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 17 November 2014

Africa

South Sudan complex emergency – GLIDE number: CE20131218SSD

As a result of escalating violence in South Sudan during December 2013, over 30,000 civilians sought refuge in United Nations facilities. UNITAR-UNOSAT has monitored the progression of this situation and recently released two map updates depicting IDP settlements at the UNMISS bases in Bor and Juba Airport, South Sudan. Using satellite imagery from 21 October 2014, UNITAR-UNOSAT detected a 2.95 hectare reduction in IDP areas located at the UNMISS base in Bor. While previous analysis of the base revealed 5.71 hectares on 21 April 2014, upon recent examination 2.76 hectares of IDP areas were observed. Satellite imagery acquired 21 October 2014 also showed that a large part of the IDP settlement in Bor was flooded. Nonetheless, some IDP shelters in the flooded area remained visible. UNITAR-UNOSAT analysis of satellite imagery acquired 07 November 2014 and 09 February 2014 also revealed a decrease in IDP camp area for the UNMISS base at Juba Airport. Whereas 9.2 hectares of camp area were detected on 09 February 2014, by 07 November 2014 a total area of 6.4 hectares was occupied by IDPs. IDP occupied areas in this analysis included improvised shelters, as well as administrative support and other structures in some cases. These map products are available for download as PDFs on the UNITAR-UNOSAT website.

Source: UNITAR-UNOSAT

Link: http://www.unitar.org/unosat/maps/100

Asia

Sri Lanka landslide – GLIDE number: TBD

On 29 October 2014, monsoon rains caused a landslide near the southern Sri Lankan town of Haldummulla in Badulla District. Consequently, the International Charter for Space and Major Disasters was activated by the Asia Disaster Reduction Center (ADRC) and project management was assigned to Asian Institute of Technology (AIT). The AIT's Geoinformatics Center recently published a map of the landslide using satellite imagery acquired 06 November 2014 and 08 April 2012 for comparison. Post-disaster imagery shows the landslide area in which approximately 150 houses and at least one hundred residents were buried by mud and debris. Mud as deep as nine meters was created by the landslide. The AIT map is available for online viewing on the International Charter for Space and Major Disasters' website. A satellite imagery collection of the affected region can also be accessed on the USGS Hazards Data Distribution System's (HDDS) RSS feed.

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Sources: International Charter Space and Major Disasters, Asian Institute of Technology, USGS Hazards Data Distribution System

Links: https://www.disasterscharter.org/web/guest/activations/-/article/landslide-in-sri-lanka

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

Russia volcano – GLIDE number: TBD

Russia's Zhupanovsky volcano exhibited explosive activity on 07 November 2014 with the release of an ash plume that extended 10 kilometers over the Kamchatka Peninsula. By 08 November 2014, the ash plume had risen to an altitude of 7 kilometers and moved south to southwest of the volcano. The NASA Earth Observatory acquired a satellite image of Zhupanovsky from 09 November 2014 to produce an overview map of the volcano's activity. On 09 November 2014, the aforementioned ash plume was still visible, however, its movement had changed to a southeast direction. As of 13 November 2014, moderate explosive activity at Zhupanovsky was expected to continue. 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=84714&eocn=home&eoci=nh

Europe

Slovenia floods – GLIDE number: EMSR107*

Torrential rainfall led to flooding in Slovenia in early November 2014. The Copernicus Emergency Management Service has continued to monitor the situation in Ljubljana and has analyzed new flooding in Ilirska Bistrica. Analysis of satellite imagery acquired 14 November 2014 revealed 3,491 hectares of flooded area in Ljubljana and 1,826 affected inhabitants. This represents a decrease in flooded area by 3,730 hectares and a reduction of 3,186 affected inhabitants since the previous Ljubljana analysis using satellite imagery from 08 November 2014. Following new flooding caused by heavy precipitation in Ilirska Bistrica on 11 November 2014, the Copernicus Emergency Management Service acquired and analyzed satellite imagery from 13 November 2014. Copernicus identified 322.82 hectares of flooded area and 60 affected inhabitants in Ilirska Bistrica. Residential settlements and secondary roads were mainly impacted by the flooding. Map products and data for this event area 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

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Link: http://emergency.copernicus.eu/mapping/list-of-components/EMSR107

Italy floods and landslides – GLIDE number: EMSR108*

Following heavy rainfall that started on 10 November 2014, the Northern Italian regions of Liguria, Lombardia, and Piemonte experienced severe floods and landslides. The Copernicus Emergency Management Service has responded to this crisis by producing reference and delineation maps for the areas of Ispra, Borgosesia, and Carasco. Although several maps are still in production, published delineation maps of Ispra depict the flood extent in this area. Using satellite imagery acquired 14 November 2014, the Copernicus Emergency Management Service identified 62.7 hectares of flooded area and 5 affected inhabitants within Ispra. Flooding in Ispra has impacted industrial and residential settlements, local roads, croplands, wetlands, and woodlands. Map products and data for this event area 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/EMSR108

Iceland volcano – GLIDE number: TBD

In September 2014 a fissure eruption between Iceland's Bardarbunga and Askja volcanoes created the Holuhraun Lava Field which has since spewed lava and hot gas. At present, the Holuhraun Lava Field has covered 70 square kilometres with molten rock and is the largest eruption in Iceland since the 18th century. The NASA Earth Observatory acquired satellite imagery of the Holuhraun Lava Field on 09 November 2014 and produced both natural and false color maps depicting Holuhraun's activity. The lava flow field and a volcanic plume extending upward and westward are visible. Clouds, snow and ice can also be seen surrounding Holuhraun. A comparison tool for viewing the 09 November 2014 image in both natural and false color is provided. Map products of the Holuhraun Lava Field are 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/event.php?id=84283

Middle East

Syria complex emergency – GLIDE number: CE20130604SYR

As a result of ongoing conflict in Syria, many cities continue to experience substantial damage and destruction. In support of the implementation of UN Security Council resolutions 2139 (2014) and

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2165 (2014), UNITAR-UNOSAT recently reviewed high resolution satellite imagery for indicators of damage and destruction, as well as signs of continuing fighting and displaced citizens in the cities of Aleppo and Damascus. UNITAR-UNOSAT analysis of satellite imagery acquired 06 November 2014, 22 October 2014, and 10 August 2014 indicates ongoing fighting in the city of Aleppo. Numerous severely damaged buildings were identified in the neighborhoods of Ayn at-Tal, Owaija, Haydariyeh, Hanano and Al `Urqub. In the neighborhood of Ba'aiedin, some destroyed buildings showed damages similar to those observed from air strikes or barrel bombing. Visible damage occurring between 10 August 2014 and 06 November 2014 was also identified in the district of Handarat. As of 06 November 2014 vehicle traffic was entirely absent in the road connecting Aleppo and Handarat. UNITAR-UNOSAT analysis of satellite imagery acquired 03 November 2014 and 27 September 2014 revealed widespread damage around the capital city of Damascus. Munitions impacts resulted in numerous destroyed and severely damaged structures and craters. Newly constructed roadblocks and trenches were also detected as of 03 November 2014 and vehicle traffic in the south-eastern part of the city was almost completely absent. Situation update reports for the cities of Aleppo and Damascus are available for download as PDFs on the UNITAR-UNOSAT website.

Source: UNITAR-UNOSAT

Link: http://www.unitar.org/unosat/maps/98

Iraq complex emergency – GLIDE number: CE20140613IRQ

Ongoing violence in Iraq has led to numerous instances of electrical blackout conditions within the country. UNITAR-UNOSAT recently published a map illustrating satellite-detected areas of visible light at night time along the Tigris River in the Governorates of Salahedin, Ta'meem, Diala, and Ninevah. Satellite imagery acquired 22 October 2014 and 26 May 2014 was used to show the difference between recent electrical blackout conditions and the situation prior to widespread conflict. UNITAR-UNOSAT analysis shows 22 October 2014 night time lights in red and 26 May 2014 illuminated areas in yellow. Thus, areas likely to have experienced electrical blackout conditions on 22 October 2014 are indicated in visible yellow on the map. As of 22 October 2014, regions that were probably experiencing electrical blackout conditions include large areas of Baiji and Tikrit, as well as many outlying towns and villages. This map product is available for download as a PDF on the UNITAR-UNOSAT website.

Source: UNITAR-UNOSAT

Link: http://www.unitar.org/unosat/maps/44

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North America

United States volcano – GLIDE number: TBD

On 12 November 2014 minor ash eruptions and increased seismic activity were observed at Pavlof, Alaska's most active volcano. The NASA Earth Observatory acquired satellite imagery of Pavlof's activity on 14 and 15 November 2014. An ash plume emanated from Pavlof and appeared to move in a westward direction towards the Bering Sea on 14 November 2014. By 15 November 2014 Pavlof's ash plume had grown in size and rose to an altitude of 9 kilometers. Two separate satellite images from 15 November 2014 show the ash plume from different viewpoints. Although the volcano's activity was high on 15 November 2014, by the evening of 16 November 2014 its ash eruptions and seismic activity had decreased significantly. According to the Alaska Volcano Observatory such pauses may occur for days or weeks, however, volcanic activity could still resume at any point. Map products for this event are available for online viewing as well as download in GeoTIFF and JPEG format on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: http://earthobservatory.nasa.gov/NaturalHazards/event.php?id=81147

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.*