**UPDATE: FLOOD WATERS OVER PHNOM PENH, CAMBODIA**

Analysis with Landsat-8 Data Acquired 24 October 2013, TerraSAR-X Data Acquired 23 October 2013 & DMC Data Acquired 01 February 2013

This map illustrates a time series analysis of satellite-detected areas of flood waters and flood affected land around Phnom Penh, Cambodia using Landsat-8 data acquired 24 October 2013 and Terra-SAR data acquired 23 October 2013. Seasonal floods have caused heavy flooding in the region. The arrival of Typhoon Nari increased the heavy rains resulting in flash floods. It is likely that flood waters have been systematically underestimated along highly vegetated areas along main river banks, and within built-up urban areas because of the special characteristics of the satellite data used. This analysis has not yet been validated in the field. Please send ground feedback to UNITAR/UNOSAT.

**FLOOD WATER EXTENT ANALYSIS**

*(Satellite-Based Classification)*

- **Possible Standing Flood Waters:**
  - TerraSAR-X: 23 October 2013
  - Pre-Crisis Water Extent: DMC: 01 February 2013

- **Probable Standing Flood Waters:**
  - Landsat-8: 24 October 2013

*(Satellite-Based Classification)*

**Cloud/Fog Obstruction**

- DMC: 24 October 2013

**Satellite Data (1): Landsat-8**
- Imagery Date: 24 October 2013
- Resolution: 30m
- Copyright: USGS
- Source: USGS

**Satellite Data (2): TerraSAR-X**
- Imagery Date: 23 October 2013
- Resolution: 10m
- Copyright: 2013 German Aerospace Center (DLR)
- Source: DLR

**Satellite Data (3): DMC**
- Imagery Date: 01 February 2013
- Resolution: 22m
- Copyright: (c) COPYRIGHT, DMC International Imaging Ltd. (DMC)
- Source: DMC International Imaging Ltd. (DMC)

Other Data: USGS, UNESCO, NASA, NGA

Analysis: UNITAR / UNOSAT

Production: UNITAR / UNOSAT

Analysis conducted with ArcGIS v10.1

Coordinate System: Zone utm48N

Projection: Transverse Mercator

Datum: WGS 1984

Units: Meter

The depiction and use of boundaries, geographic names and related data shown here are not warranted to be error-free nor do they imply official endorsement or acceptance by the United Nations. UNOSAT is a program of the United Nations Institute for Training and Research (UNITAR), providing satellite imagery and related geographic information, research and analysis to UN humanitarian and development agencies and their implementing partners.

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Disaster coverage by the International Charter 'Space and Major Disasters'. For more information on the Charter, which is about assisting the disaster relief organizations with multi-satellite data and information, visit [www.disasterscharter.org](http://www.disasterscharter.org)