

This service summarizes current satellite mapping activities of interest to GDACS stakeholders. It is issued weekly and based on contributions from map-producing entities and GDACS partners.

Satellite mapping overview

As of 16 December 2014

Africa

Cape Verde volcano – GLIDE number: VO20141124CPV

On 23 November 2014 the Pico de Fogo volcano erupted for the first time since 1995. The Copernicus Emergency Management Service continues to monitor the situation in Fogo Island and recently published new reference and grading maps. Using satellite imagery collected on 09 December 2014, the Copernicus Emergency Management Service created a reference map depicting infrastructure and facilities in the northern Fogo Island towns of Laranjo, Mosteiros, Fonsaco, Pai António and Corvo. Satellite imagery acquired 29 and 30 November 2014, as well as 04, 07, 08, 09 and 12 December 2014 was used to analyze the lava flow's progression in grading maps. As of 12 December 2014, the lava flow had advanced north of Bangaeira village. A total of 424 hectares of land and 6.37 kilometers of local roads were destroyed. Approximately 10.5 hectares of residential settlements and 168 inhabitants were also affected by the lava flow. Map products and data are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package on the Copernicus Emergency Management Service website. Data can also be accessed in GeoTIFF, GeoPDF, GeoJPEG and vector (shapefile and KML) formats.

Source: Copernicus Emergency Management Service

Link: <http://emergency.copernicus.eu/mapping/list-of-components/EMSR111>

West Africa infectious disease – GLIDE number: ID20141010LBR

Following an outbreak of Ebola in western Africa, the World Health Organization (WHO) declared an International health emergency in August 2014. In response to a worsening situation, the International Charter for Space and Major Disasters was activated on 09 October 2014 by the USGS on behalf of the National Geospatial-Intelligence Agency (NGA) and by UNITAR-UNOSAT on behalf of the WHO Operations Center. As Project Manager, UNITAR-UNOSAT continues to work with the USGS to obtain and disseminate high resolution satellite imagery of the most heavily affected areas. The Copernicus Emergency Management Service recently released detailed reference maps for three areas of interest in Nzérékoré, Guinea. In order to provide security support to a Belgian medical mission in the field, satellite imagery acquired 12 August 2014 was used to delineate infrastructure and facilities in Nzérékoré. Areas examined include the towns of Gbote, Hoota, Konian, Louhoule, Komou, Gbaya, and the city of Nzérékoré. Map products and their accompanying data are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package on the Copernicus Emergency Management Service website. Data can also be accessed in GeoTIFF, GeoPDF, GeoJPEG

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and vector (shapefile and KML) formats. Recent satellite imagery of affected areas is also accessible online through the USGS Hazards Data Distribution System (HDDS) RSS feed.

Sources: International Charter for Space and Major Disasters, Copernicus Emergency Management Service, USGS, UNITAR-UNOSAT

Links: <https://www.disasterscharter.org/web/guest/activations/-/article/other-in-sierra-leone>

<http://emergency.copernicus.eu/mapping/list-of-components/EMSR110>

http://dds.cr.usgs.gov/ee-data/rss/events/201410_Ebola_Africa.rss

Asia

Philippines typhoon – GLIDE number: TC20141204PHL

On 06 December 2014 Typhoon Hagupit made landfall in the Philippines as a Category Three storm on the Saffir-Simpson scale. Heavy rainfall and strong winds caused flooding and significant damage to structures in the eastern part of the country. In anticipation of the typhoon's potentially damaging effects, the International Charter for Space and Major Disasters was activated on 04 December 2014 by UNITAR-UNOSAT on behalf of the UNOCHA Philippines and the UNDP Crisis Response Unit. Project management was assumed by the European Space Agency (ESA). The ESA, USGS, EUMETSAT, NASA, UNITAR-UNOSAT, Copernicus Emergency Management Service, and German Aerospace Center (DLR) are currently engaged in satellite imagery acquisition, coordination, and mapping activities for this event. The USGS continues to provide the latest satellite data coverage of affected areas through its Hazards Data Distribution System's (HDDS) RSS feed. NASA has monitored Typhoon Hagupit with satellite imagery from 01 to 12 December 2014. The NASA Earth Observatory has also published a map of flooding in southern Luzon Island as seen in satellite imagery acquired 09 December 2014. UNITAR-UNOSAT recently released several map products depicting Typhoon Hagupit's impact in parts of Eastern Samar Province and Leyte Province. Using satellite imagery acquired 08 December 2014, UNITAR-UNOSAT identified 460 hectares of agricultural fields affected by standing waters in Can-Avid Municipality, west of Dolores City in Eastern Samar Province. UNITAR-UNOSAT analysis of satellite imagery collected on 09 December 2014 revealed potentially damaged zones in Tacloban City, Leyte Province. It is estimated that a total of approximately 6,500 buildings are situated within these zones. Satellite imagery acquired 09 December 2014 was also used by UNITAR-UNOSAT to identify 526 damaged structures in Calbayog City, Samar Island. In Eastern Samar Province, UNITAR-UNOSAT analysis of satellite imagery collected 08 and 12 December 2014 revealed 597 damaged structures in Dolores City, 312 in Guiuan City, and 227 in Taft City. UNITAR-UNOSAT also published a web map of its analysis products as well as resources from the U.S. Government and other sources. This live map is updated daily in order to provide an ongoing record of satellite imagery analysis results across the area affected by Typhoon Hagupit. The Satellite Mapping Coordination System (SMCS) for Copernicus, DLR and UNITAR-

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UNOSAT on the Global Disaster Alert and Coordination System (GDACS) website continues to be updated as well. Links to the aforementioned emergency response resources are available below.

Sources: International Charter for Space and Major Disasters, ESA, USGS, EUMETSAT, NASA, UNITAR-UNOSAT, Copernicus Emergency Management Service, DLR

Links: <http://www.unitar.org/unosat/maps/69>

<https://unosatgis.cern.ch/LIVE/TC20141204PHL/>

<https://www.disasterscharter.org/web/guest/activations/-/article/flood-in-philippines>

http://dds.cr.usgs.gov/ee-data/rss/events/201412_Typhoon_Hagupit_PHL.rss

<http://www.nasa.gov/content/goddard/hagupit-northwestern-pacific-ocean/#.VIY2RMmadwn>

<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=84873&src=nha>

http://www.eumetsat.int/website/home/Images/ImageLibrary/DAT_2437036.html

<https://gdacs-smcs.unosat.org/events/view/id/13>

Europe

Czech Republic industrial accident – GLIDE number: EMSR113*

Following an explosion in mid-October 2014, a former munitions depot located in Vrbětice, South Moravia experienced a new series of blasts on 03 December 2014. Villages within the depot's vicinity were evacuated and ongoing clean-up work from the October 2014 explosion came to a halt. In response to this event, the Copernicus Emergency Management Service recently produced grading and delineation maps for disaster response authorities. Analysis of satellite imagery acquired 09 December 2014 revealed that the two industrial sites where the explosions occurred were destroyed. Fortunately, no other settlements, inhabitants, or transportation facilities were directly affected. Map products and data are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package on the Copernicus Emergency Management Service website. Data can also be accessed in GeoTIFF, GeoPDF, GeoJPEG and vector (shapefile and KML) formats.

Source: Copernicus Emergency Management Service

Link: <http://emergency.copernicus.eu/mapping/list-of-components/EMSR113>

Italy floods and landslide – GLIDE number: EMSR112*

Following heavy rainfall that started on 10 November 2014, the Northern Italian regions of Liguria and Piemonte experienced flooding and landslides. In order to aid local authorities with ongoing

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recovery efforts, the Copernicus Emergency Management Service recently released grading maps for Genova, Liguria. Using satellite imagery acquired 10 December 2014, the Copernicus Emergency Management Service identified 3.9 hectares of landslide affected areas. Approximately 15 landslide areas are depicted in the detailed grading maps. Overall, 3 buildings were destroyed, 3 highly affected and 2 moderately affected. Additionally, a total of 24 inhabitants were impacted by this event. Map products and data are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package on the Copernicus Emergency Management Service website. Data can also be accessed in GeoTIFF, GeoPDF, GeoJPEG and vector (shapefile and KML) formats.

Source: Copernicus Emergency Management Service

Link: <http://emergency.copernicus.eu/mapping/list-of-components/EMSR112>

This summary is compiled by the GDACS mapping & satellite imagery coordination mechanism, operated by the UNITAR Operational Satellite Applications Programme (UNOSAT).

When referring to this summary, please credit: GDACS, UNITAR-UNOSAT.

For comments, questions and to submit information on satellite image derived products, please contact: maps@gdacs.org

Sources indicate satellite analysis production entities and imagery providers. The products referenced in this summary are based on remote satellite imagery and may not be validated in the field prior to release, in which case findings are based only on what is observed in the satellite imagery.

**Not an official GLIDE number, as event has no entry in GLIDE database, but used by GDACS for seamless information integration.*