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 24 November 2014

Africa

West Africa infectious disease – GLIDE number: ID20141010LBR

Due to 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. In support of emergency humanitarian assistance activities UNITAR-UNOSAT also recently published an atlas of Ebola Treatment Centers in the countries of Guinea, Liberia, Senegal, and Sierra Leone. Detailed crisis satellite imagery from various dates shows coverage over the locations of existing and planned Ebola Treatment Centers. The Copernicus Emergency Management Service has started map production for the n'Zere Kore camp area in Guinea in an effort to provide security support for a Belgian medical mission that will soon work there. The Ebola Treatment Centers Atlas is available for download as a PDF on the UNITAR-UNOSAT website. Satellite imagery depicting the situation prior to and following the Ebola outbreak is accessible online through the USGS Hazards Data Distribution System (HDDS) RSS feed. Future map products and data for the Guinean n'Zere Kore camp area will be available in JPEG, PDF and TIFF formats on the Copernicus Emergency Management Service website.

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

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

https://www.unitar.org/unosat/node/44/2107

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

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

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Asia

Bangladesh refugee camp – GLIDE number: EMSR109*

Following the passage of tropical cyclone Mahasen in May 2013, many inhabitants of low-lying areas in Bangladesh and Myanmar were relocated to the Kutupalong Rohingya refugee camp in Bangladesh. The Copernicus Emergency Management Service recently released two reference maps of the camp and its surrounding area in order to aid in the planning and strategic design of humanitarian response. Analysis of satellite imagery acquired 24 November 2014 shows that a camp area of 58.9 hectares is present. Within the camp are 2,153 shelters and 51 other infrastructural structures. Roads, water bodies, and other infrastructure are also depicted in the map. 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/EMSR109

Russia volcano – GLIDE number: TBD

One of Russia's largest and most active volcanoes located on the Kamchatka Peninsula showed signs of activity recently. The NASA Earth Observatory acquired satellite imagery of this volcano, named Shiveluch, on 23 November 2014 and subsequently published a map of it. An ash plume floating in an eastward direction from Shiveluch is visible. Activity from Shiveluch is not a rare occurrence. For the past decade the volcano has generated steam and ash plumes, as well as occasional lava flows, pyroclastic flows, and dome collapses. 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=84790&eocn=home&eoci=nh

Europe

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 responded to this crisis by producing reference, delineation, and grading maps for the areas of Ispra, Borgosesia, and Carasco. Updated maps of Ispra were created using satellite imagery acquired 18 and 19 November 2014. Analysis revealed 45.2 hectares of flooded area and 0.1 hectare of landslide area. Approximately 61 inhabitants, 5 residential settlements, 1.9 kilometers of

local roads, 25 hectares of grassland, 6.6 hectares of woodland, and 4.27 hectares of cropland were affected by the event. The overall flooding of Ispra thus decreased by 17.5 hectares between 14 November 2014 and 19 November 2014. Analysis of satellite imagery from 18 November 2014 shows 0.84 hectares of affected area in Borgosesia, including 0.13 hectares of settlements, 0.5 hectares of land-use, and 10 impacted inhabitants. Examination of satellite imagery acquired 19 November 2014 over the Carasco area revealed 12 hectares of area affected by landslides and erosion. In this area 86 inhabitants, 1.33 hectares of settlements, 0.46 kilometers of roads, and 11.84 hectares of land-use were affected. 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

Middle East

Syria complex emergency – GLIDE number: CE20130604SYR

As a result of the ongoing conflict in Syria, many citizens continue to flee the country in search of refuge as cities experience substantial damage and destruction. UNITAR-UNOSAT recently published an updated map of the refugee situation in Jordan's Al Zaatari camp and a damage density map for the Syrian cities of Homs, Aleppo, Hama, Deir Ez Zor, Ar Raqqa, and Daraa. Using satellite imagery acquired 11 November 2014, UNITAR-UNOSAT detected a total of 29,243 shelters as well as 1,915 infrastructure and support buildings within the 534.4 hectares of Al Zaatari refugee camp in Mafraq Governorate, Jordan. Since the previous UNITAR-UNOSAT analysis of the camp, which examined satellite imagery from 06 July 2014, a total of 2,779 shelters closed or were moved and 1,910 shelters were constructed. The number of shelters thus decreased by approximately 2.5% between 06 July 2014 and 11 November 2014. In order to evaluate the damage and destruction present in the cities from which many Syrian refugees have fled, UNITAR-UNOSAT created a damage site density index using satellite imagery from 2010, 2011, 2013 and 2014. City-wide analyses revealed a total of 13,778 affected structures in Homs, 8,510 in Aleppo, 5,233 in Hama, 3,112 in Deir Ez Zor, 467 in Ar Raqqa, and 351 in Daraa. The damage density map provides an overview of the conflict's impact on each of these cities as of the most recent date in which satellite imagery for them was acquired and analyzed by UNITAR-UNOSAT. The refugee camp and damage density maps are available for download as PDFs on the UNITAR-UNOSAT website. An accompanying shapefile and geodatabase in ESRI format are also provided for the refugee camp analysis.

Source: UNITAR-UNOSAT

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

North America

United States snow storm – GLIDE number: TBD

On 18 November 2014 upstate New York experienced a massive snow storm. The city of Buffalo, located just east of Lake Erie, was one of the hardest hit with more than two meters of snow recorded. The NASA Earth Observatory acquired satellite imagery of the storm as it was forming over the Great Lakes on 18 November 2014. Subsequently, it produced natural and false color maps of the event which illustrate storm features such as cloud streets, water clouds, ice clouds, and snow. Although the storm eventually dissipated, concerns are currently focused on the possibility of severe flooding as warmer weather melts the remaining snow. Map products 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/view.php?id=84758&eocn=home&eoci=nh

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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.*