



National Institute of Aeronautics
and Space

DISSEMINATION OF REMOTE SENSING FOR DISASTER EMERGENCY RESPONSE IN INDONESIA

United Nations International Conference on Space-based Technologies for Disaster Risk Reduction
Beijing, China, 11-12 September 2019



Remote Sensing Applications Center
Kusumaning Ayu Dyah Sukowati



Outlines

01

Introduction

Background, Current monitoring system

02

Remote Sensing Activities for Disaster Emergency Response

03

Dissemination Information

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Coordination and Distribution Information

01

Introduction

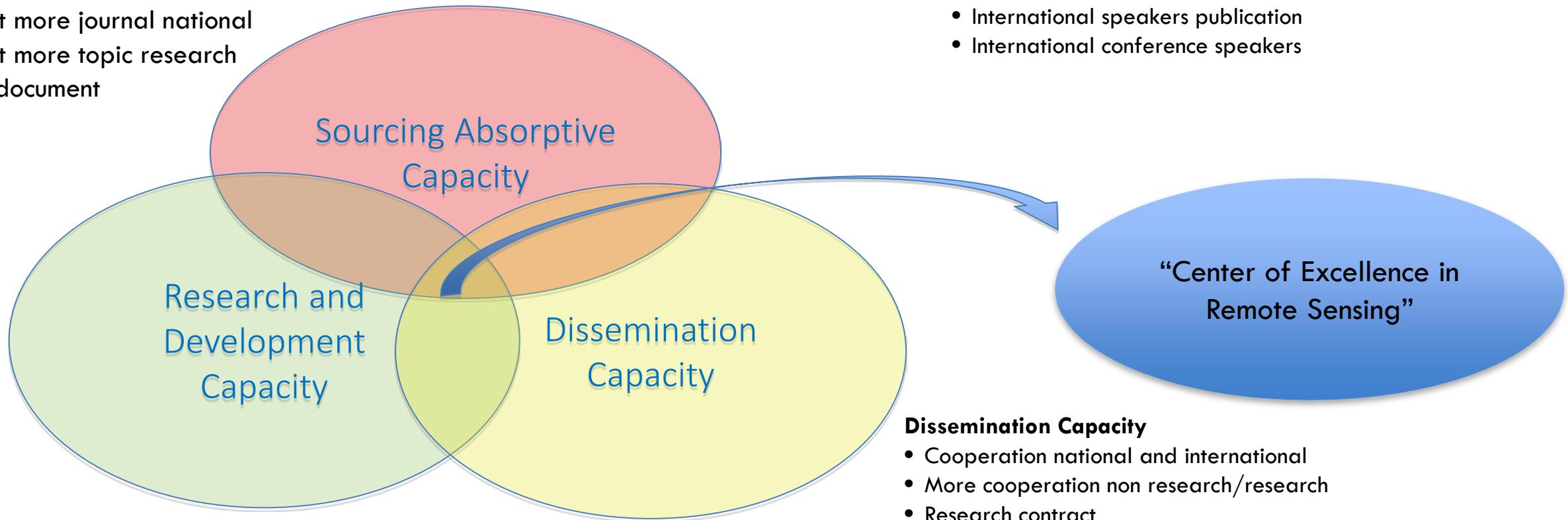
Background, Current monitoring system

Introduction

Background, Current monitoring system

R&D Capacity

- Upgrade and improvement product information
- More national and international publication
- Support more journal national
- Support more topic research
- Patent document



Sourcing Absorptive Capacity

- Upgrade human resources
- Certificate ISO 9001/2015
- International speakers publication
- International conference speakers

Dissemination Capacity

- Cooperation national and international
- More cooperation non research/research
- Research contract
- National appriicate
- National reference
- Socio-economic benefit

Introduction

Background, Current monitoring system

Role of LAPAN on Remote Sensing Activities in Indonesia (Act No. 21/2013)

Substances related to remote sensing activities, such as:

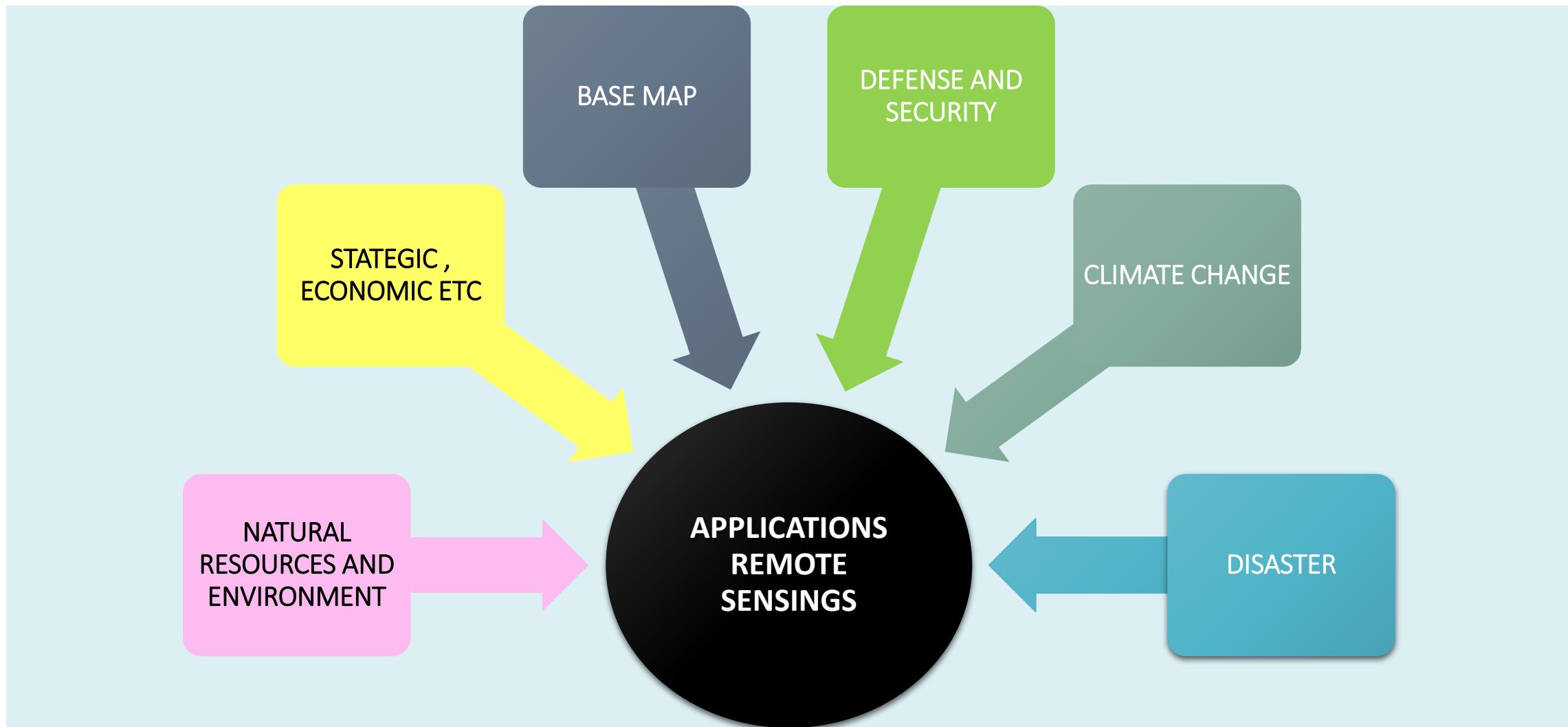
- Planning, developing and operating **satellites and remote sensing ground stations** (articles 16 and 17).
- Procurement of high-resolution remote sensing data (article 18).
- Preparation of **the standard methods and the data processing quality** (article 19).
- Organizing the storage and distribution of data through **the National Remote Sensing Data Bank** as a network node remote sensing data in the National Spatial Data Network System (article 20).
- Establish **guidelines for the use and dissemination of remote sensing information** (article 22).



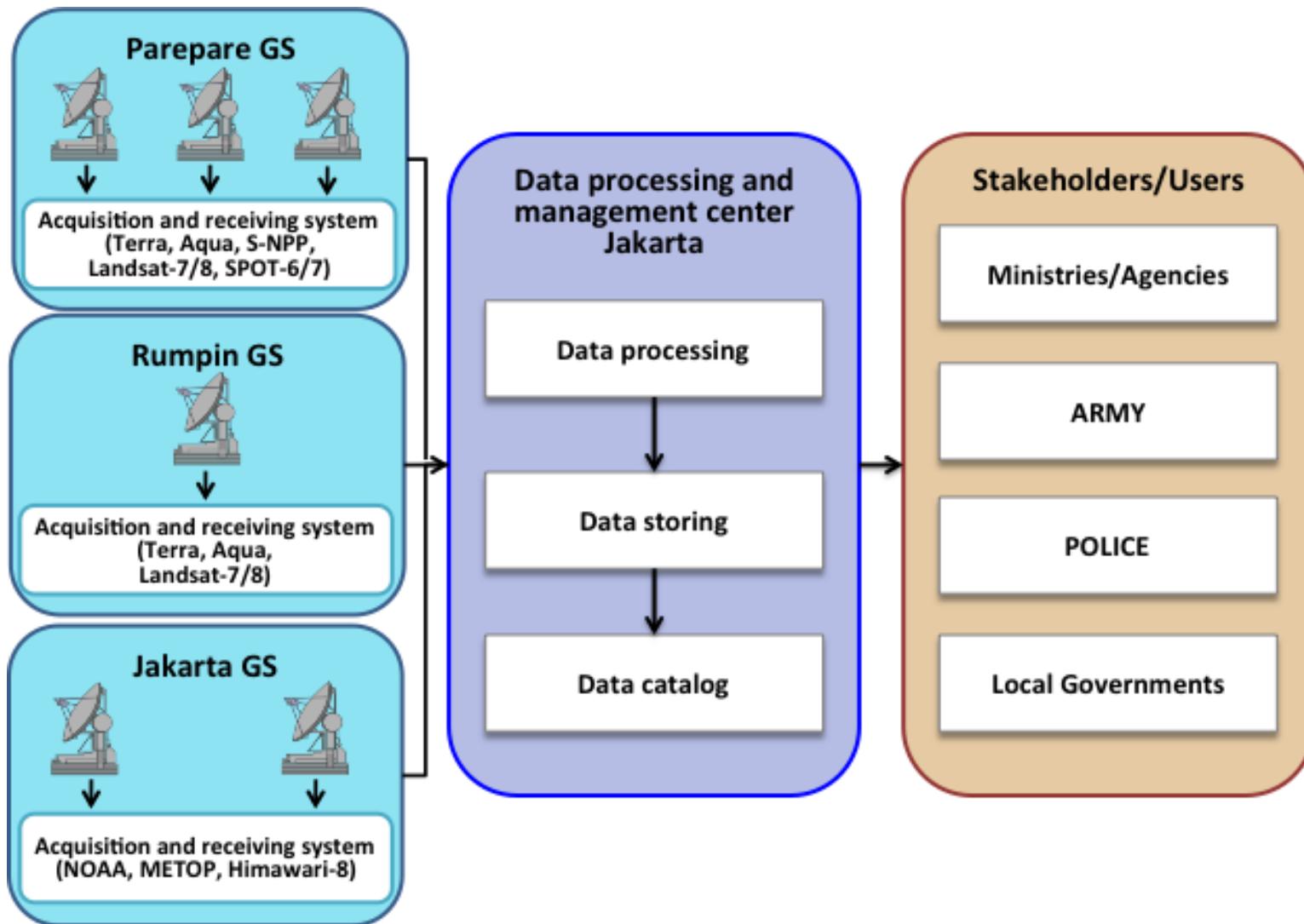
02

Remote Sensing Activities for Disaster Emergency Response

Remote Sensing Activities for Disaster Emergency Response

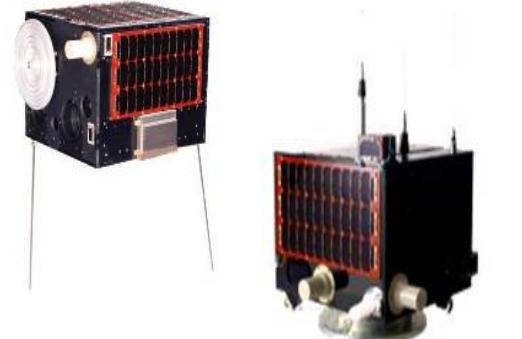


Remote Sensing Activities for Disaster Emergency Response



- Easy Use
- Easy Access
- Fast delivery
- Fast process
- Quick response
- High Quality
- Accurate

Available Systems at LAPAN for Disaster Emergency Response



Beranda | Profil | Litbangaya | SIMBA | SIPANDA | Publikasi | Agenda | Peta situs | Kontak | Ind - Eng

Selamat Datang di Website Pusat Pemanfaatan Penginderaan Jauh Friday , 15-12-2017

Sistem Informasi untuk Mitigasi Bencana (SIMBA)

Selamat Datang

Fokus Layanan

- Sistem Informasi untuk Mitigasi Bencana Alam
- Sistem Informasi Sumber Daya Alam dan Lingkungan

Sistem Informasi untuk Mitigasi Bencana (SIMBA)

adalah layanan informasi peringatan dini dan tanggap darurat bencana berbasis data penginderaan jauh. Informasi ini ditujukan sebagai bahan masukan bagi para pemangku kepentingan (diantaranya: Kementerian Lingkungan dan Kehutanan, Badan Nasional Penanggulangan Bencana, pemerintah daerah dll) baik di tingkat pusat maupun di tingkat daerah terkait kondisi sebelum, pada saat, dan sesudah terjadinya bencana.

Jenis informasi yang disajikan diantaranya :

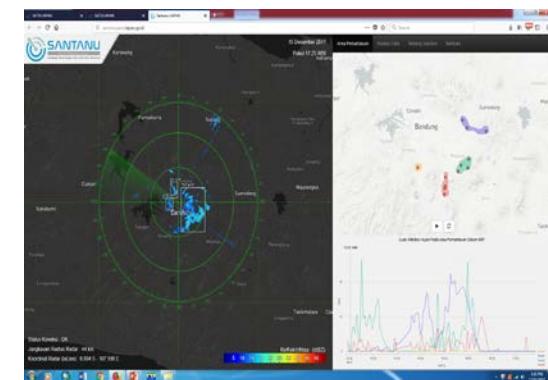
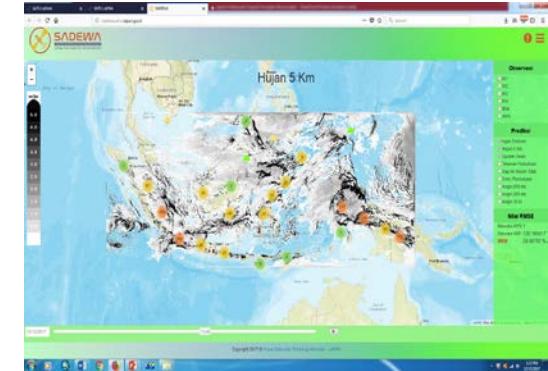
1. Sistem Peringkat Bahaya Kebakaran (SPBK) (Informasi: [jpeg](#), [WebGIS](#))
2. Pemantauan kondisi titik panas (hotspot) (Informasi: [WebGIS](#))
3. Informasi potensi banjir (Informasi: [jpeg](#), [WebGIS](#))
4. Informasi potensi banjir/kekeringan di wilayah pertanaman padi (Informasi: [jpeg](#))
5. Informasi letusan gunung berapi (Informasi: [jpeg](#))
6. Kabut asap kebakaran, dan informasi bekas lahan terbakar (Pedoman: [pdf](#); Informasi: [jpeg](#))

Periode waktu informasi yang diberikan diperbarui secara periodik harian, 8-harian, atau bulanan. Data utama yang digunakan adalah data satelit Terra/Aqua MODIS, NOAA AVHRR, MTSAT-1R, QMorph, dan TRMM. Data satelit resolusi menengah dan tinggi digunakan untuk memberikan informasi tanggap darurat bencana saat dan sesudah kejadian bencana.

Sistem Peringkat Bahaya Kebakaran

Publikasi Ilmiah Populer

Pedoman Klasifikasi Hutan



Realtime Space Debris Surveillance

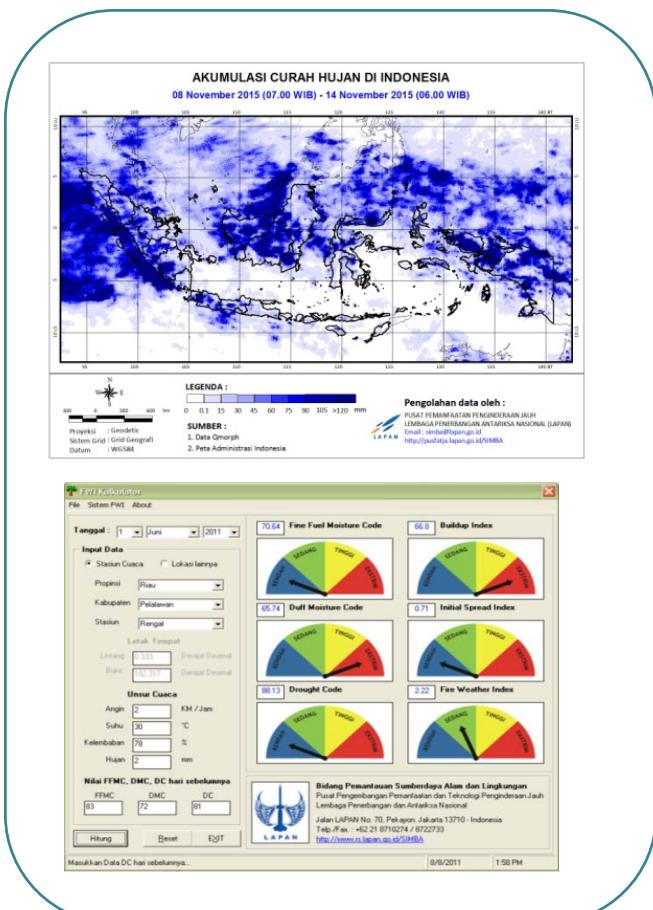
Bina Masyarakat dan Antarkoma | Pusat Satelit Antarkasa - LAPAN

Situs Pemantauan Realtime Benda Jatuh Antariksa Buatan

Remote Sensing Activities for Disaster Emergency Response

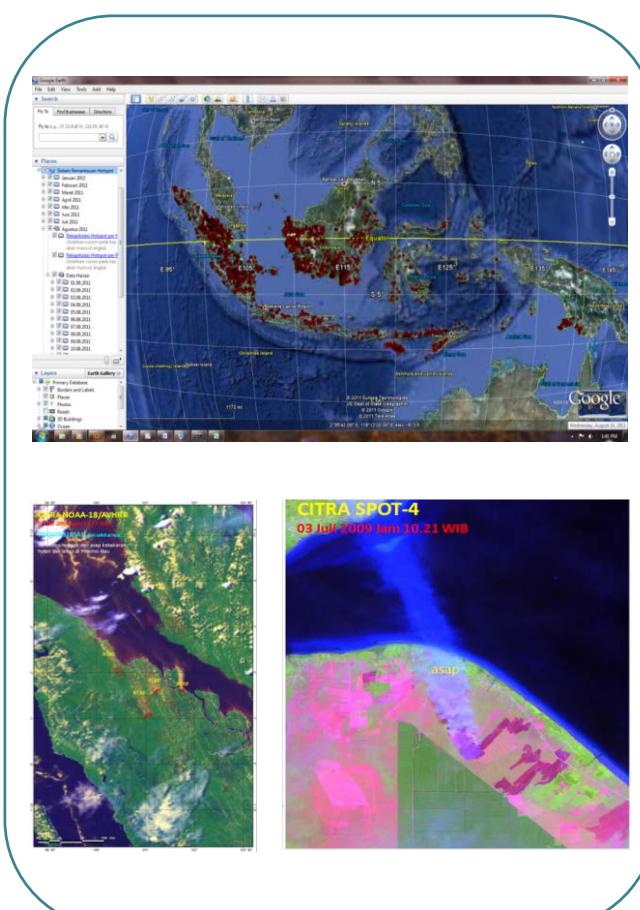
Before

Early Warning System



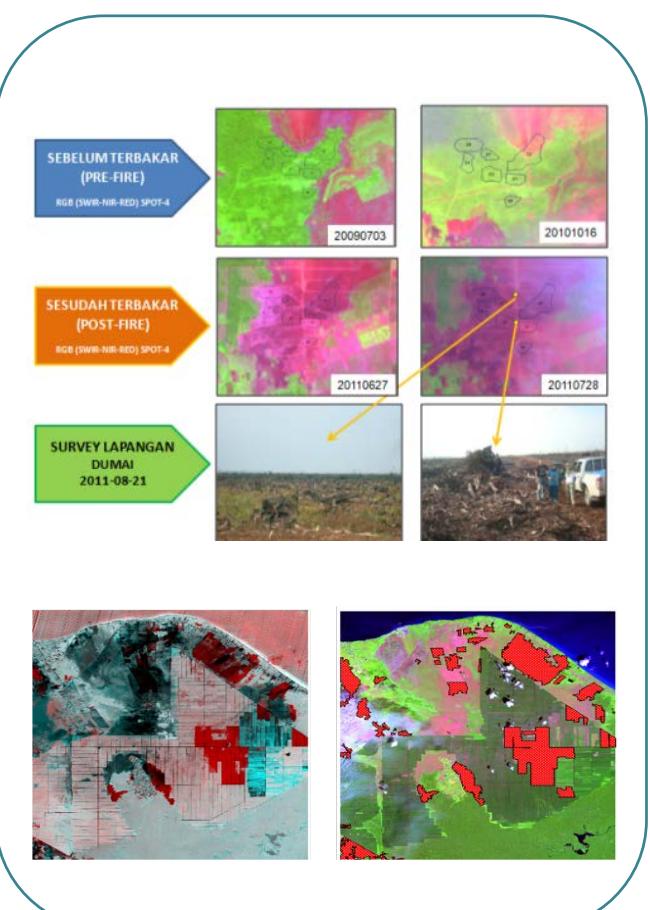
During

Disaster Monitoring



After

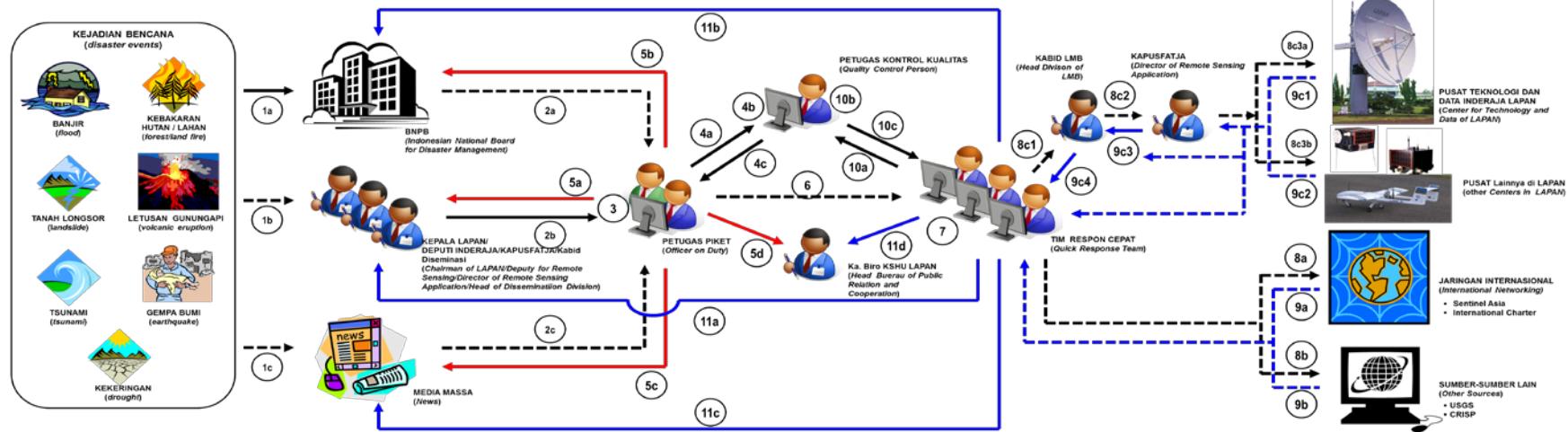
Damage area mapping



Remote Sensing Activities for Disaster Emergency Response

STANDAR OPERASIONAL PROSEDUR TANGGAP DARURAT BENCANA

STANDARD OPERATING PROCEDURES DISASTER EMERGENCY RESPONSE



1
INFORMASI KEJADIAN BENCANA SAMPAI KE:
a. BNPB
b. Pimpinan LAPAN
c. Media Massa (Televisi/Internet/Radio/Surat Kabar)

JENIS BENCANA ALAM MELIPUTI:
▪ Banjir
▪ Kebakaran Hutan/Lahan
▪ Tanah Longsor
▪ Letusan Gunungapi
▪ Tsunami
▪ Gempa Bumi
▪ Kekeringan

2
PETUGAS PIKET (OOD) MENERIMA INFORMASI KEJADIAN BENCANA DARI(MELALUI):
a. Koordinasi dengan BNBP
▪ Via SMS
▪ Via E-mail
▪ Via Radio Komunikasi Kebencanaan
b. Instruksi Pimpinan LAPAN (Kepala LAPAN/De-Inderaja/Kapusfata/Kabid LMB)
c. Media Massa (Televisi/Internet/Radio/Surat Kabar)

OOD mewajibkan Laporan Kejadian Bencana dalam Form LKB. Diterimanya informasi dari 1c harus memenuhi Persyaratan S-01

3
OOD MELAKUKAN PENGOLAHAN DATA SECARA CEPAT UNTUK MENGHASILKAN INFORMASI RILIS PERTAMA (R-1).
Teknis pengolahan data untuk tiap-tiap jenis bencana mengacu pada Petunjuk Teknis:
▪ Banjir (Juknis QR BJ-1)
▪ Kebakaran Hutan/Lahan (Juknis QR TL-1)
▪ Tanah Longsor (Juknis QR TA-1)
▪ Letusan Gunungapi (Juknis QR TS-1)
▪ Tsunami (Juknis QR TS-2)
▪ Gempa Bumi (Juknis QR GB-1)
▪ Kekeringan (Juknis QR KL-2)

4
KONTROL KUALITAS INFORMASI RILIS 1, OOD MENYampaIKAN HASIL PENGOLAHAN DRAFT INFORMASI RILIS-1 (DQR-01) KE PETUGAS KONTROL KUALITAS (QUALITY CONTROL PERSON).
a. OOD menyampaikan DQR-01 ke Petugas Kontrol Kualitas (Quality Control Person/QCP)
b. QCP melakukan kontrol kualitas

OOD menerima dan meng-edit DQR-01 sesuai dengan arahan QCP.

5
OOD MENGIRIMKAN INFORMASI RILIS 1 YANG SUDAH DISETUJUQ QCP (QR-01) KEPADA PIHAK-PIHAK:
a. Pimpinan LAPAN langsung (Kepala LAPAN/De-Inderaja/Kapusfata/Kabid LMB)
b. BNBP cq.Kapsudatin dan Human serta Kabid Data
c. Media Massa (melalui Web SIMBA).
d. Ka. Biro KSH LAPAN

OOD melakukan pencatatan hasil pengolahan, pengiriman serta backup data QR-01 pada Form LQR-01 yang mengacu pada Juknis BCOR-01. QRT membuat Laporan pengolahan informasi rilis 2 yang mengacu pada Form LQR-01.

7
TIM QRT MELAKUKAN PENGOLAHAN DATA UNTUK MENGHASILKAN INFORMASI RILIS 2.
Teknis pengolahan data untuk tiap-tiap jenis bencana mengacu pada Petunjuk Teknis:
▪ Banjir (Juknis QR BJ-2)
▪ Kebakaran Hutan/Lahan (Juknis QR TL-2)
▪ Tanah Longsor (Juknis QR TA-2)
▪ Letusan Gunungapi (Juknis QR GA-2)
▪ Tsunami (Juknis QR TS-2)
▪ Gempa Bumi (Juknis QR GB-2)
▪ Kekeringan (Juknis QR KL-2)

LANGKAH KE-7 INI DAPAT DIKUTI DENGAN LANGKAH KE-8 DAN KE-9 (DIKLUKKAN DALAM RANGKA UNTUK MEMPEROLEH CITRA/DATA PENDUKUNG)

8a-b
TIM QRT MELAKUKAN PENCARIAN CITRA/DATA PENDUKUNG KE EXTERNAL LAPAN:
a. Melalui mekanisme kerjasama dalam jaringan internasional yang sudah terjalin, seperti:
▪ Sentinel Asia
▪ International Charter
b. Melalui sumber-sumber yang tersedia di internet, seperti:
▪ USGS
▪ CRISP

Jenis data/citra yang diperlukan untuk dilakukan pencarian dicatat dalam Form LDIC2.

8c-d-e
TIM QRT MELAKUKAN PENCARIAN CITRA/DATA PENDUKUNG DARI INTERNAL LAPAN:
a. Ke Pustekdata, dengan urutan permintaan: Pustekdata → Kabid LMB → Kapusfata → Kapustekbang (Form DCI-TD)
b. Ke Kapustekbang, dengan urutan permintaan: Kapustekbang → Kabid LMB → Kapusfata → Kapustekbang (Form DCI-TB)

Jenis data/citra yang diperlukan untuk dilakukan pencarian dicatat dalam Form LDIC2.

9
TIM QRT MENDAPATKAN CITRA/DATA PENDUKUNG DARI INTERNAL/EXTERNAL LAPAN:
a. Ke Pustekdata, dengan urutan permintaan: Pustekdata → Kabid LMB → Kapusfata → Kapustekbang (Form DCI-TD)
b. Ke Kapustekbang, dengan urutan permintaan: Kapustekbang → Kabid LMB → Kapusfata → Kapustekbang (Form DCI-TB)

Data/Citra yang diperoleh dari External LAPAN dicatat dalam Form DCI-C
Data/Citra yang diperoleh dari Internal LAPAN dicatat dalam Form DCI-B

10
KONTROL KUALITAS INFORMASI RILIS 2, QRT MENYampaIKAN HASIL PENGOLAHAN DRAFT INFORMASI RILIS-2 (DQR-02) KE PETUGAS KONTROL KUALITAS (QUALITY CONTROL PERSON).
a. QRT menyampaikan DQR-02 ke Petugas Kontrol Kualitas (Quality Control Person/QCP)
b. QCP melakukan kontrol kualitas terhadap DQR-02

QRT menerima dan meng-edit DQR-02 sesuai dengan arahan QCP.



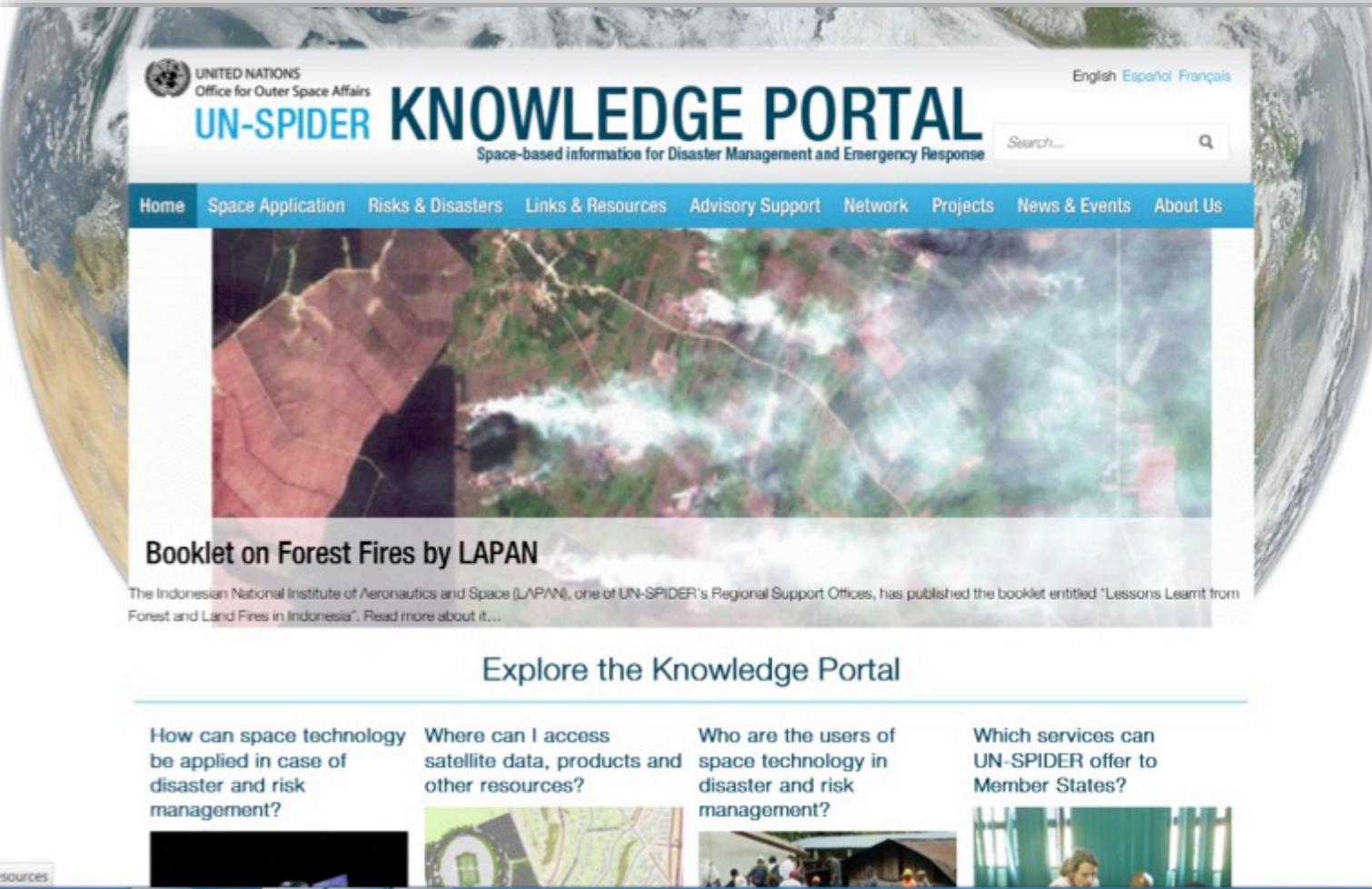
6
OOD MENERUSKAN TUGAS PENGOLAHAN UNTUK INFORMASI RILIS 2 KEPADA TIM RESPON CEPAT (ORT).

DILAKUKANNYA PENGOLAHAN DATA UNTUK MENGHASILKAN INFORMASI RILIS 2 (QR-02) HARUS MEMENUHI PERSYARATAN S-02.

11
QRT MENGIRIMKAN INFORMASI RILIS 2 YANG SUDAH DISETUJUQ QCP (QR-02) KEPADA PIHAK-PIHAK:
a. Pimpinan LAPAN langsung (Kepala LAPAN/De-Inderaja/Kapusfata/Kabid LMB)
b. BNBP cq.Kapsudatin dan Human serta Kabid Data
c. Media Massa (melalui Web SIMBA).
d. Ka. Biro KSH LAPAN

QRT melakukan pencatatan hasil pengolahan, pengiriman serta backup data QR-02 pada Form LQR-02 yang mengacu pada Juknis BCOR-02. QRT membuat laporan pengolahan informasi rilis 2 yang mengacu pada Form LQR-02.

International collaboration



UNITED NATIONS
Office for Outer Space Affairs

UN-SPIDER KNOWLEDGE PORTAL

Space-based information for Disaster Management and Emergency Response

Home Space Application Risks & Disasters Links & Resources Advisory Support Network Projects News & Events About Us

Search...

Booklet on Forest Fires by LAPAN

The Indonesian National Institute of Aeronautics and Space (LAPAN), one of UN-SPIDER's Regional Support Offices, has published the booklet entitled "Lessons Learnt from Forest and Land Fires in Indonesia". Read more about it...

Explore the Knowledge Portal

How can space technology be applied in case of disaster and risk management?

Where can I access satellite data, products and other resources?

Who are the users of space technology in disaster and risk management?

Which services can UN-SPIDER offer to Member States?

sources

- Access to and develop the capacity to use all types of space-based information to support the full disaster management cycle
- Connect to the disaster management and space communities
- Capacity building and institutional strengthening

Agreement Regional Support Office



Lessons Learnt from Forest and Land Fires in Indonesia

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

Lessons Learnt from Forest and Land Fires in Indonesia

Suwarsono - LAPAN
Parwati Sofan - LAPAN
Dr. M. Rokhis Khomarudin - LAPAN
Dr. Shirish Ravan - UNOOSA/UN-SPIDER

Contributors (from LAPAN):
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M. Priyatna
Kusumaning Ayu DS
Taufik Hidayat
Iskandar Effendi

Editing and booklet design by Hongmeng Liu and Nicole Ho Yan Lau

- Quick response team that responsible for providing disaster information
- Development of procedural guideline on emergency response in countries
- Development of booklet on lessons learned about the forest fires in Indonesia for the UN-SPIDER Knowledge Portal

International Charter

- Active in Sentinel Asia and International Charter “Space Major Disaster” in the South East Asia region
- Acted as a data analysis node of Sentinel Asia
- Contributed to the International Charter as project manager as well as value-added providers



02

List on International Charter Activation

Date of activation	Type of Event	Loc. of Event	Charter Requestor	Project Management	
01/08/2001	Date of activation	Type of Event	Loc. of Event	Charter Requestor	Project Management
06/02/2004	06/03/20017	Date of activation	Type of Event	Loc. of Event	Charter Requestor
26/12/2004	16/09/2009	07/01/2014	Volcano	Sinabung, Sumatra	USGS on Behalf of PVMBG
27/12/2004	30/09/2009	13/02/2014	Volcano	Mount Kelud	ADRC on Behalf of LAPAN
25/04/2006	28/10/2010	15/12/2014	Landslide	Banjarnegara, Java	ADRC on Behalf of LAPAN
27/05/2006	03/11/2010	07/12/2016	Earthquake	Aceh	ADRC on Behalf of LAPAN
27/12/2006	30/01/2013	06/08/2018	Earthquake	Lombok Island	ADRC on Behalf of LAPAN
	05/11/2013	29/09/2018	Earthquake, Tsunami	Central Sulawesi	ADRC on Behalf of LAPAN
		23/12/2018	Oceanwave	Sunda strait	UNOOSA on Behalf of LAPAN
		19/03/2019	Floods	Papua	ADRC on Behalf of LAPAN
					AIT

International Charter activation

International Charter Activation

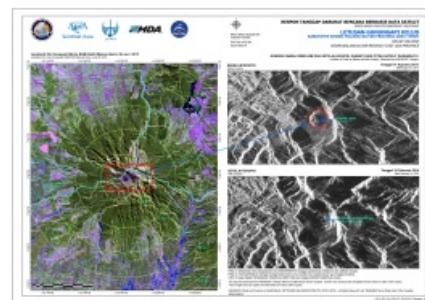


The screenshot shows the homepage of the International Charter: SPACE & MAJOR DISASTERS. The top navigation bar includes links for Login, Register, Google Custom Search, and Contact help. Below the navigation is a banner for the United Nations Office for Outer Space Affairs. The main content area features a large image of a satellite map of Mount Kelud, Kediri-Malang-Blitar regency, East Java Province. The map is color-coded with green for vegetation and purple for water bodies. A legend on the right side of the map provides information about the data source (SPOT-6), acquisition date (06/12/2013), and copyright (Astrium Services 2013). Below the map, there is a link to a higher resolution version.

Condition of Mount Kelud crater before and after eruption

Source: RADARSAT-2 / Landsat-8
Acquired: RADARSAT-2 Pre-crisis: 31/08/2013
RADARSAT-2 Post-crisis: 15/02/2014
Landsat-8: 26/06/2013

Copyright: RADARSAT-2 Data and Products © MacDonald, Dettwiler and Associates Ltd. (2014) - All Rights Reserved.
RADARSAT is an official trademark of the Canadian Space Agency.
Landsat-8 data and products © USGS (2013) - All rights reserved
Map produced by LAPAN



UNITED NATIONS
Office for Outer Space Affairs

MT. KELUD ERUPTION

Type of Event: Volcano

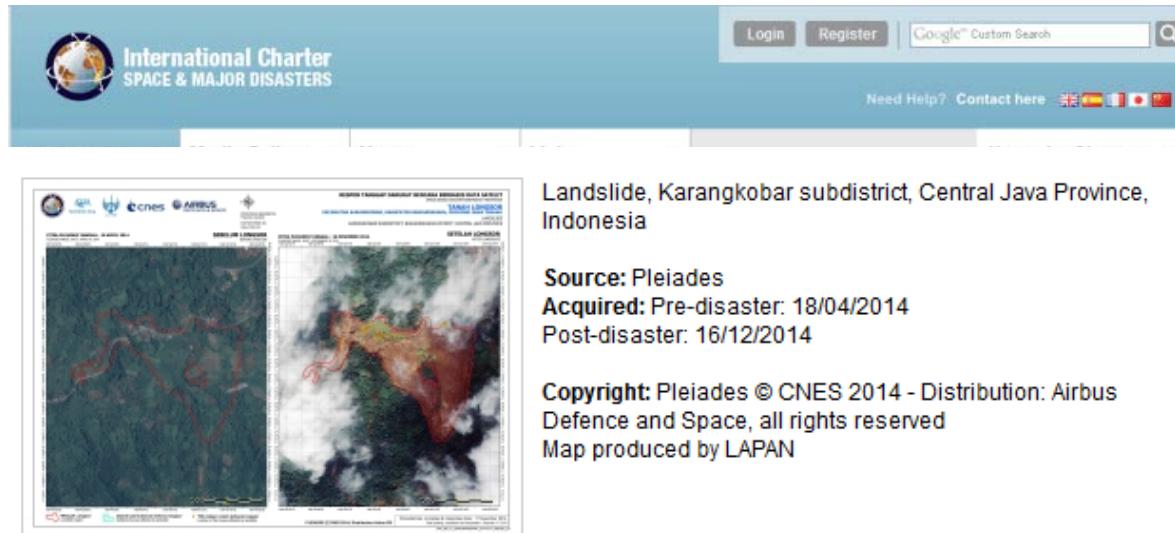
Location of Event:
Mount Kelud - Java, Indonesia

Date of Charter Activation:
13 February 2014

Charter Requestor:
Asia Disaster Reduction Center (ADRC) on behalf of
Indonesia Institute of Aeronautics and Space
(LAPAN)

Project Management: LAPAN

International Charter activation



Landslide, Karangkobar subdistrict, Central Java Province, Indonesia

Source: Pleiades
Acquired: Pre-disaster: 18/04/2014
Post-disaster: 16/12/2014

Copyright: Pleiades © CNES 2014 - Distribution: Airbus Defence and Space, all rights reserved
Map produced by LAPAN

[Higher resolution version](#)

Landslide, Karangkobar subdistrict, Central Java Province, Indonesia

Source: Pleiades
Acquired: 16/12/2014

Copyright: Pleiades © CNES 2014 - Distribution: Airbus Defence and Space, all rights reserved
Map produced by LAPAN



BANJARNEGARA LANDSLIDE

Type of Event: Landslide

Location of Event: Indonesia

Date of Charter Activation: 15 December 2014

Time of Charter Activation: 01:44:00

Time zone of Charter Activation: UTC+01:00

Charter Requestor:

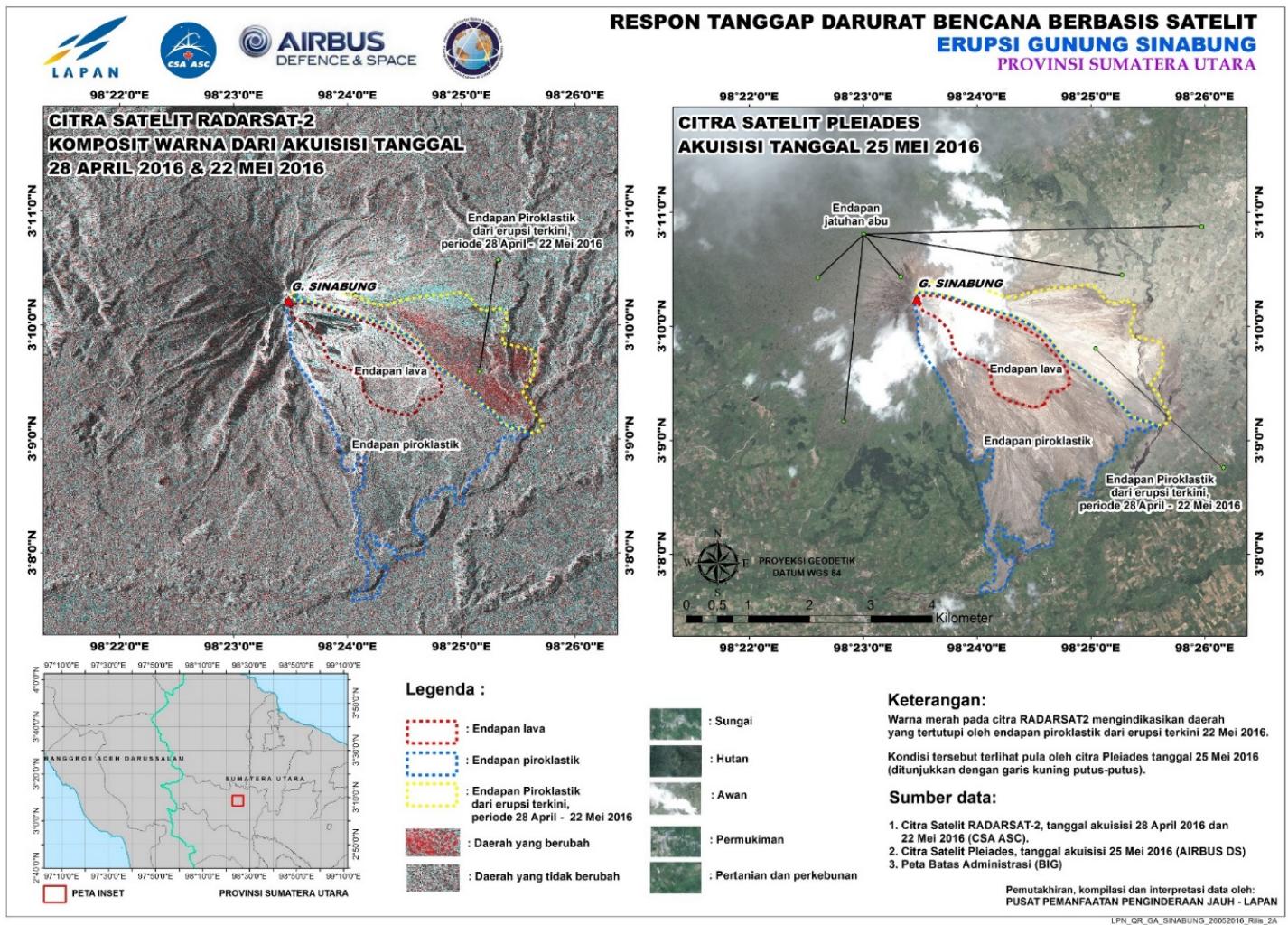
Asia Disaster Reduction Center (ADRC) on behalf of Indonesian National Institute of Aeronautics and Space (LAPAN)

Project Management: LAPAN

03

Dissemination Information

Emergency Response Mapping Mt.SinabungEruption (21 May 2016, Karo, North Sumatra)



Emergency Response Mapping Fast Flood at Garut District (20 Sep 2016, Garut, West Java)



CENTRE NATIONAL D'ÉTUDES SPATIALES



Gambar - 1



Gambar - 2

ANALISIS DAMPAK BANJIR BANDANG DI KABUPATEN GARUT TANGGAL 20 SEPTEMBER 2016 BERBASIS DATA SATELIT PENGINDERAAN JAUH



0 0,04 0,08 0,16 Km

LEGENDA

Jalan	Pemukiman
Sungai	Lahan Pertanian
Locasi Permukiman / Rumah Rusak Berat	Industri



Keterangan dan informasi data:

Gambar-1 menunjukkan Citra Satelit PLEIADES Tgl. 09 Juni 2014 (Sebelum Bencana).

Gambar-2 menunjukkan Citra Satelit PLEIADES Tgl. 07 Oktober 2016 (Sesudah Bencana).

Analisis dampak lokasi citra satelit dapat berdasarkan perbedaan antara citra satelit PLEIADES pada kondisi akhir data sebelum dan sepanjang bencana. Daerah terdampak yang hanya dapat diidentifikasi pada objek yang mengalami kondisi rusak berat total.

Sumber Data:

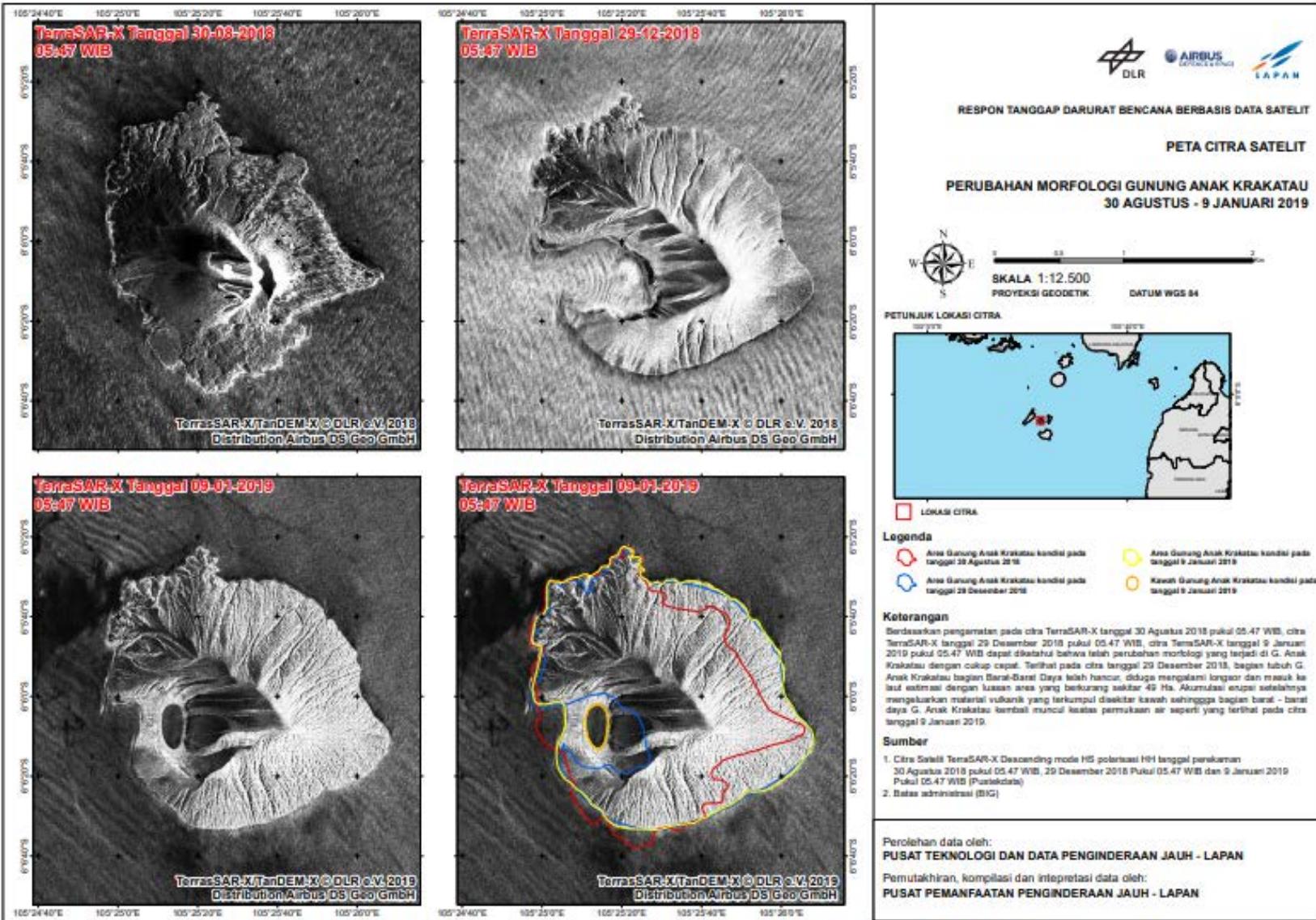
1. Citra Satelit PLEIADES Tgl 09 Juni 2014 (LAPAN, Copyright ©CNES 2014 AIRBUS DS, All Right Reserved)

2. Citra Satelit PLEIADES Tgl 07 Oktober 2016 (CNES, Hasil Aktivasi Charter)

3. Peta Rupa Bumi Indonesia (BIG)

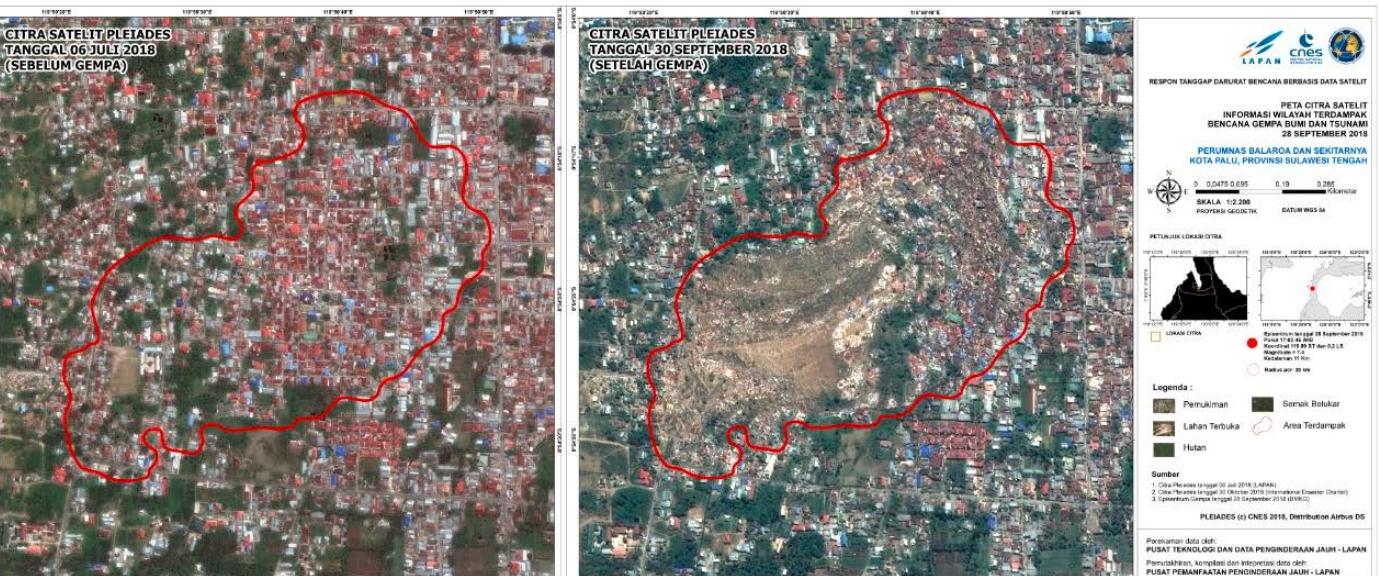
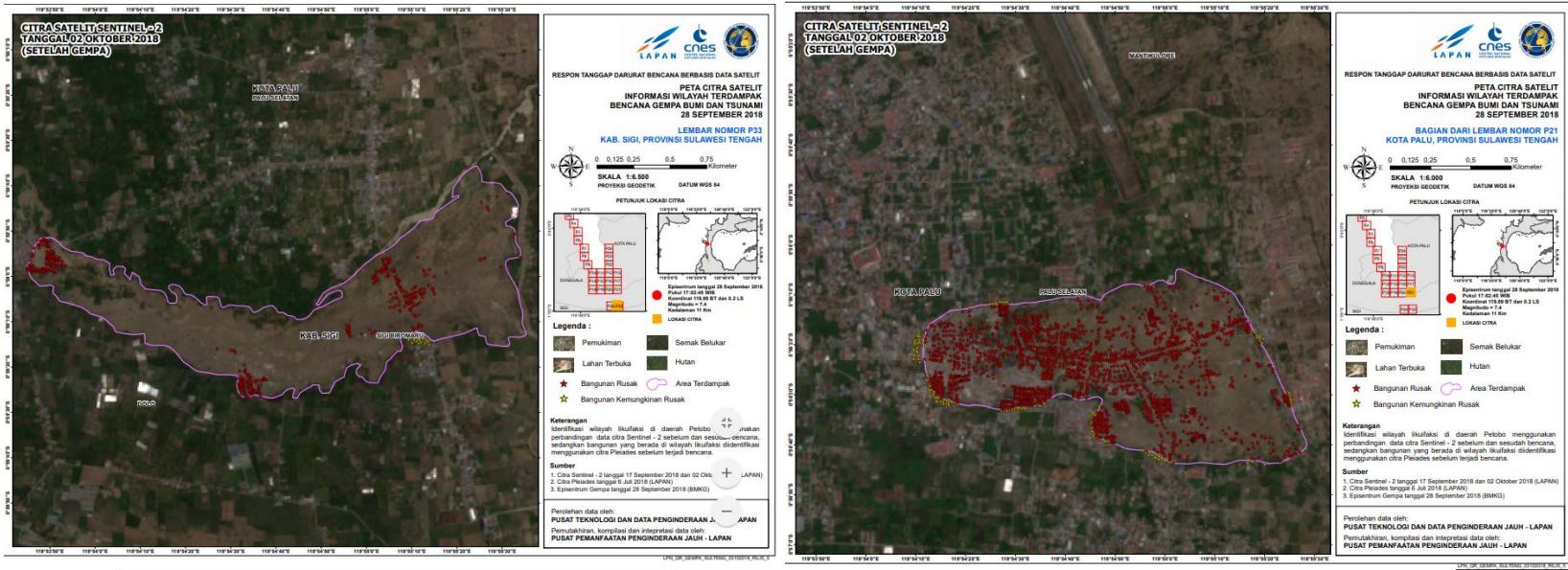
Emergency Response - Volcano Eruption

Mt. Krakatau (from TerraSar X)

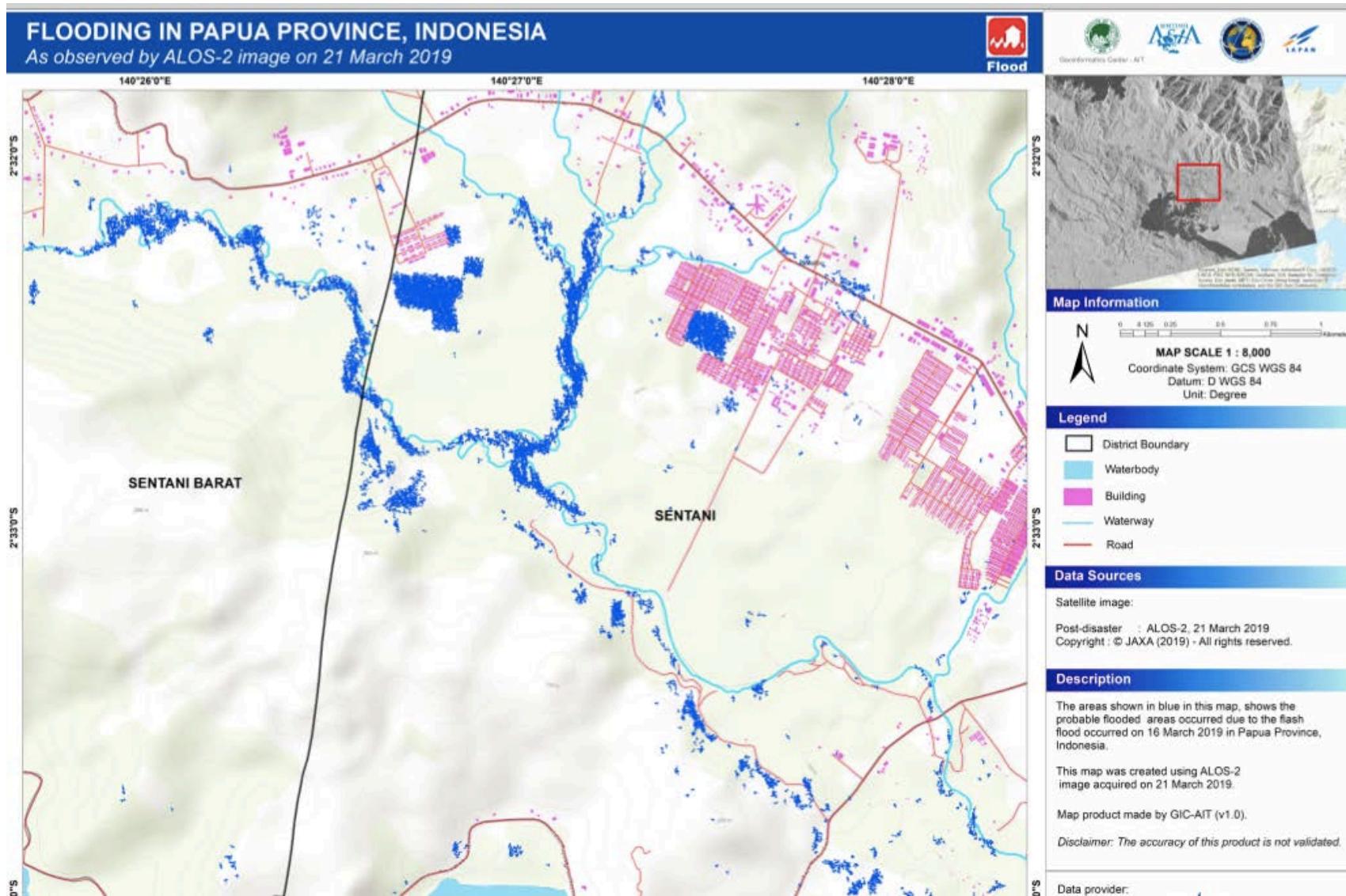


Emergency Response

Soil Liquefaction in Palu, North Sulawesi

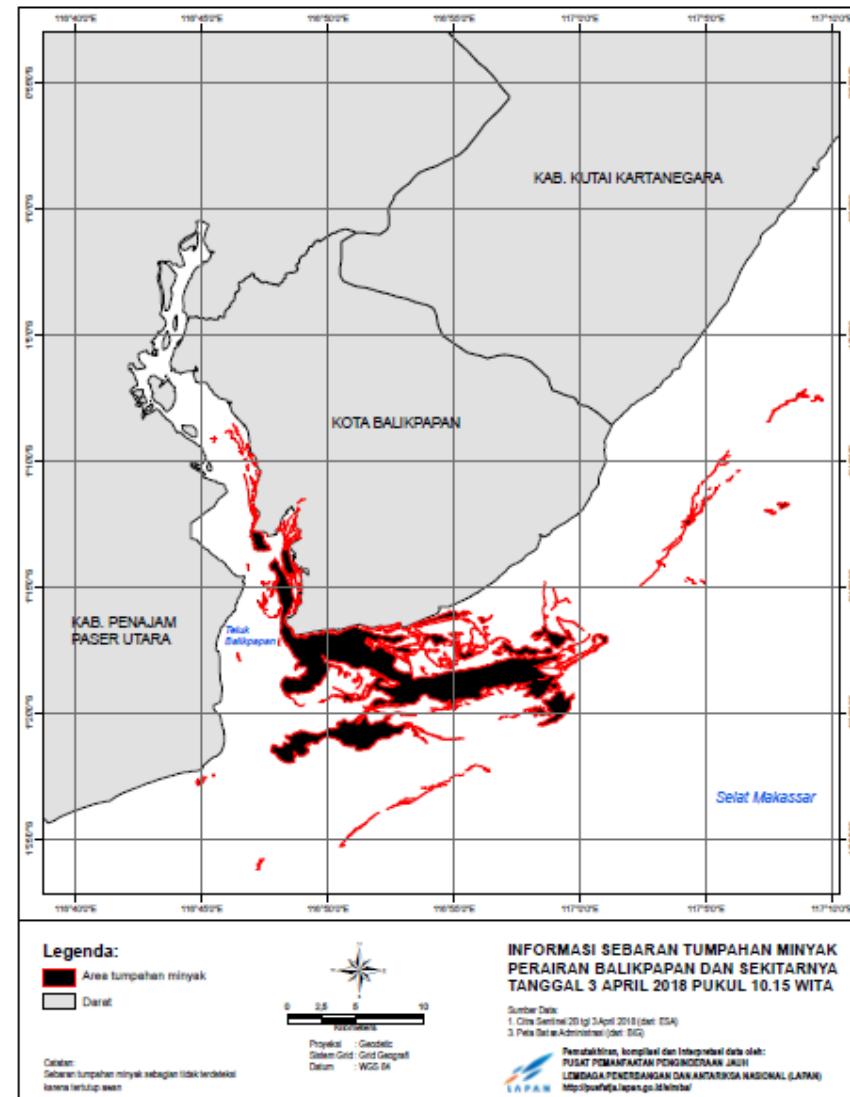
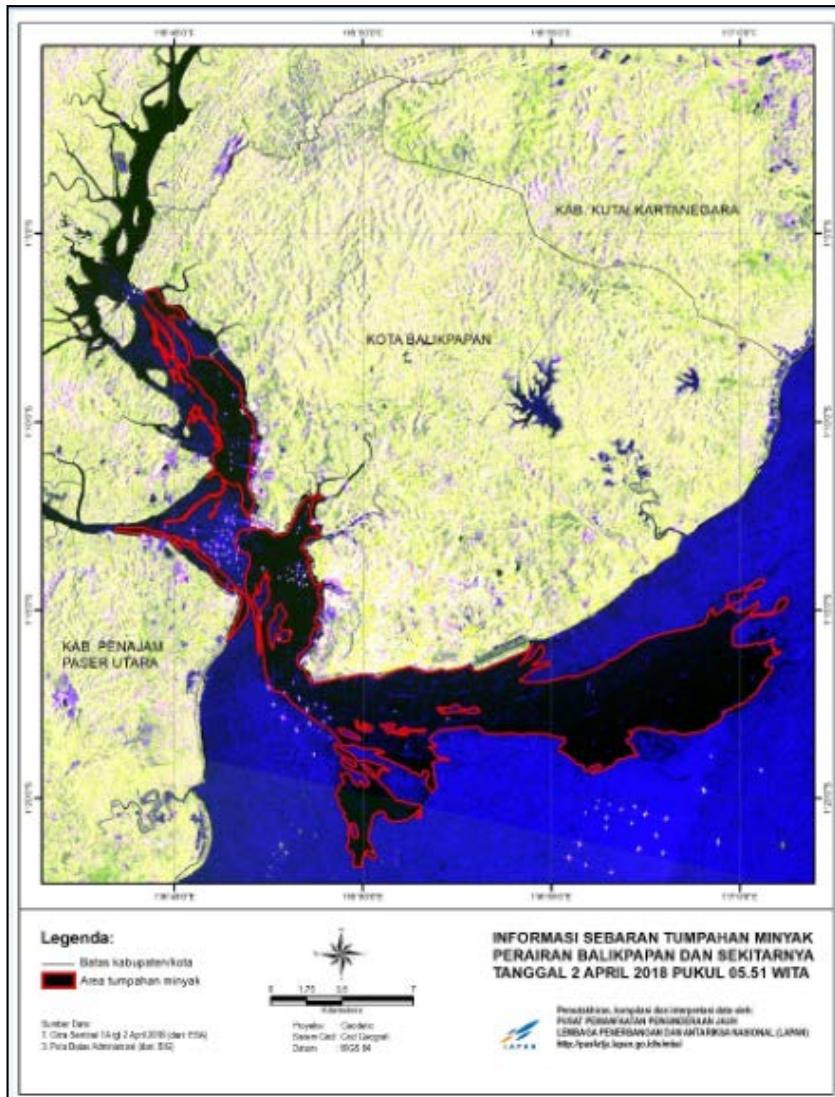


Emergency Response Flood in Papua, Indonesia



Emergency Response – Oil Spill

Coastal zone of Balikpapan, Kalimantan (From Sentinel-1A)



04

Coordination and Distribution Information

Coordination with Disaster Management Agency



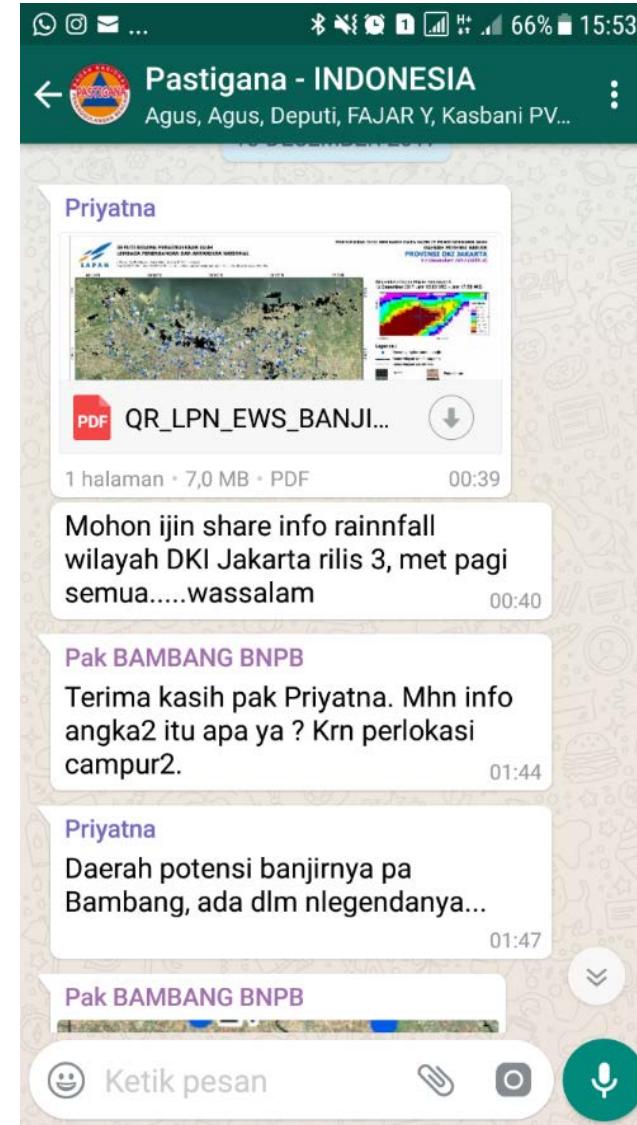
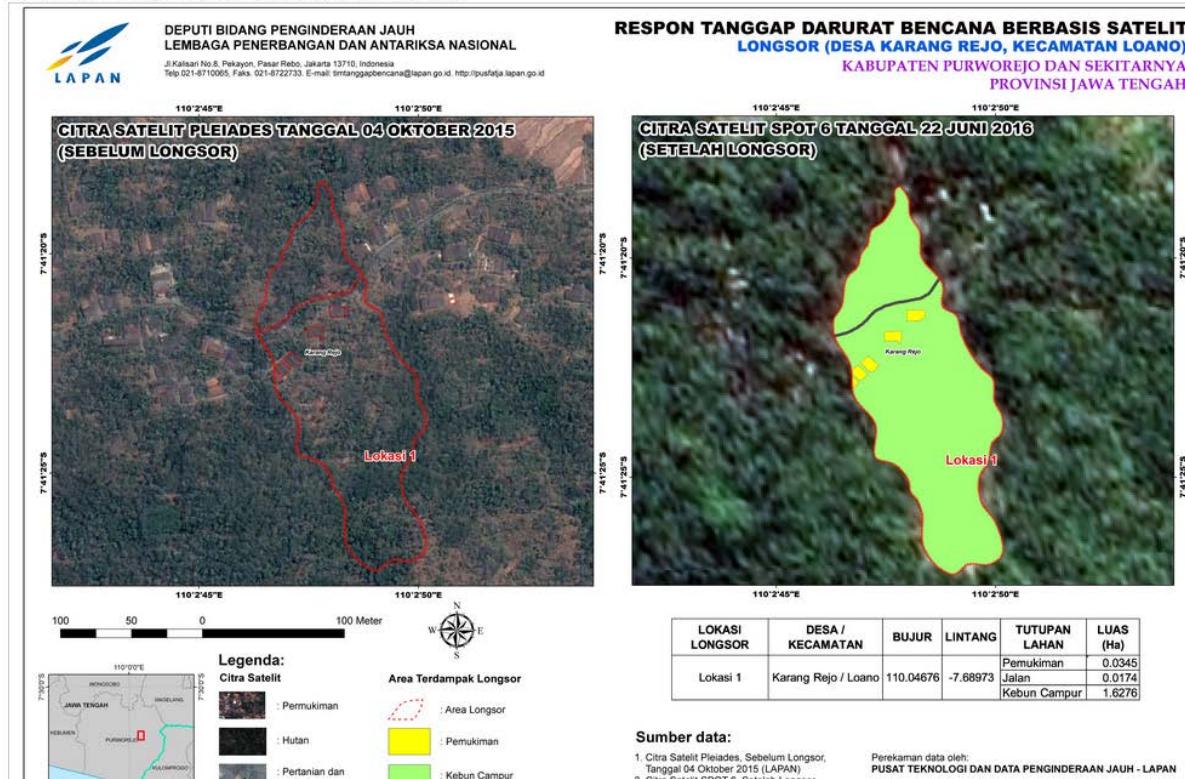
GEOSPASIAL

BADAN NASIONAL PENANGGULANGAN BENCANA

PETA TERKINI

- Peta Distribusi Pengungsi Per Kabupaten (10 Oktober 2017 Pukul 18.00 WITA)
- Peta Distribusi Pengungsi Per Kecamatan (10 Oktober 2017 Pukul 18.00 WITA)
- Peta Usulan Pemasangan Sumur Bor Gunung Agung Prov. Bali
- Peta Rambu Peringatan Sekitar Gunung Agung
- Peta Sebaran Puskesmas Sekitar Gunung Agung

Peta Citra Satelit Longsor Ds. Karang Rejo, Kec. Loano – Purworejo





04

Application earth monitoring based android

Playstore : <https://play.google.com/store/apps/details?id=lapan.go.id.sipandora>
Link video: https://www.youtube.com/watch?v=jC6fNeDG_SI

SIPANDORA

Content:

- 32 Information Type
- User feedback

The screenshot shows the Google Play Store listing for the SIPANDORA app. At the top, there's a status bar with signal strength, battery level (45%), and network speed (0.56 KB/S). Below it is the app's header with the title 'SIPANDORA' and subtitle 'LAPAN Remote Sensing Affairs'. The header includes a globe icon. Below the header, the app's rating is shown as 4.5 stars from 56 reviews, with a download count of 13 MB and a rating of 3+. A large green 'Instal' button is prominent. Below the button are four screenshots of the app's interface, which includes a map, a sidebar with navigation options like 'Beranda', 'Bantuan', 'About', and 'Logout', and various data tables and charts. At the bottom, there are three buttons: 'Tentang aplikasi ini' with an arrow pointing right, 'Peta & Navigasi' (highlighted in a rounded rectangle), and 'Beri rating aplikasi ini'.



Online Data Access

- <http://www.pusfatja.lapan.go.id/> (main website)
- <http://spbn.pusfatja.lapan.go.id/> (national earth monitoring system)
- <http://pusfatja.lapan.go.id/index.php/databaselitbang> (research database)
- <http://pusfatja.lapan.go.id/index.php/publikasi> (research publication)
- <http://pusfatja.lapan.go.id/sipanda/> (natural resources information)
- <http://pusfatja.lapan.go.id/simba/> (disaster mitigation information)
- <http://pusfatja.lapan.go.id/index.php/tanggapbencana> (Disaster emergency response)
- <http://jurnal.lapan.go.id/index.php/ijreses> (online scientific journal)
- http://jurnal.lapan.go.id/index.php/jurnal_inderaja (online scientific journal)
- <https://www.youtube.com/channel/UC8gBtJmQkuB1GITTOXoHMLw> (Youtube Channel)
- <https://www.facebook.com/pusfatja> (Facebook)
- <https://www.instagram.com/pusfatjalapan/> (Instagram)
- https://twitter.com/Pusfatja_LAPAN (Twitter)

Information dissemination to the public

Newspaper (online & printed)



Home > Teknologi > Berita Salns

Lapan Siapkan Data Citra Satelit Dampak Gempa Lombok

Agnes Savitri, CNN Indonesia | Senin, 10 September 2018

Ragikan :



Beranda > Ekonomi & Bisnis > Teknologi > LAPAN Identifikasi Kerusakan Akibat Gempa dan Tsunami di Kota Palu

Economie & Bisnis | Teknologi | Nasional | Mitigasi | Headline



Ilustrasi. (Foto: REUTERS/Dewi Harta)

Jakarta, CNN Indonesia -- Lembaga

data citra satelit untuk informasi ide gempa Lombok.

Data yang digunakan yaitu data sate terraSAR, dan sentinel. Data berupa pengambilan keputusan di lapangan dalam memanfaatkan data tersebut dan institusi terkait lainnya.

JAKARTA – Tim LAPAN melakukan identifikasi kerusakan akibat gempa dan tsunami di Palu. Identifikasi kerusakan tersebut menggunakan data citra satelit resolusi sangat tinggi.

*Data yang digunakan adalah data Satelit Pleiades tanggal 6 Juli 2018 (sebelum gempa) yang diterima oleh Stasiun Bumi LAPAN dan tanggal 30 September 2018 (setelah gempa) yang diperoleh Internasional Disaster Charter," jelas Ir Jasyanto, Kepala Bagian Humas Lembaga Antariksa dan Penerbangan Nasional (LAPAN) dalam siaran persnya, Selasa (2/10).

Press conference with BNPB



News on TV media



Disaster synergy activities

Ministry, Local government, army etc



Foto kegiatan sinergi PUI P2I, LIPI; PPET, LIPI;
PUSTEKDATA; PUSFATJA; PUSTEKBANG; PUSTEKSAT;
PSTA
(Bandung, 23 Februari 2018)



Foto kegiatan Kebencanaan di BNPB (BNPB, 04
Oktober 2018)



Pertemuan Sinergi PUI Klaster Mitigasi Bencana
(BMKG, 22 Okt 2018)

Capacity building -technical assistance to local government

Training, supervision, and technical guidance



Next Activities –Space Technology Contribution on SDGs

SDG 17 : Partnerships for the Goal

- Continue on Disaster Emergency Response Mapping
- Continue as RSO UNSPIDER
- ASEAN Mechanism on Disaster Emergency Response (UN SPIDER – ASEAN SCOSA – UNESCAP)
- JAIF Project on Drought and Flood Monitoring in Paddy Field Area (JAXA-ASEAN SCOSA)
- JAIF Project on Rapid Mapping (TOHUKU University)
- Mapping of land degradation, deforestation, and Landuse/cover change (WRI)



Pusat Pemanfaatan Penginderaan Jauh
Remote Sensing Applications Center



Beranda Profil Litbangaya Publikasi Agenda PPID Zona Integritas Tautan Peta situs Kontak Ind - Eng

09 Januari 2019 | Analisa Daerah Terdampak Longsor desa Sirnaresmi Kec. Cisolok Kab. Sukabumi Prov. Jawa Barat | Tuesday , 10-09-2019



Sistem Informasi untuk Mitigasi Bencana (SIMBA)

Thank You

www.pusfatja.lapan.go.id