8 December 2022

PRELIMINARY SATELLITE-DERIVED DAMAGE ASSESSMENT

Mount Semeru, 4th December 2022 Volcanic eruption,
East Java province, Indonesia

Status: Pyroclastic flows and potential affected settlements observed along the southeastern flank

Further action(s): Continue monitoring
INDONESIA

AREA OF INTEREST

PROVINCE

EAST JAVA

Mount Semeru

EAST JAVA
MOUNT SEMERU, EAST JAVA PROVINCE
Mount Semeru and surrounding

Collapsed lava dome and pyroclastic flow along the southeastern flank

TerraSAR-X / 13 November 2022
TerraSAR-X / 05 December 2022
MOUNT SEMERU, EAST JAVA PROVINCE
Affected agricultural fields by pyroclastic flows

Pyroclastic density currents

Pyroclastic flow moving in southeast direction along the volcanic flank

PlanetScope image acquired on 4 December 2022
Image Center: 112°59’32”E 8°10’3”S
MOUNT SEMERU, EAST JAVA PROVINCE

Mount Semeru and surrounding

Pyroclastic flow and increased amount of lava deposits

Pyroclastic flow

Increased amount of pyroclastic deposits

Affected agricultural lands

Affected agricultural lands

PlanetScope / 04 December 2022

PlanetScope / 05 December 2022
MOUNT SEMERU, EAST JAVA PROVINCE

Affected settlements and increased amount of pyroclastic deposits
MOUNT SEMERU, EAST JAVA PROVINCE

Mount Semeru and surrounding

Increased amount of river flow and sediment deposits along the coastline

Sentinel-2 / 26 November 2022

Sentinel-2 / 05 December 2022
SUMMARY OF FINDINGS

- Collapsed lava dome and pyroclastic flow observed along the southeast flank of the volcano as of 5 December 2022;
- Affected agricultural fields observed as of 5 December 2022;
- Affected settlements close to the stream Kali Besuksemut observed as of 5 December 2022;
- Increased pyroclastic deposits observed as of 5 December 2022;
- Increased sediment deposits along the coastline as of 6 December 2022.
Data sources:

(1) Satellite Image (Post-event)

PlanetScope: 4 Dec. 2022 at 02:24 UTC and 5 December 2022 at 01:51 UTC
Resolution: 3 m
Copyright: Includes material © (2022) Planet Labs Germany GmbH. All rights reserved
Source: USGS

TerraSAR-X: 5 December 2022 at 22:05 UTC
Resolution: 3 m
Copyright: TerraSAR-X © DLR e.V. (2022), Distribution Airbus DS Geo GmbH
Source: DLR

Sentinel-2: 5 Dec 2022
Resolution: 10 m
Copyright: Contains modified Copernicus Sentinel Data [2022]
Source: ESA

(2) Satellite Image (Pre-event)

TerraSAR-X: 13 November 2022 at 22:05 UTC
Resolution: 3 m
Copyright: TerraSAR-X © DLR e.V. (2022), Distribution Airbus DS Geo GmbH
Source: DLR

Sentinel-2: 26 Nov 2022
Resolution: 10 m
Copyright: Contains modified Copernicus Sentinel Data [2022]
Source: ESA

Google Earth

(3) Ancillary data

Administrative boundaries: Badan Pusat Statistik (BPS - Statistics Indonesia), HDX
Analysis: United Nations Satellite Centre (UNOSAT)
Production: United Nations Satellite Centre (UNOSAT)