



## **Remote Sensing Application For Landslide**

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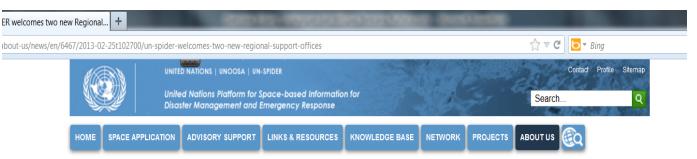
Remote Sensing Application Center is one of the government agencies under the National Institute Of Aeronautics and space (LAPAN). That provides information based on Remote Sensing data. One of information about disaster events that could be obtained using remote sensing imagery. **UN-SPIDER and International Charter Disaster Rem**ote Sensing Application Center already become part of UN-SPIDER. Remote Sensing application center already Become Regional Support Office in 12 February 2013 and become fifteenth Regional Support Office in UN-SPIDER. And Remote Sensing Application Center already join International Charter Disaster under Sentinel Asia







# Remote Sensing Application Center and UN-SPIDER



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### UN-SPIDER welcomes two new Regional Support Offices



Signing ceremony between UNOOSA and ICIMOD on 12 February 2013.

On the sidelines of the fiftieth session of the Scientific and Technical Subcommittee of the Committee of the Peaceful Uses of Outer Space, which took place in Vienna, Austria from 11 - 22 February 2013, UN-SPIDER signed agreements with two new partners to establish Regional Support Offices (RSO).

On 12 February 2013, during the 4th annual UN-SPIDER Regional Support Offices meeting, the official signing ceremony for the International Centre for Integrated Mountain Development (ICIMOD) was held making ICIMOD the fourteenth RSO. ICIMOD is a regional intergovernmental learning and knowledge sharing centre serving the eight regional member countries of the Hindu Kush Himalayas – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and

Pakistan – and based in Kathmandu, Nepal. The arrangement was formalized through a memorandum of understanding signed between ICIMOD and the UN Office for Outer Space Affairs (UNOOSA). Joining the network of RSOs, ICIMOD will work closely with UN-SPIDER to use space-based information and services for disaster management and emergency response in the Hindu Kush Himalayan region.

On 19 February, 2013, LAPAN, the Indonesian National Institute of Aeronautics and Space became UN-SPIDER's fifteenth Regional Support Office by signing a memorandum of understanding with UNOOSA. LAPAN is the Indonesian government space agency responsible for long-term civilian and military aerospace research. In September 2013, UNOOSA and LAPAN will jointly organize a Conference on Integrated Space Technology Applications to Climate Change, taking place in Jakarta, Indonesia.

### Recommended Practices: Using Space Technologies for Disaster and Risk Management UN-SPIDER interview: Kamel Tichouiti about the locust infestations in Algeria and Libya

UN-SPIDER's 4th Annual Meeting of Regional Support Offices

CONTACT US!

Credits: ICIMOD



Indonesia Located in near Equator line so it made Indonesia Has only Two Season Rainy Season and Summer Season. So the duration of season in Indonesia is quite a lot. various types of disasters that occur generally in Indonesia







#### NEWS > NATIONAL

Sukabumi landslide kills four, 41 missing Arya Dipa

The Jakarta Post

Bandung / Tue, January 1, 2019 / 10:37 am



### Search for missing goes on after Sukabumi landslide

Arya Dipa

The Jakarta Post

Bandung / Wed, January 2, 2019 / 09:40 am



15 DECEMBER 2014 The Banjarnegara landslide in Central Java, Indonesia: 32 dead, 76 missing

Posted by Dave Petley

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#### The Banjamegara landslide

Late on Friday night a large and apparently very rapid landslide was triggered by heavy rainfail at Banjarnegara in Central Java, Indonesia. Latest reports suggest that 32 bodies have been recovered to date, with a further 76 people thought to be missing. The like/hood of their having survived the landslide is low; one can only hope that, as is often the case, it turns out that at least some of those reported missing were elsewhere at the time of the landslide. A further 15 people were injured, 11 of those seriously.

This image, from the Straits Times, shows the landslide site from close to the toe:



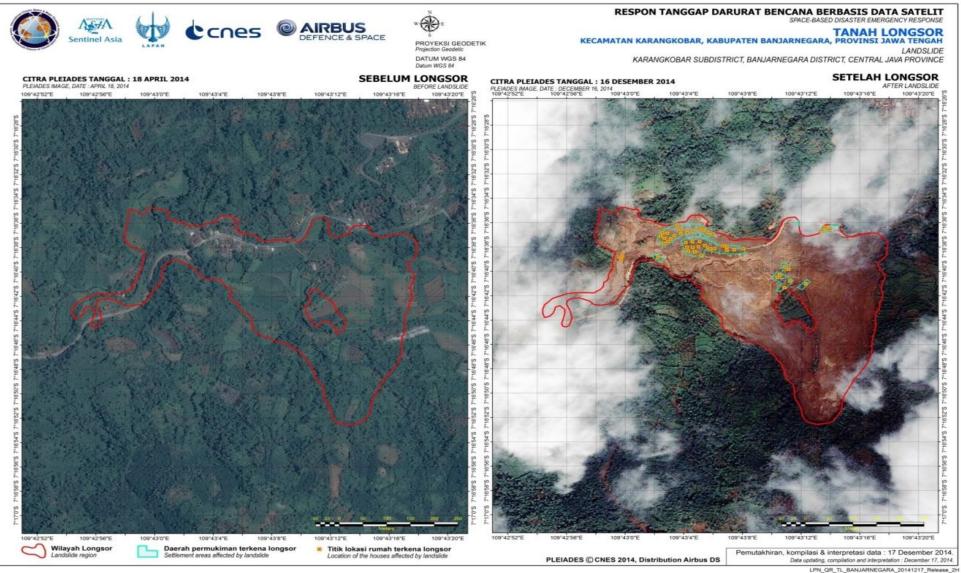
### Navy Dispatches Marines to Aid Banjarnegara Lanslide Victims

15 December 2014 10:48 WIB

COMMENT





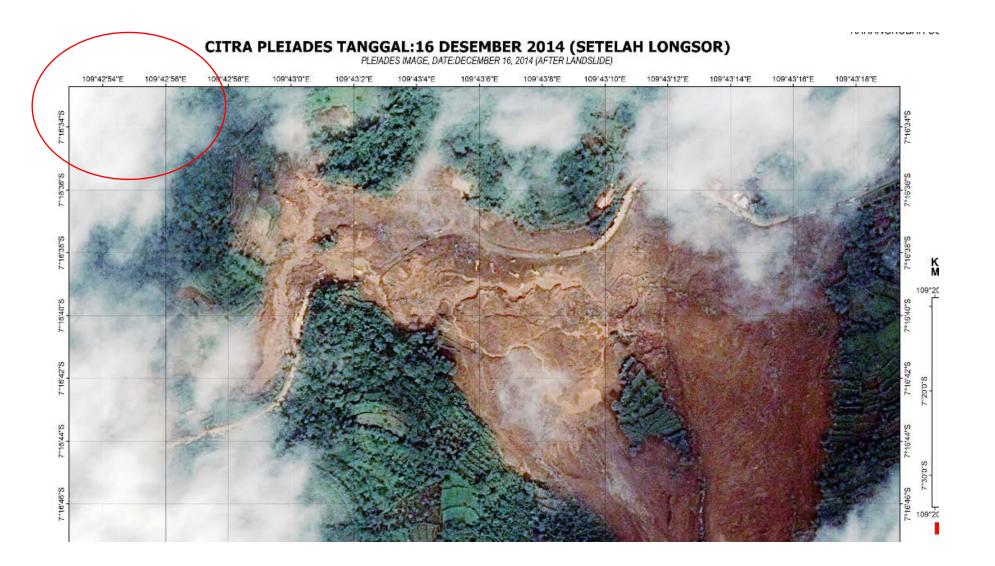




### **INFORMATION MUST BE SHARE QUICKLY!!**

Geography Coordinate Location
Total Area Affected By Landslide
Building Damaged By Landslide



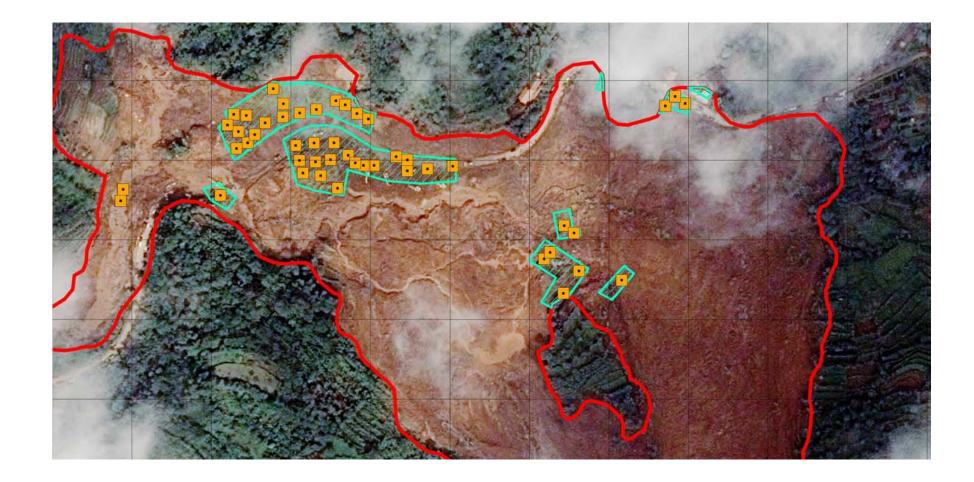






- Landslide materials are split into two due to containment of solid stones underneath that move following the slope.
- The landslide's length reached 1,2 km.
- Landslide material struck residential area at the bottom in less then 5 munites.







Sectors that can be analyzed more deeply

1.Land Use Change2.Rainfall pattern3.Geological4.Loss Of Economies



## Land Use in 2000

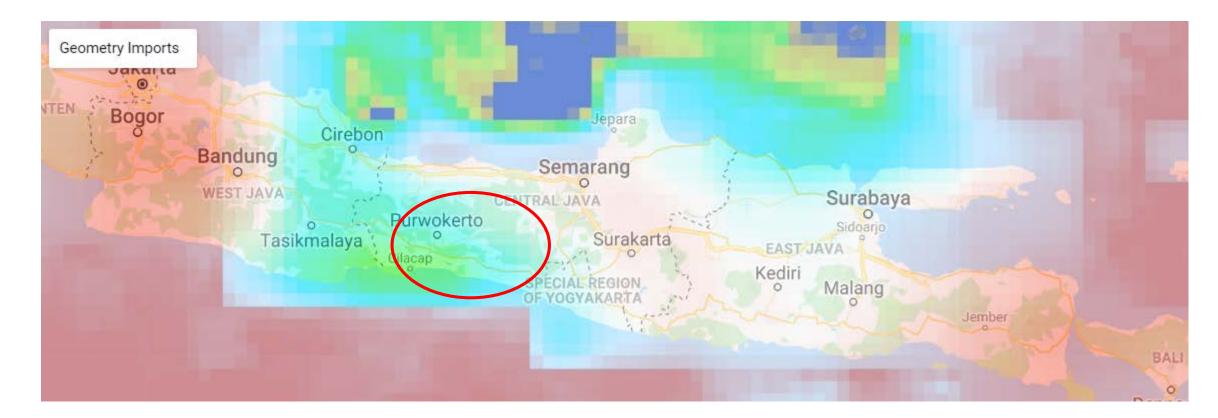
## Land Use in 2018





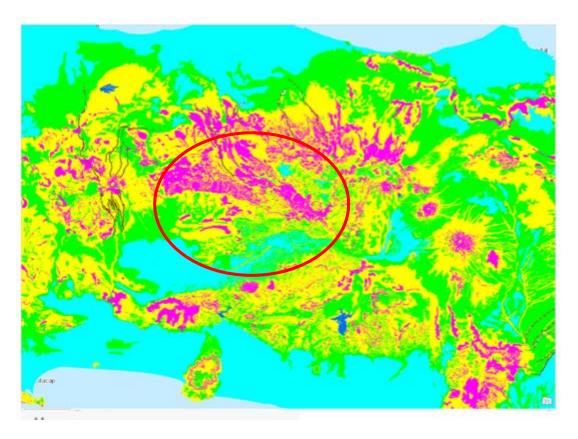


## GsMap data To Measure Rainfall Rate



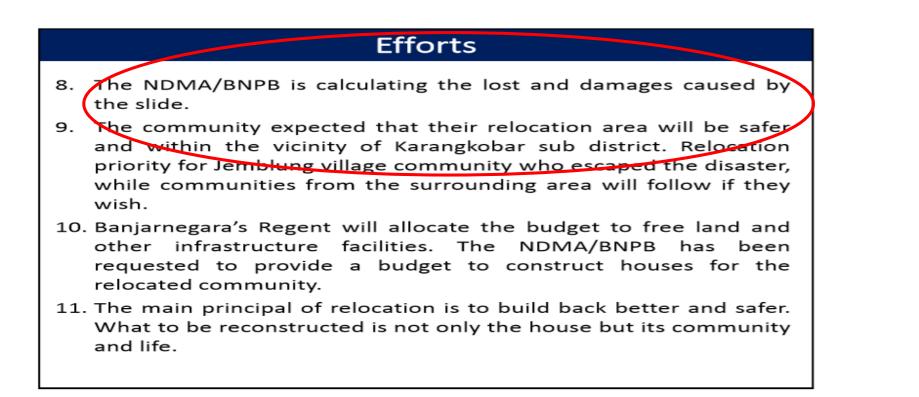


## **Ground Movement**











 Landslides as a disaster could be mapped with Remote Sensing
LAPAN has used a lot of Remote Sensing data to Mapping disaster affected by join UN-SPIDER Program and join International Charter Disaster
Remote Sensing is useful for rapid mapping of the impact of disasters, especially landslides



## http://pusfatja.lapan.go.id/simba/tanggapbencana/i ndex.php/home

https://sipandora.pusfatja.lapan.go.id

Source:National Dissaster Emergency Acency (BNPB)





## Terima kasih

### www.pusfatja.lapan.go.id