

***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.***

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## Satellite mapping overview

As of 10 November 2015

### Africa

#### **Somalia floods – GLIDE number: FL-2015-000145-SOM**

In late October 2015, flash floods affected thousands of people residing in low lying areas of southern and central Somalia. UNITAR-UNOSAT continues to monitor the situation in collaboration with IGAD/ICPAC and FAO SWALIM. It recently produced a map of potentially saturated soils and probable flood waters in the Jowhar, Middle Shabelle region of Somalia. Using satellite imagery acquired 30 October 2015 and 02 January 2015, UNITAR-UNOSAT identified a total affected area of roughly 54,000 hectares in the Shabelle Dhexe and Hoose provinces. As of this date, approximately 41,500 hectares of possibly saturated soils and 12,200 hectares of probable standing flood waters were detected over the districts of Jowhar, Balcad, and Afgooye. Due to the low spatial resolution of the satellite data used, the exact limit of flood water is uncertain. Detected water bodies likely reflect an underestimation of all flood-affected areas within the map extent. This map product is available for download as a PDF on the UNITAR-UNOSAT website. Accompanying data in ESRI shapefile and geodatabase format is also accessible on the website.

Source: UNITAR-UNOSAT

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

### Asia

#### **Afghanistan/Pakistan earthquake – GLIDE number: EQ-2015-000147-AFG**

On 26 October 2015, the Hindu Kush region of northeastern Afghanistan was struck by a 7.5 magnitude earthquake. More than 360 people were killed by the earthquake, the majority of which resided in Pakistan, and at least 2,000 were injured. In response to this event, the International Charter on Space and Major Disasters was activated by UNITAR-UNOSAT on behalf of UNOCHA. UNITAR-UNOSAT recently produced new maps of potential damage in some remote mountainous areas of northern Pakistan that were impacted significantly by the earthquake. Analysis of satellite imagery acquired 31 October 2015 revealed a total of 782 potentially damaged structures in the Chitral, Kalam, and Aliabad areas of Khyber Pakhtunkhwa and Gilgit-Baltistan provinces. Specifically, 369 possibly damaged structures were identified in the Chitral area, 358 in the Kalam area, and 55 in the Aliabad area. These regions ranged from being situated roughly 120 kilometers to 350 kilometers away from the epicenter of the 26 October 2015 earthquake. Map products are available for download as PDFs on the UNITAR-UNOSAT website. Accompanying data in ESRI shapefile and geodatabase format is also accessible on this website.

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Sources: UNITAR-UNOSAT, International Charter on Space and Major Disasters

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

<https://www.disasterscharter.org/web/guest/-/earthquake-in-afghanist-1>

### **Indonesia volcano – GLIDE number: TBD**

Indonesia's Mount Rinjani volcano on Lombok Island started to erupt in late October 2015. Ash from the eruption covered towns and farmland in three Indonesian islands, and several airports were closed. The NASA Earth Observatory acquired 03 and 04 November 2015 satellite imagery of the volcano and produced two overview maps. On 03 November 2014, a plume of ash measuring 3.5 kilometers above sea level was visible emanating from Mount Rinjani and drifting westward towards Bali and Java. The ash enveloped seven villages in North Lombok and caused the Ngurah Rai International Airport in Bali to shut down. By 04 November 2014 the ash plume, which appeared thicker than previously, had reached a height of 4.3 kilometers and moved in a southwest direction. At this time airports in Lombok, Bali, and Java had closed temporarily and residents of Lombok Island were cautioned not to pass beyond a three kilometer radius of the volcano. Map products are available for online viewing or 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=86932&eoqn=home&eoci=nh>

## **Middle East**

### **Syria complex emergency – GLIDE number: CE20130604SYR**

Due to the ongoing conflict in Syria, many citizens continue to flee the country in search of refuge. UNITAR-UNOSAT recently published an updated map of the Al Azraq refugee camp located in Az Zarqa Governorate, Jordan. Satellite imagery acquired 05 October 2015 was analyzed and a total of 14,227 structures were identified. This total includes 10,071 transitional shelters as well as 2,690 infrastructure and support buildings. Compared with the previous UNITAR-UNOSAT analysis of 11 November 2014 satellite imagery, there has been an increase of approximately 0.5% in all structures. Continuing preparations for the accommodation of additional incoming refugees were visible in recent imagery. The development of water and sanitation services capable of supporting thousands of proximate shelters was also observed in multiple camp zones. The updated map of Al Azraq is available for download as a PDF on the UNITAR-UNOSAT website. Accompanying data in ESRI shapefile and geodatabase format is also accessible through UNITAR-UNOSAT's product links.

Source: UNITAR-UNOSAT

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

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### **Yemen cyclones – GLIDE numbers: TC-2015-000149-YEM & TC-2015-000152-YEM**

During the first two weeks of November 2015, cyclones Chapala and Megh made landfall over mainland Yemen and the island of Socotra. The International Charter on Space and Major Disasters was activated on 03 November 2015 by UNITAR-UNOSAT on behalf of UNOCHA. UNITAR-UNOSAT and the NASA Earth Observatory have since released several satellite image derived map products. Using satellite imagery acquired 04 November 2015, UNITAR-UNOSAT identified roughly 35 kilometers of roads likely affected by mud, debris, and occasional standing water within and around the city of Mukalla in Hadramaut Governorate. UNITAR-UNOSAT analysis of 05 November 2015 satellite imagery revealed a total of 150 affected structures in Jilah village, Shabwah Governorate. Approximately 58 of these structures were destroyed, 57 severely damaged, and 35 moderately damaged. Aggregated satellite data from early November 2015 was also used by UNITAR-UNOSAT to identify precipitation accumulation in Yemen and Somalia. The NASA Earth Observatory captured satellite imagery of Chapala on 02 November 2015 and Megh on 09 November 2015. As of 02 November 2015, Chapala was moving over the Gulf of Aden with maximum sustained winds of 195 kilometers per hour, equivalent to a Category 3 hurricane. On 09 November 2015, Megh could be seen drifting over the Gulf of Aden between Yemen and Somalia with maximum sustained winds of 140 kilometers per hour. As of 10 November 2015, Megh had made landfall over a mountainous region of Yemen roughly 70 kilometers east of Aden and weakened substantially. Map products and data are available for download in various formats on the websites below.

Sources: International Charter on Space and Major Disasters, UNITAR-UNOSAT, NASA Earth Observatory

Links: <https://www.disasterscharter.org/web/guest/-/cyclone-in-yemen>

<http://www.unitar.org/unosat/maps/YEM>

<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=86915&eocn=home&eoci=nh>

[http://earthobservatory.nasa.gov/IOTD/view.php?id=86951&eocn=home&eoci=iotd\\_image](http://earthobservatory.nasa.gov/IOTD/view.php?id=86951&eocn=home&eoci=iotd_image)

*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@qdacs.org](mailto:maps@qdacs.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.*