

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 11 February 2014

Europe

France floods – GLIDE number: EMSR068*

Storm Qumaira recently caused flooding in the Finistère department of Brittany, France and resulted in orange flood warnings for the departments of Morbihan, Ille-et-Vilaine, and Pas de Calais. In response to this event, the Copernicus Emergency Management Service released eight maps that illustrate the water extent in the areas of Rennes, Ploërmel, and Redon. Post event satellite imagery acquired 08 and 09 February 2014 was utilized to create both overview and detailed delineation flood maps of these areas for disaster response authorities. Maps indicate that Rennes' population was most heavily affected by the flooding, followed by Redon, and finally Ploërmel. While flood waters in Rennes increased significantly from 08 to 09 February 2014, waters decreased substantially in Ploërmel and slightly in Redon over this time. Map products and data for this event are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package. Data can 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/EMSR068>

South America

Peru floods – GLIDE number: TBD

Several days of heavy rain caused landslides on 20 January 2014 over the Mantaro River in the Huancavelica Province of Peru. The International Charter Space and Major Disasters was activated on 21 January 2014 by the Argentinean Space Agency (CONAE) on behalf of the National Civil Protection Agency of Peru (INDECI). Analysis of optical and radar satellite imagery acquired 25 and 26 January 2014 provides a three dimensional view of a major landslide's area and break line near the town of Cuenca. Evidence of a dam caused by the landslide is also shown, along with the resultant upstream flooding of villages along the Mantaro River. A portion of the Mantaro River bed appears to have changed its position as well. Imagery of a smaller landslide alongside this river indicates a disruption of the circulation on Route 3-S. Map products of this event are available for online viewing at the International Charter Space and Major Disasters' website.

Source: Argentinean Space Agency, International Charter Space and Major Disasters

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Link:

http://www.disasterscharter.org/web/charter/activation_details?p_r_p_1415474252_assetId=ACT-474

Africa

Central African Republic complex emergency – GLIDE number: OT-2013-000152-CAF

Following a December 2013 outbreak of violence in the Central African Republic, the UNITAR Operational Satellite Applications Programme (UNOSAT) employed satellite imagery to detect IDP shelters on the grounds of Bangui’s M Poko Airport. In its most recent update, UNITAR/UNOSAT used imagery acquired 20 January 2014 to compare the extent of the IDP settlement with data from 28 December 2013. The results reveal that the total area occupied by IDPs (improvised shelters, administrative support, and other structures) increased by 4.5 hectares over this period, from 22.3 to 26.8 hectares. Further analysis indicates bare areas that were either previously covered with shelters which have since been relocated or have been cleared in preparation for the arrival of more IDPs in the near future. This map is available for viewing on UNITAR/UNOSAT’s website as a PDF.

Source: UNITAR/UNOSAT

Link: <http://www.unitar.org/unosat/node/44/1926>

South Sudan complex emergency – GLIDE number: OT-2014-000001-SSD

As a result of escalating violence in South Sudan during the month of December 2013, over 30,000 civilians sought refuge in United Nations facilities. In an effort to observe the progression of this situation, the UNITAR Operational Satellite Applications Programme (UNOSAT) recently released an IDP camp expansion update for the United Nations Mission in South Sudan’s (UNMISS) base at Juba Airport in Central Equatoria State, damage assessments for the cities of Bor in Jonglei State and Malakal in Upper Nile State, and maps of destruction in the towns of Leer and Mayom, Unity State. Satellite imagery of the UNMISS base at Juba Airport indicates a moderate to minimal expansion of total IDP occupied area (improvised shelters, administrative support, and other structures) from 7 hectares on 28 December 2013, to 7.9 hectares by 07 January 2014, to 8.9 hectares on 19 January 2014, and finally to 9 hectares by 30 January 2014. Using satellite imagery of Bor acquired 25 December 2013 and 19 January 2014, UNITAR/UNOSAT identified a total of 2,055 damaged structures – 1,962 residential and related structures as well as 93 commercial or warehouse structures. The downtown area of Bor, composed of government buildings, was the most heavily damaged. Analysis of satellite imagery from 06 December 2013 and 18 January 2014 of Malakal revealed a total of 573 damaged structures – 515 residential and related structures as well as 58 commercial or warehouse structures. Malakal’s downtown and primary roads bordering the town experienced the most damage. Signs of looting in both warehouse and residential areas were also

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apparent. Satellite imagery acquired 08 April 2013, 29 September 2013, 11 January 2014, 18 January 2014, and 02 February 2014 shows that a large portion of Leer and the majority of Mayom have been destroyed, mainly by fire. UNITAR/UNOSAT identified a total of 1,556 burned or otherwise destroyed structures (including tukuls, other residential structures, and outbuildings) and 26 destroyed commercial structures in Leer, as well as 1,801 destroyed structures in Mayom's town center and its surrounding areas. Maps of this complex emergency are available for download as PDFs. Corresponding shapefiles and geodatabases in ESRI format can also be accessed through UNITAR/UNOSAT's product links.

Source: UNITAR/UNOSAT

Link: <http://www.unitar.org/unosat/maps/110>

Middle East

Syria complex emergency – GLIDE number: CE20130604SYR*

In the context of Syria's humanitarian crisis, the UNITAR Operational Satellite Applications Programme (UNOSAT) has been monitoring the Al Zaatari refugee camp, located in Mafraq Governorate, Jordan. UNITAR/UNOSAT recently published an updated map of Al Zaatari that shows satellite-detected shelters and other buildings in this refugee camp of 531.8 hectares. Using satellite imagery from 07 January 2014, a total of 28,093 shelters as well as 1,735 infrastructure and support buildings were detected. In comparison with satellite data from 30 September 2013, a total of 4,982 shelters have been closed or moved and 6,868 shelters have been created. UNITAR/UNOSAT reports an increase in the number of shelters by about 2,171, or approximately 8.4 percent, between 30 September 2013 and 07 January 2014. This map is available for download on UNITAR/UNOSAT's website as a PDF. Product links also provide access to accompanying shapefiles and a geodatabase in ESRI format.

Source: UNITAR/UNOSAT

Link: <http://www.unitar.org/unosat/node/44/1928>

Southeast Asia

Indonesia volcano – GLIDE number: TBD

In early January 2014, the Mount Sinabung volcano of Sumatra, Indonesia erupted 115 times in less than two days. The International Charter Space and Major Disasters was subsequently activated on 07 January 2014 by the United States Geological Survey (USGS) on behalf of Indonesia's Center for Volcanology and Geological Hazard Mitigation. Analysis of radar satellite imagery acquired 18 January 2014 was conducted by the Remote Sensing Application Center of the Indonesian National

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Institute of Aeronautics and Space (LAPAN). The estimated distribution of the volcano eruption's lava and pyroclastics deposits has been delineated to the southeast of the Mount Sinabung Crater and it spans a distance of over two kilometers. This map product is available for online viewing at the International Charter Space and Major Disasters' website.

Source: Remote Sensing Application Center, Indonesian National Institute of Aeronautics and Space, International Charter Space and Major Disasters

Link:

http://www.disasterscharter.org/web/charter/activation_details?p_r_p_1415474252_assetId=ACT-473

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.*