Accelerating Satellite Based data and Information for Disaster Management In Indonesia

Udrehk
Directorate Disaster Risk Mapping and Evaluation
Disaster is a recurring event

The occurrence of the tropical cyclone, earthquake, flood, tsunamis and other are not the first one. However, there is insufficient knowledge for us to take action against it.

Disaster events are a sign of an opportunity to better understand the dynamics of nature and our mistakes in managing nature.

An important lesson we have learned is: greater attention to extreme weather warnings.

All of knowledge related to how we can observe earth dynamic. Satellite data has an important role.
1973 Flores cyclone

The 1973 Flores cyclone was the deadliest known tropical cyclone in the Southern Hemisphere, having killed 1,653 people in Indonesia in April 1973. The cyclone formed in the Banda Sea on 26 April as a tropical low. It intensified as it moved in a west-southwest direction, before shifting to the south. On 29 April, the cyclone struck the north coast of the island of Flores, dissipating the next day. The cyclone killed 1,500 fishermen on Palu'e Island. The cyclone dropped heavy rainfall across Flores, causing deadly flash flooding that damaged buildings and roads.

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Meteorological history

On 26 April, a tropical low formed in the Banda Sea in the waters of eastern Indonesia. According to Australia's Bureau of Meteorology BoM, the low moved to the west-southwest and intensified, although this was based on a later analysis. As the storm was outside of the agency's jurisdiction, the BoM did not issue warnings on the system at the time. The low attained gale-force winds late on 27 April as it moved into the Flores Sea. Late the next day, the storm turned southsouthwest.[1][2]

The BoM estimated that the storm reached peak intensity early on 29 April, assessing it as a Category 3 on the Australian tropical cyclone intensity scale, with maximum sustained winds of 150 km/h (90 mph). While near peak intensity, the small tropical cyclone had eye

1973 Flores cyclone

Category 3 severe tropical cyclone
(Aus scale)

Category 3 tropical cyclone (SSHWS)

Satellite image of the cyclone on 28 April

| Formed | 26 April 1973 |
| Dissipated | 30 April 1973 |
| Highest winds | 10-minute sustained: 150 km/h (90 mph), 1-minute sustained: 185 km/h (115 mph) |
| Lowest pressure | 950 hPa (mbar), 28.05 inHg |
| Fatalities | 1,653 total |

(Deadliest tropical cyclone)
06/00Z (TROPICAL CYCLONE 26S (SEROJA) WARNING NR 7 - 55 knots)

06/12Z - 55 knots

07/00Z - 55 knots

07/12Z - 60 knots
Desa Amakaka
Catatan Tsunami di Pulau Banda?
Volcano Collapse Tsunami?

Source: Ron Harris presentation 2023
The Mt. Gamalama Instability in Generating Landslides in Ternate Island, Indonesia

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Mt. Gamalama has a history of volcanic eruptions that have occurred in 1628 and 1840. Regarding its geology, Mt. Gamalama has very steep flanks, and landslides entering the sea could be the potential mechanism of tsunami generation, which could threaten coastal populations and subaqueous infrastructure in the vicinity of Mt. Gamalama.

The potential volumes and types of landslides are estimated by a study of the Mt. Gamalama instabilities using the Generalized Linear-Gaussian failure criterion, which is applied in Slide 10.
INFOGRAFIS GEMPA BUMI
MAGNITUDE 5.6 SKALA RICHTER
KABUPATEN CIANJUR

WAKTU KEJADIAN SENIN 21 NOVEMBER 2022 PUKUL 13.21 WIB
CUT OFF TIME 24 DESEMBER 2022 PUKUL 17.00 WIB

16
KECAMATAN TERDAMPAK
180
DESAN TERDAMPAK

KERUGIAN MATERIAL

56.548
RUMAH RUSAK
26.856
RUMAH RINGAN
16.059
RUMAH SEDANG
13.633
RUMAH BERAT

18
FASILITAS KESEHATAN RUSAK
281
TEMPAT IBADAH RUSAK
701
FASILITAS PENDIDIKAN RUSAK
18
KANTOR & GEDUNG RUSAK

KORBAN JIWA

602
JIWA MENINGGAL DUNIA

5
JIWA DALAM PENCARIAN

593
LUKA BERAT KUMULATIF

2
MASSHRAWAT DI RS CIANJUR

114.683
JIWA MENGUNGSI

DONASI

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INSAR analysis using SENTINEL-1

Source: Buku Gempa Cianjur
Deformation Assessment from ALOS-Palsar satellite

Source buku gempa Cianjur
Fault interpretation using Alos Palsar

Source: Buku Gempa Cianjur
Longsoran Cijedil
Jalan Mangunkerta

Legenda
- Bangunan Rumah
- Longsoran
- Rekahan

Source: Buku Gempa Cianjur
Recommendation

1. Information about available data source for various disasters.
2. Accessible.
3. Data repository (data series).
4. High resolution data and availability (especially for emergency response).
Thank you very much