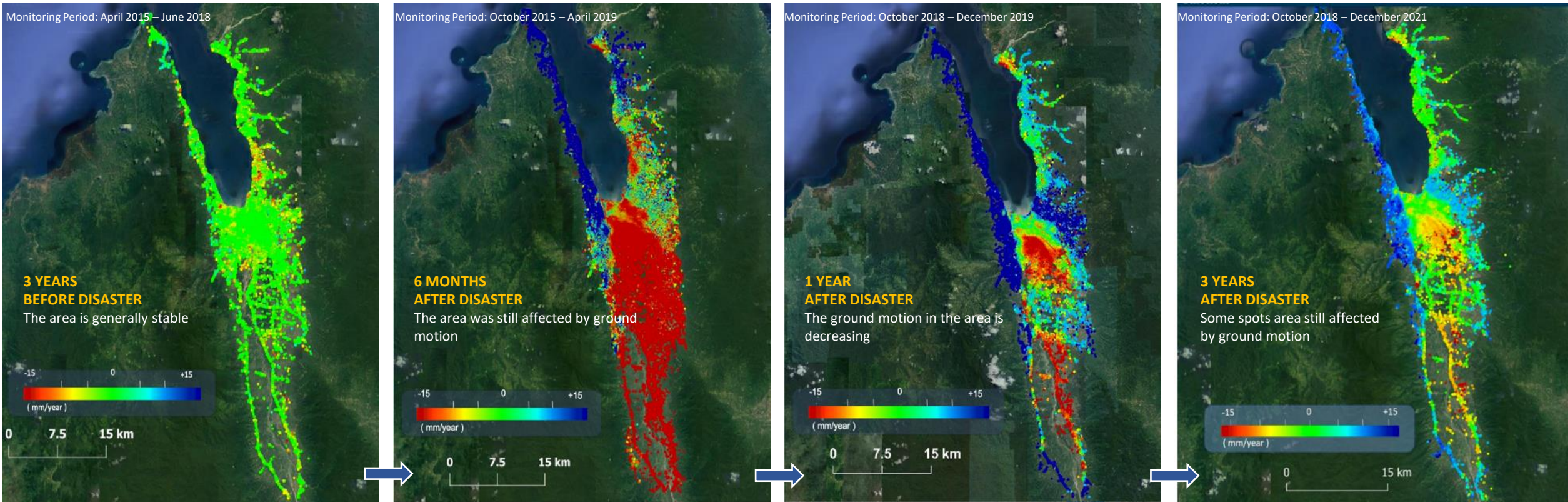
# Engage the National Data Geoportal and the Remote Sensing Services



- PROVIDE A BETTER DATA, BETTER PROJECT DESIGN AND SOLUTION
- PROVIDE EARTH OBSERVATION-BASED PLATFORM
- IMPROVE THE NATIONAL DATA PORTAL







The ground deformation analysis consists in the Multi-Temporal Interferometry processing of the Sentinel-1 images acquired in Descending orbit over Palu from 2015 – December 2021 through the Rheticus® Displacement service.

### RHETICUS

Rheticus® is an automatic, cloud-based, geoinformation service platform. It's carefully designed to deliver insight accurate information, on our ever-changing world.

### RHETICUS® BUILDING CHECK

Rheticus® Building Check provides predictive analysis of any building movement patterns within the monitored area of interest while also timely tracking any anomaly and its evolution over time. Building Check delivers periodic reports based on constant monitoring that allows quick detection of structural instability, supporting the local authorities in charge of the buildings management.

- Land movement maps and stability analysis have been extensively used to inform planning and engineering designs and to support the implementation of BUILD BACK BETTER

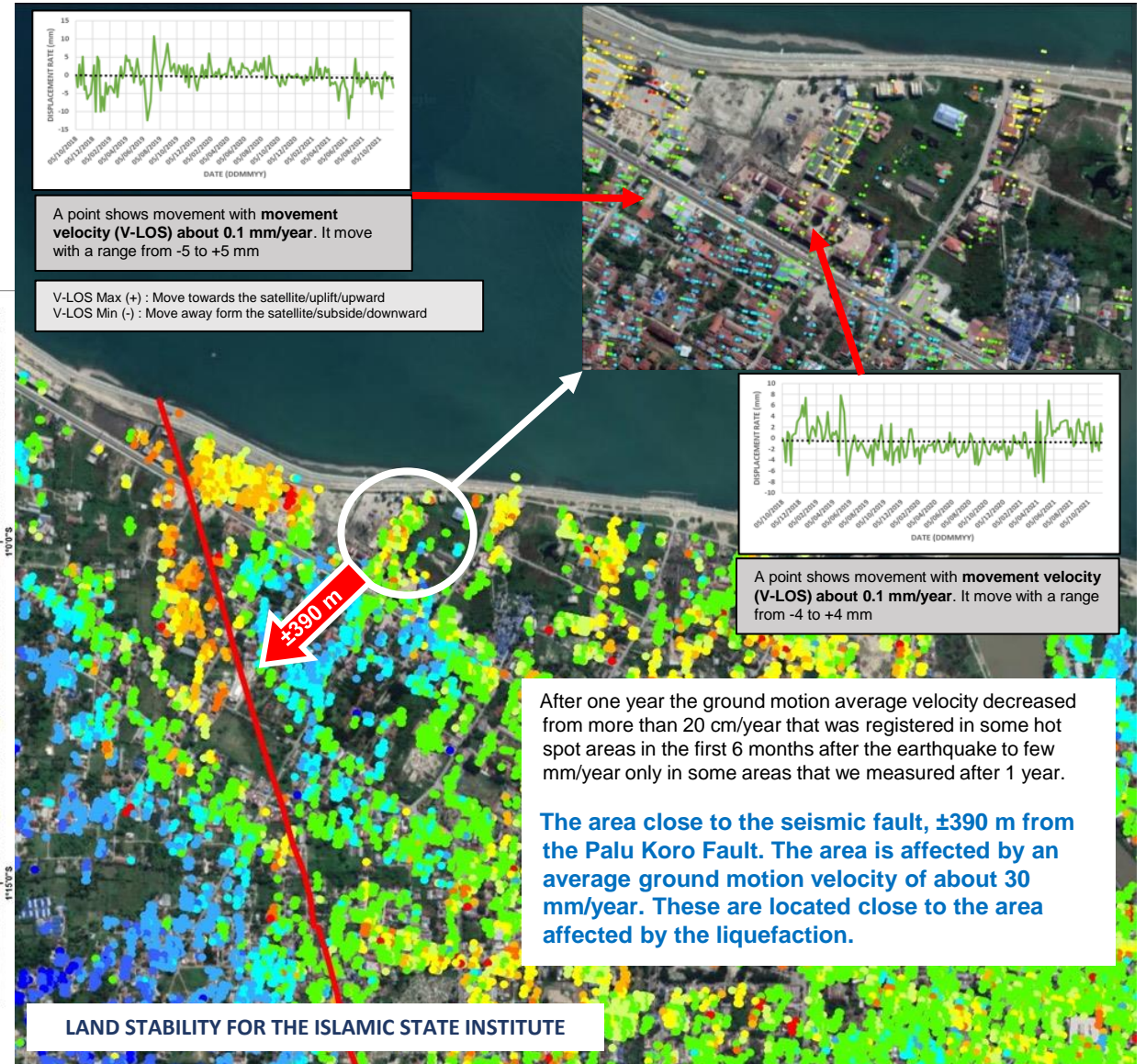
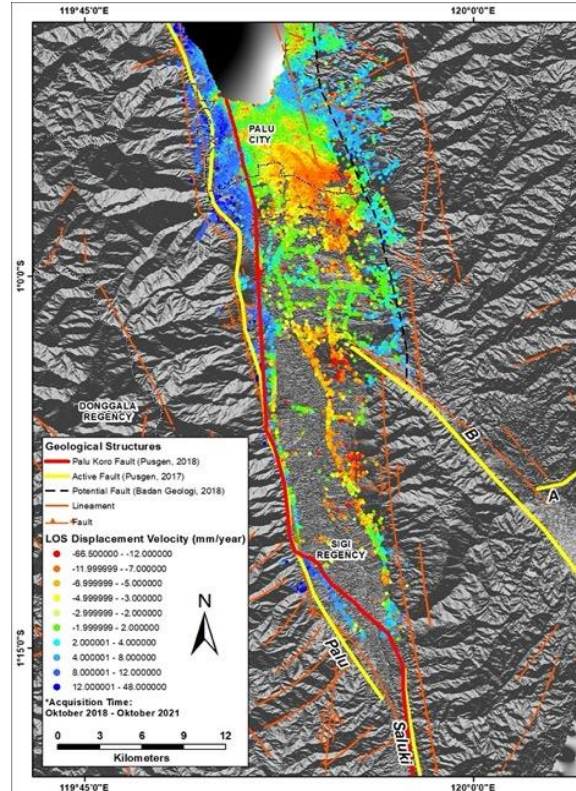
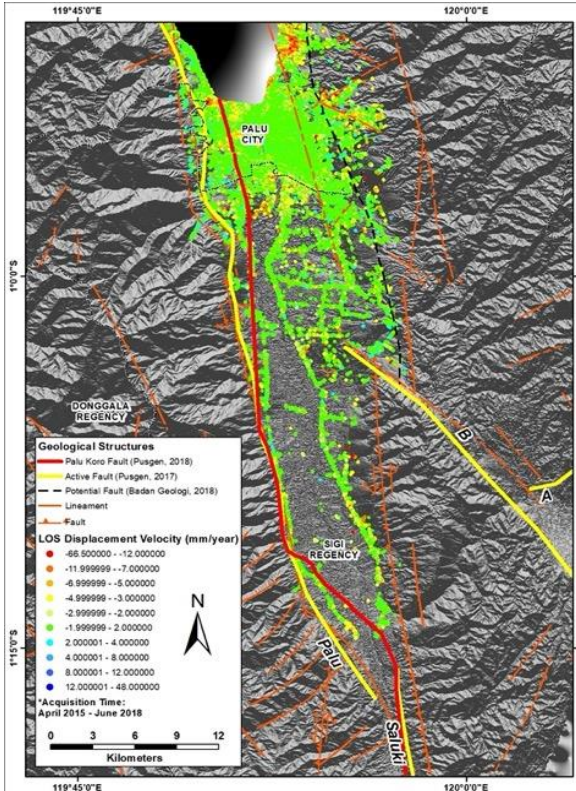


## LAND MOVEMENT MONITORING IN SUPPORTING THE REHABILITATION OF THE ISLAMIC STATE INSTITUTE



### MAIN BUILDING BACK BETTER ELEMENTS:

- DESIGN CHALLENGES
- GREEN CAMPUS AND BUILDING DESIGN
- DISASTER-RESILIENT DESIGN
- GENDER-RESPONSIVE AND INCLUSIVE DESIGN FEATURES



- Monitoring Before Disaster: April 2015 - June 2018
- Monitoring After Disaster: October 2018- October 2021

### LOCATION OF ISLAMIC STATE INSTITUTE

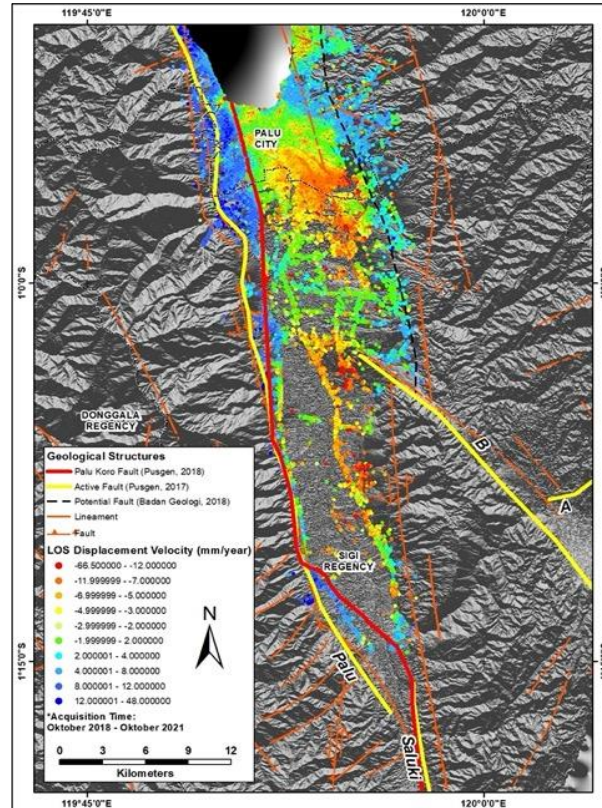
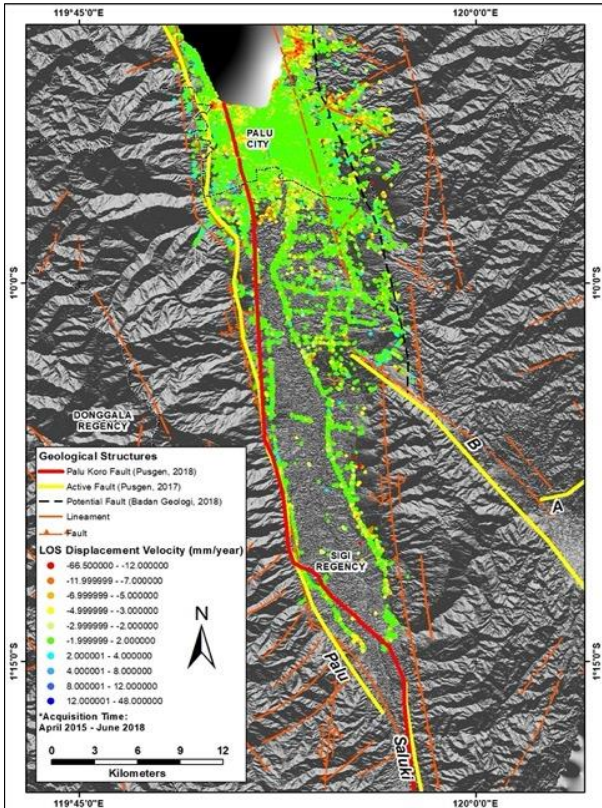


## LAND MOVEMENT MONITORING IN SUPPORTING THE REHABILITATION OF PASIGALA RAW WATER SUPPLY SYSTEM



### MAIN BUILDING BACK BETTER ELEMENTS

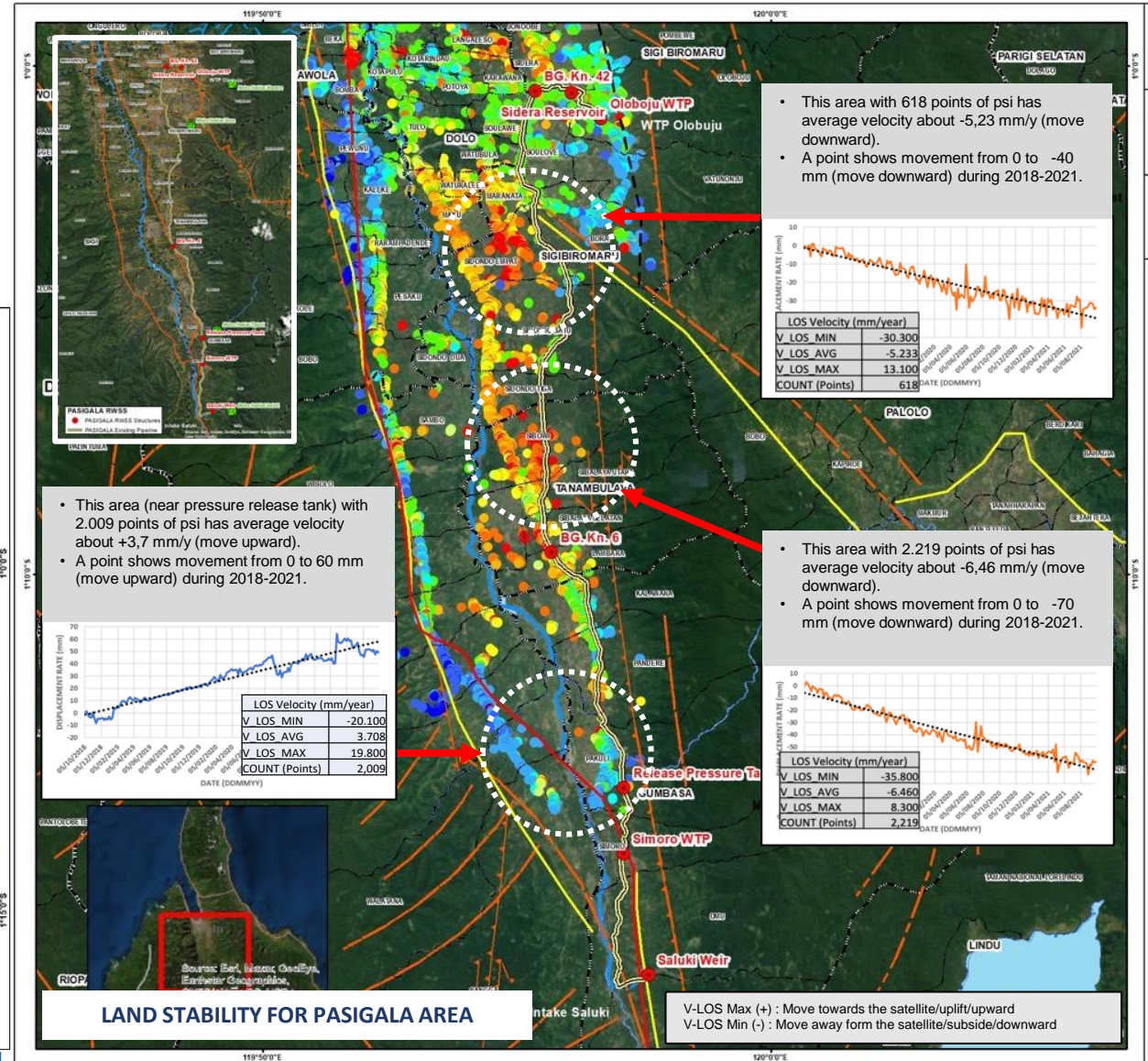
- INCREASED RAW WATER SUPPLY
- EARTHQUAKE/ LIQUEFACTION RESISTANCE OF THE NEW TRANSMISSION PIPELINE
- ENHANCING EARTHQUAKE/ LIQUEFACTION RESISTANCE OF THE EXISTING TRANSMISSION PIPELINE
- PIPELINE MANAGEMENT AND LEAK DETECTION SYSTEM.



• Monitoring Before Disaster: April 2015 - June 2018 • Monitoring After Disaster: October 2018- October 2021

### LOCATION OF PASIGALA RAW WATER SYSTEM

INTERNAL. This information is accessible to ADB Management and staff. It may be shared outside ADB with appropriate permission.  
 INTERNAL. This information is accessible to ADB Management and staff. It may be shared outside ADB with appropriate permission.



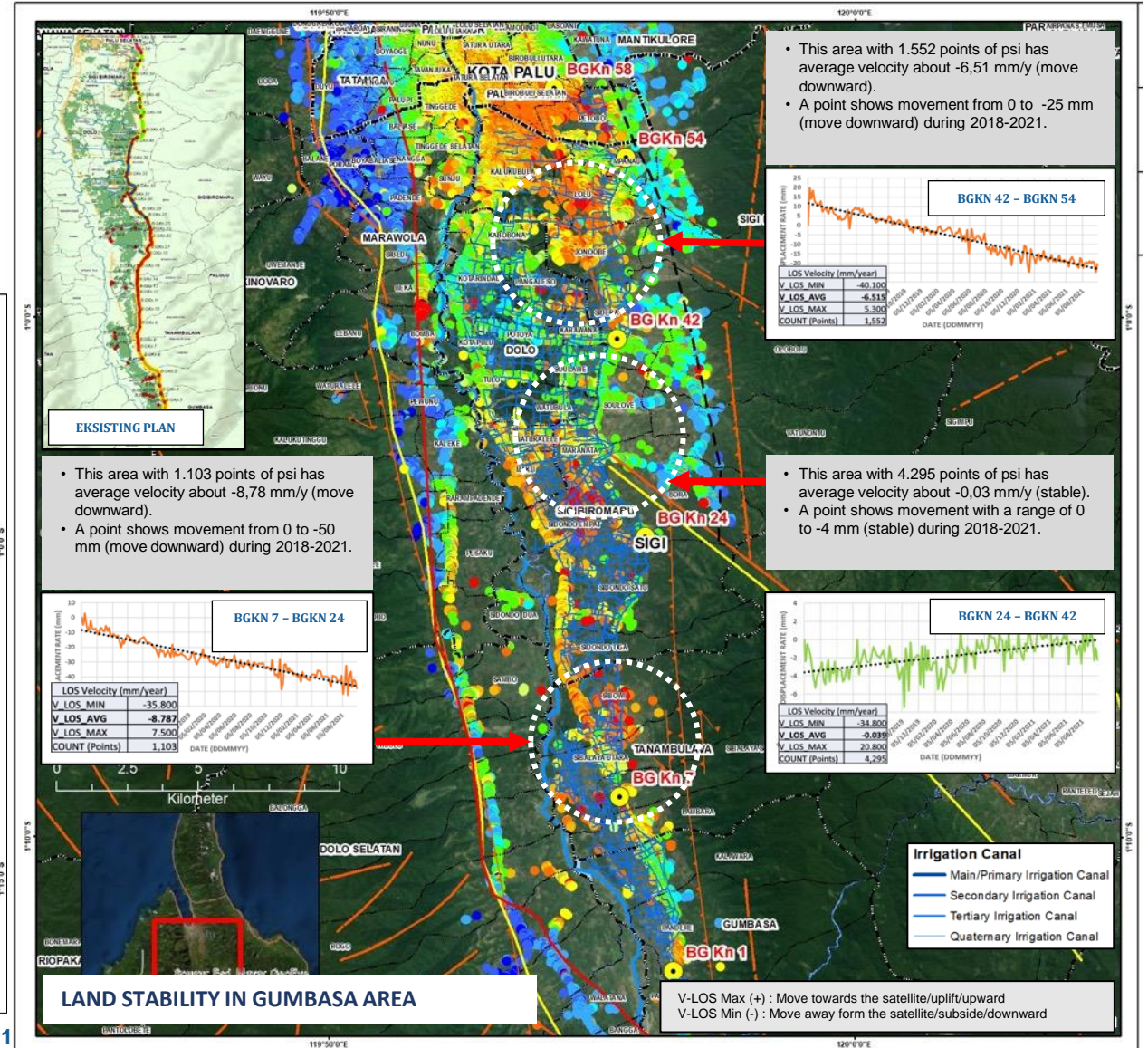
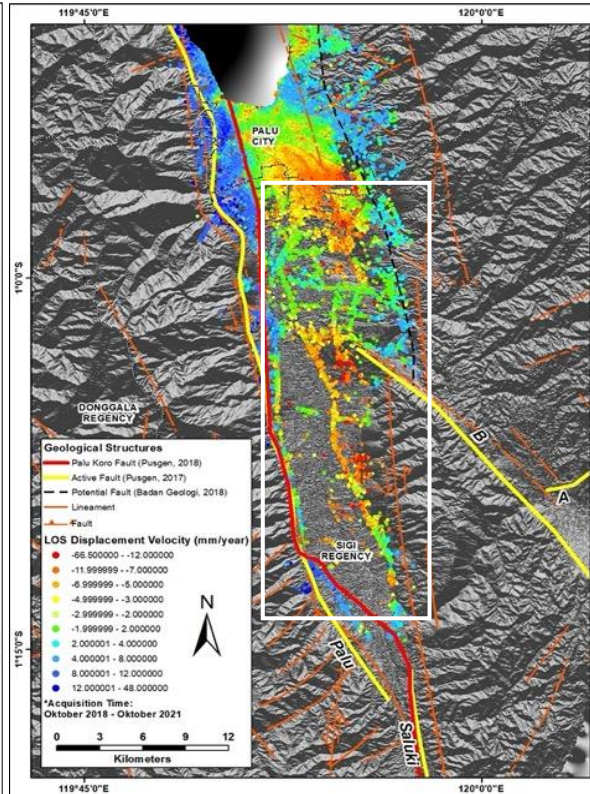
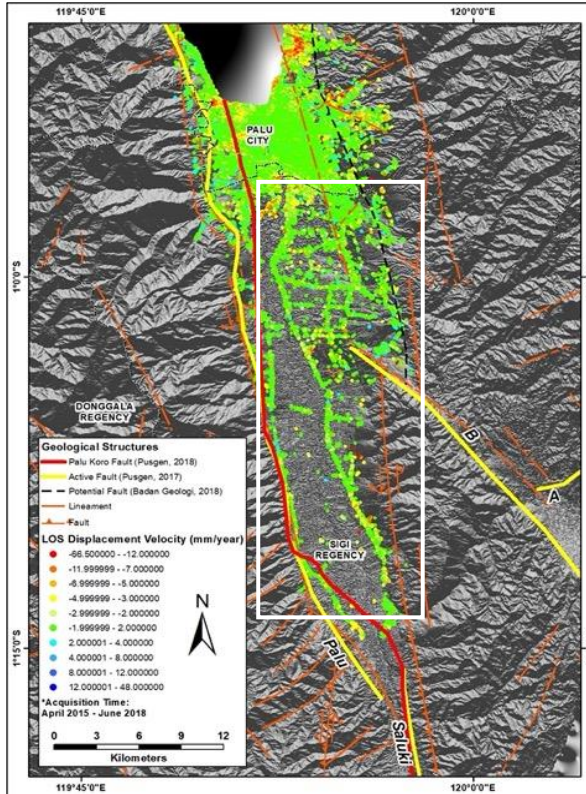


## LAND MOVEMENT MONITORING IN SUPPORTING THE REHABILITATION OF GUMBASA IRRIGATION SYSTEM



### MAIN BUILDING BACK BETTER ELEMENTS

- THE REDESIGN SHOULD BE CONSISTENT WITH THE LEVEL OF DAMAGE
- REDESIGN OF THE MAIN CANAL
- MAIN CANAL STRUCTURES
- SECONDARY CANAL REPLACEMENT

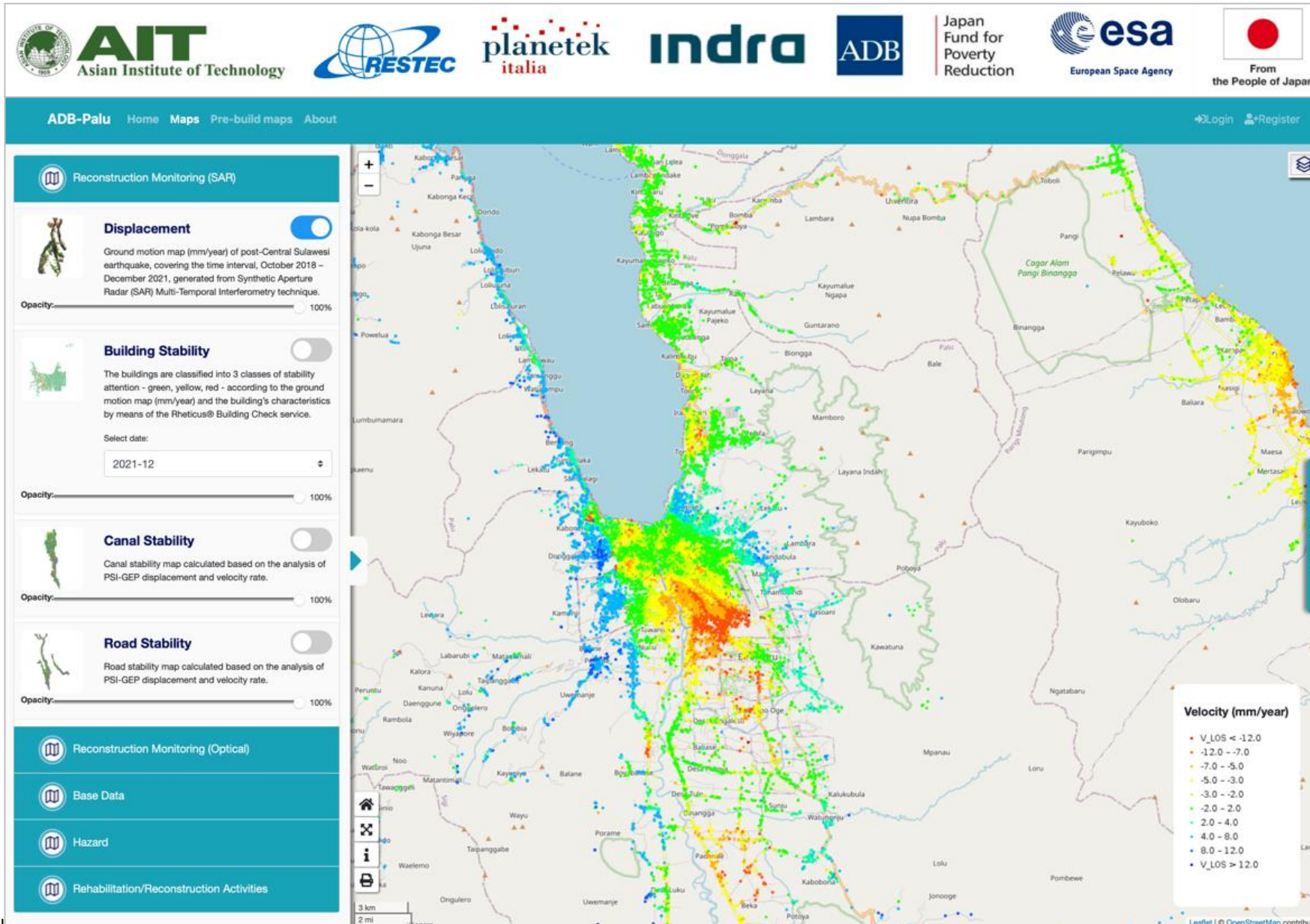


• Monitoring Before Disaster: April 2015 - June 2018 • Monitoring After Disaster: October 2018-October 2021

### LOCATION OF GUMBASA IRRIGATION SYSTEM



## GEOPORTAL FOR MONITORING REHABILITATION AND RECONSTRUCTION IN PALU



- The Project Geoportal supports the reconstruction monitoring by providing a user-friendly and interactive visualization platform for an efficient and up-to-date information.
- The Capacity Building and Transfer Knowledge has been delivered in collaboration with ADB/ESA-AIT and ORPA.



## INSTABILITY AND GLOBAL CHALLENGE FOR MAINTENANCE



- Operators and authorities spend a lot of money fighting against **structural problems** due to natural or human-induced **land instability**;
- Land instability may cause structural damages and failures to roads and bridges, increased maintenance and repair costs, disruptions of service, accidents and casualties;
- **Ground displacement** is one of the best indicators for the likelihood of failure;
- The use of traditional techniques for periodic monitoring of wide networks requires **considerable economic and time resources**;
- Generally, surveys and inspections are performed when the **problems have already occurred** (i.e. damage or failure) due to lack of predictive info about what/where to inspect.



The screenshot shows the 'Subscriptions & Services' page of the Rheticus Interactive platform. The user is logged in as 'useremail@mail.it'. The page is divided into several sections:

- PURCHASED SERVICES:** A table listing three services: 'Rheticus Building Check - Paku', 'Rheticus Build. Check Pekalongan', and 'Rheticus Safeway Surabaya', each with a 'View' link.
- ALL ACTIVE SUBSCRIPTIONS:** A table with one entry: 'Rheticus Interactive 1' with 1000 credits and an expiration date of 'YYYY-MM-DD'.
- SUBSCRIPTIONS & SERVICES AVAILABLE FOR ACTIVATION:** A table listing five services with their estimated costs and details links.
 

Service Name	Estimated Cost	Details
<b>Rheticus Displacement</b> Monitoring service of soil surface millimeter movements based on PSI technique	80 CR PER 100 KM <sup>2</sup>	<a href="#">DETAILS</a>
<b>Rheticus Building Check</b> Provisioning of geo-analytics indicators related to the buildings and structures stability	100 CR PER 100 KM <sup>2</sup>	<a href="#">DETAILS</a>
<b>Rheticus Safeland</b> Provisioning of geo-analytics indicators related to the land stability	100 CR PER 100 KM <sup>2</sup>	<a href="#">DETAILS</a>
<b>Rheticus Safeway</b> Provisioning of geo-analytics indicators related to the roads and railways stability	100 CR PER 100 KM <sup>2</sup>	<a href="#">DETAILS</a>
<b>Rheticus Network Alert</b> Provisioning of geo-analytics indicators related to the pipelines (wastewater) stability	100 CR PER 100 KM <sup>2</sup>	<a href="#">DETAILS</a>

- Rheticus® is a cloud platform developed and operated by Planetek Italia, which provides geoinformative services for monitoring the evolution of the earth's surface, safeguarding infrastructures and protecting natural resources, using satellite images acquired periodically.
- The Rheticus® Interactive platform:
- Allows the end-user to manage the Rheticus® activations through processing credits.
- Allows users to request autonomously the activation of the Rheticus® services of own interest.



**BRIDGING THE GAP BETWEEN GEO-SPECIALISTS AND OPERATIONS**



**Transportation**



**Utilities**



**Insurance / Property Management**



**Natural Risk Management**

- Geospatial interactive dashboard with key indicators and alerts
- Historical time-series analysis and continuous updates
- Predictive analytics, actionable information
- Cloud-hosted info-as-a-service subscription



## Rheticus® RHETICUS BUILDING CHECK

- Areas of Interest:**

- Jakarta
- Cirebon
- Pekalongan
- Semarang
- Surabaya

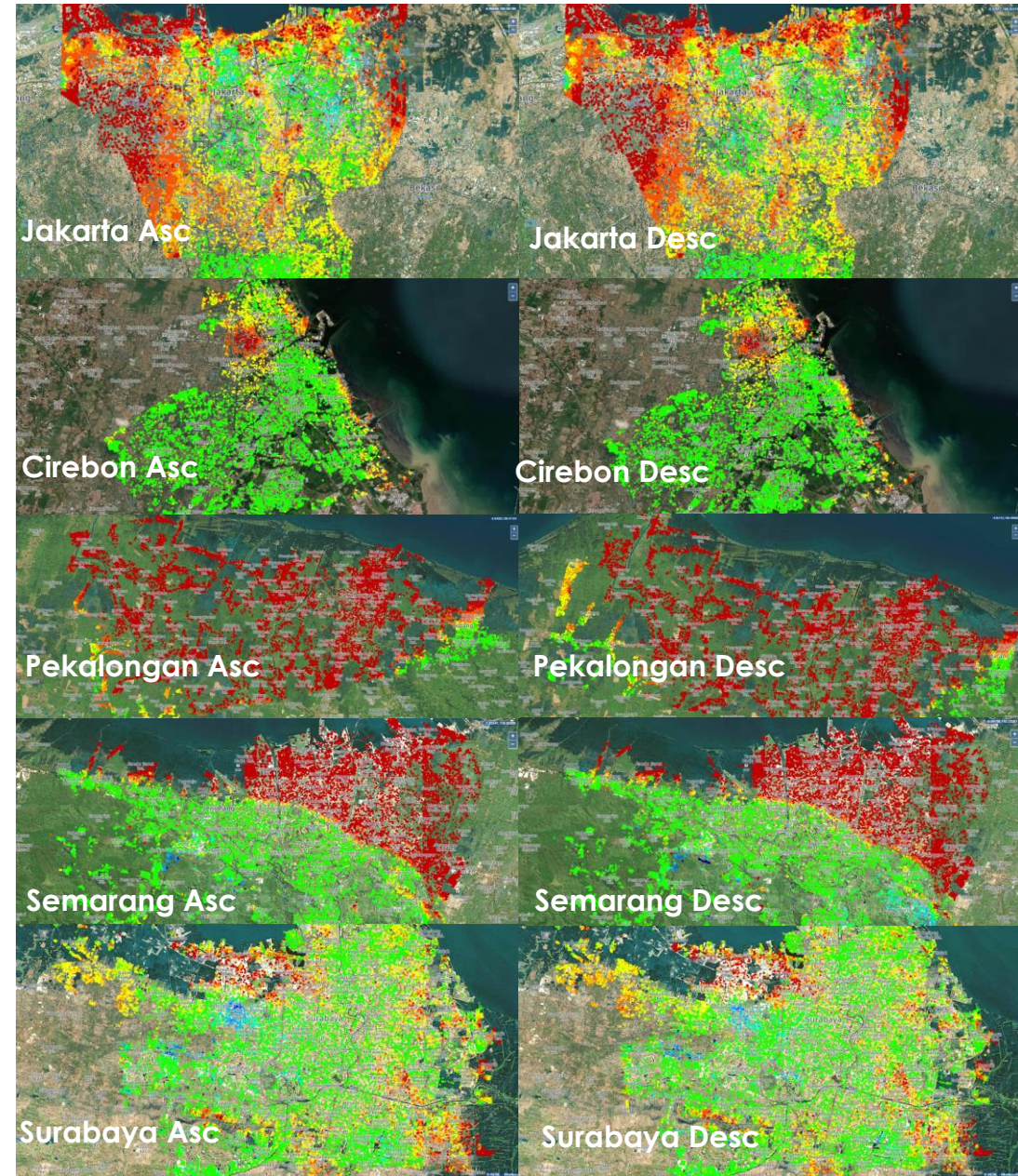
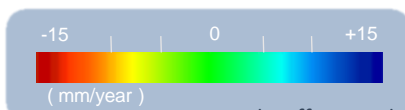
- Data used:**

- Satellite: Sentinel-1
- Orbit: Ascending and Descending
- Period: April 2015 – June 2021

- Methodology;**

The ground motion map obtained through the Rheticus® cloud platform that implements the Persistent Scatterers Interferometry technique, identifies zones and infrastructures more/less prone to instabilities. The ground motion map contains the average velocity of the measured points called Persistent Scatterers (PS) and Distributed Scatterers (DS) highlighting the areas and infrastructures that are moving with respect to the others that are stable.

The measured points are thematized based on the average velocity along the satellite Line-of-Sight (LOS), according to the following colour ramp:









**Rheticus®**  
RHETICUS BUILDING CHECK

## DISPLAYING 2 OF 267.543 BUILDINGS - JAKARTA UTARA

**Building Status**

- RED : 2 (100%)
- YELLOW : 0 (0%)
- GREEN : 0 (0%)
- N/A : 0 (0%)

**Inspection Priority**

No. of Buildings vs Inspection Priority Score (0-1)

**Displacement**

No. of Buildings vs Velocity (mm/year)

**Building ID: 1680548**

Lat: -6.107859  
Lon: 106.779176

Building Status: 1||| RED

Mean Velocity Ascending: -56.6  
Mean Velocity Descending: -63.3  
Mean Differential Velocity Asc: 6.9  
Mean Differential Velocity Desc: 5.3  
Inspection Priority Score (0-1): 1.00

[Analyze trends in Rheticus Displacement](#)

**Building Status**

- RED : 1 (100%)
- YELLOW : 0 (0%)
- GREEN : 0 (0%)
- N/A : 0 (0%)

**Inspection Priority**

No. of Buildings vs Inspection Priority Score (0-1)

**Displacement**

No. of Buildings vs Velocity (mm/year)

**Rheticus®**  
RHETICUS BUILDING CHECK

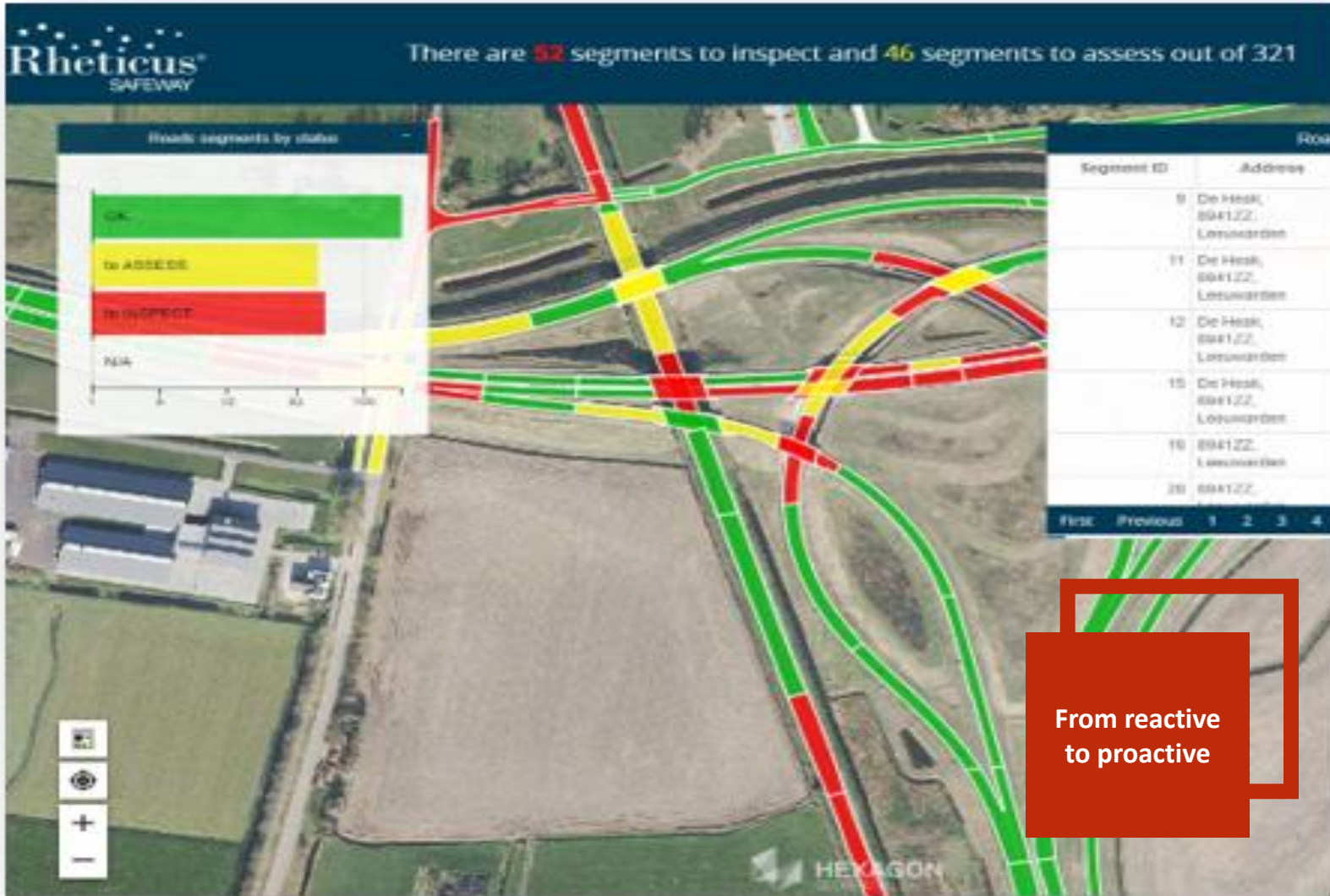
Example of the buildings with the highest inspection priority score (1.0) over the entire Jakarta affected by a subsidence characterized by an average velocity (LOS) of 63 mm/year and a mean differential velocity with respect to the surrounding area of 7 mm/year.

The buildings with the highest level of Inspection priority (**Yellow** and **Red**) have been detected in the eastern part of the Utara coastal area.





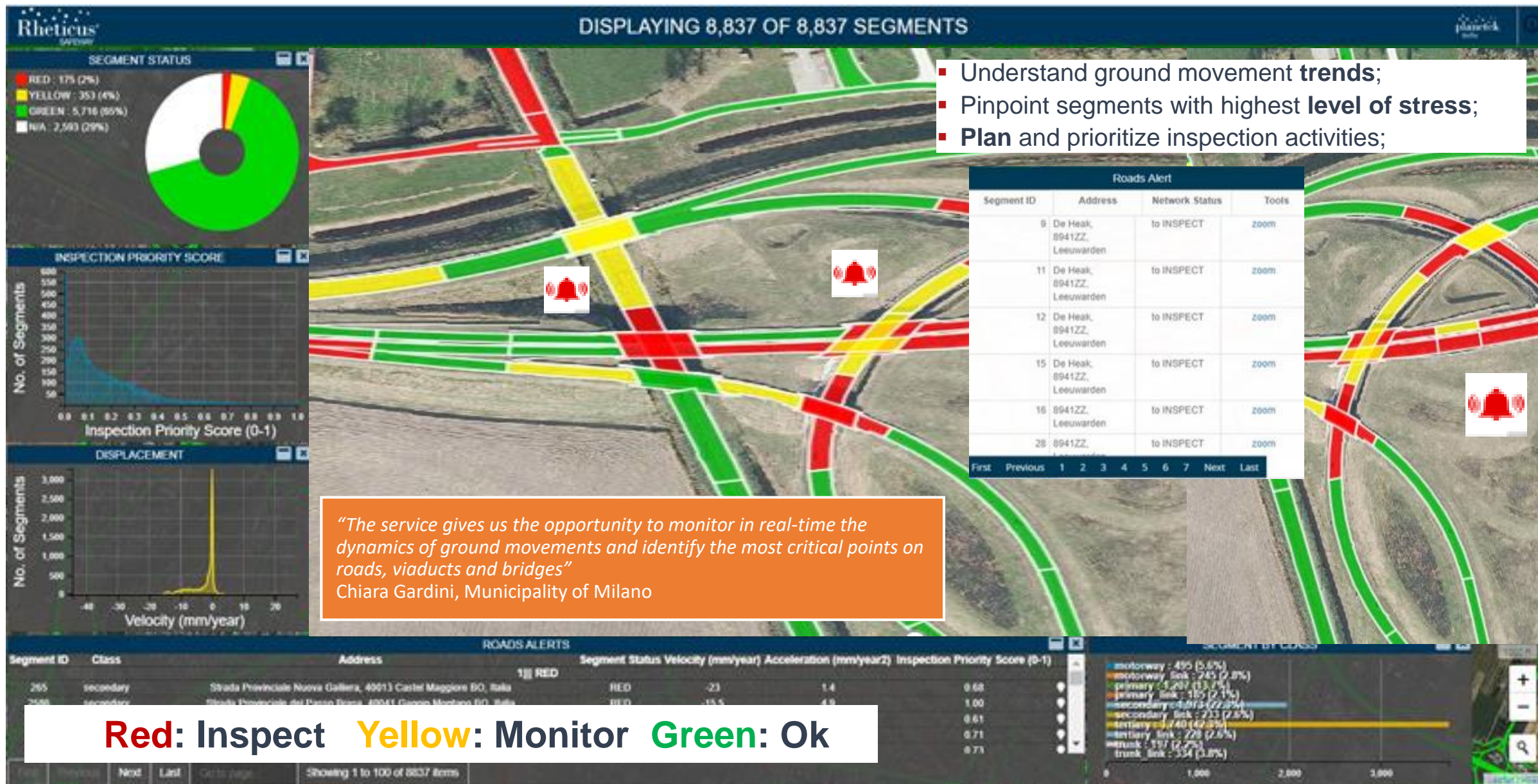
Inspection priority insights for roads and railways operator



From reactive to proactive







- Understand ground movement **trends**;
- Pinpoint segments with highest **level of stress**;
- Plan** and prioritize inspection activities;

*"The service gives us the opportunity to monitor in real-time the dynamics of ground movements and identify the most critical points on roads, viaducts and bridges"*  
 Chiara Gardini, Municipality of Milano

**Red: Inspect   Yellow: Monitor   Green: Ok**





THANK YOU

[www.adb.org](http://www.adb.org)

|

[www.esa.int](http://www.esa.int)