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 05 May 2015

Asia

Nepal earthquake – GLIDE number: EQ-2015-000048-NPL

On 25 April 2015, Nepal experienced a 7.9 magnitude earthquake which caused over six thousand deaths as well as widespread damage and destruction. The International Charter on Space and Major Disasters was activated the same day by the Disaster Management Support (DMS) Programme Office, Indian Space Research Organisation (ISRO), and UNITAR-UNOSAT, the latter activated on behalf of UNICEF. In order to provide an ongoing record of satellite imagery analysis results over Nepal, UNITAR-UNOSAT continues to update the GDACS LIVE web map which combines multiple image analysis products from the United States National Geospatial-Intelligence Agency (NGA), the Copernicus Emergency Management Service, and UNITAR-UNOSAT. This tool is open to contributions from all entities deriving information from satellite imagery. Crowd-sourced UN-ASIGN field photos that have been georeferenced are also provided in near real time in the web map. Additionally, UNITAR-UNOSAT used satellite imagery acquired 27 and 29 April 2015 to publish a series of damage assessments for Bhaktapur, Banepa, Sankhu, Hansapur, Muchok, and Daraudi Valley, as well as a report of destruction near the earthquake epicenter. The Copernicus Emergency Management Service analyzed satellite imagery from 27 and 29 April 2015 as well as 01, 02 and 03 May 2015 and published new delineation, reference, and grading maps for Lenkhnath, Dhunche, Sundarbazar, Betrawati, Bharatpur, Bidur, Pokhara, Chilime, Deurali, Kathmandu, Kundule, Hetauda, Damauli, Gumda, Jagat, and Gorkha. The Asian Institute of Technology, University of Tokyo, British Geological Survey, DLR, SERTIT, and NRSC have also used recent satellite imagery to produce maps of damage and destruction in Nepal. Several of these entities and the NASA Earth Observatory recently produced maps of the devastating landslides in Langtang Valley which buried an entire village. The NASA Earth Observatory also published a map illustrating power outages in regions of Nepal, India, and China following the earthquake. All aforementioned map products are available for online viewing and download in various formats on their respective websites listed below. The International Charter on Space and Major Disasters' website also provides links to NGA resources, including regional atlases to aid rescuers and relief planners, as well as related news and resources.

Sources: International Charter on Space and Major Disasters, UNITAR-UNOSAT, Copernicus Emergency Management Service, NASA Earth Observatory, DLR, SERTIT, NGA, NRSC, Asian Institute of Technology, University of Tokyo, British Geological Survey

Links: https://www.disasterscharter.org/web/guest/-/landslide-in-nep-2

https://unosatgis.cern.ch/live/EQ20150425NPL/

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http://www.unitar.org/unosat/maps/NPL

http://emergency.copernicus.eu/mapping/list-of-components/EMSR125

http://earthobservatory.nasa.gov/NaturalHazards/event.php?id=85823

http://www.zki.dlr.de/article/2748

http://sertit.u-strasbg.fr/RMS/action.php?id=3020633801

Central America

Mexico, Guatemala, Belize wildfires – GLIDE number: TBD

Numerous wildfires occurred in southern Mexico, northeastern Guatemala, and northern Belize in late April 2015. The NASA Earth Observatory acquired satellite imagery of the wildfires on 26 April 2015 and produced a situational overview map. Particularly prominent over the Yucatan Peninsula, smoke from the burning wildfires is visible moving in a northwesterly direction. Hotspots detected by the satellite are outlined in red and therefore easily seen on the map. Such fires are of interest to scientists since recent research suggests the smoke they produce may increase the severity of tornados in the United States. This map product is available for online viewing and download in JPEG format on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=85800&eocn=home&eoci=nh

Europe

Italy phytosanitary emergency – GLIDE number: EMSR124*

A phytosanitary emergency took hold over the Apulia region of Southern Italy in early April 2015. Xylella fastidiosa is a bacterium that causes disease in vegetation and has resulted in a rapid decline of olive trees in this part of Italy. The Copernicus Emergency Management Service created an internal activation for this event on 24 April 2015 in order to aid Civil Protection authorities with planning and logistics for field operations. Satellite imagery acquired 11 April 2015 was used by Copernicus to produce delineation maps of the Gaugnano, Avetrana, and Torre Colimena areas. Copernicus identified 32.8 hectares of olive and fruit trees in Gaugnano that were pruned and tilled, as well as 2,115 infected trees, bushes, and vineyards that were eradicated to prevent the disease from spreading. In Avetrana, 181.4 hectares of pruned and tilled olive trees were found and 231 infected olive trees were eliminated. Lastly, 122.6 hectares of olive trees were pruned and tilled in Torre Colimena and zero were eradicated. Map products are available in TIFF, PDF, and JPEG formats as well as a downloadable zipped vector package on the Copernicus Emergency Management

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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/EMSR124

Oceania

Vanuatu volcano – GLIDE number: TBD

The Vanuatu archipelago recently experienced volcanic activity on the island of Ambrym. Ambrym contains one of the most active volcanoes of Vanuatu. The NASA Earth Observatory last observed volcanic activity there in August of 2013. Recently, the NASA Earth Observatory acquired satellite imagery of the volcano on 25 April 2015 and produced a situational overview map. A large ash plume emanating from the volcano and moving in a southeasterly direction over the Pacific Ocean towards Malampa Island is visible. The plume can also be seen travelling over the Benbow and Marum craters of the Ambrym volcano. This map product is available for online viewing and download in GeoTIFF and JPEG format on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=85796&eocn=home&eoci=nh

South America

Chile volcano – GLIDE number: VO-2015-000045-CHL

Located in the Los Lagos Region of Chile, the Calbuco Volcano erupted on 22 April 2015 for the first time in 42 years. The International Charter on Space and Major Disasters was activated by ONEMI on 23 April 2015 and project management was assumed by CONAE. CONAE recently published several maps of the volcano using satellite imagery acquired 23, 24, 25 and 27 April 2015. As of 23 April 2015, some craters of Calbuco could be seen spewing ashes. By 24 April 2015 the volcano emitted a large ash plume that moved in an easterly direction. Imagery from 25 April 2015 suggests that the volcano's activity had momentarily subsided, however, by 27 April 2015 another sizeable ash plume emission was visible moving in a southeasterly direction. The DLR also published map product that displays a change analysis of the volcano based upon satellite imagery collected 14, 23 and 26 April 2015, as well as 04 March 2015. The map shows that the eruption had melted a glacier and snowfield on the summit of Calbuco and the roughness of this area's surface increased thereafter. On the eastern flank of the volcano, the surface became smoother as a result of ash accumulation in the area. The ash produced by Calbuco travelled thousands of kilometers and affected other regions of Chile, Argentina, Uruguay and Brazil. CONAE and DLR map products are available for online

viewing and download in KMZ, ESRI world file, and JPEG formats on the International Charter on Space and Major Disasters' website.

Sources: International Charter on Space and Major Disasters, CONAE, DLR

Links: https://www.disasterscharter.org/web/guest/-/volcano-in-ch-20

http://www.zki.dlr.de/article/2736