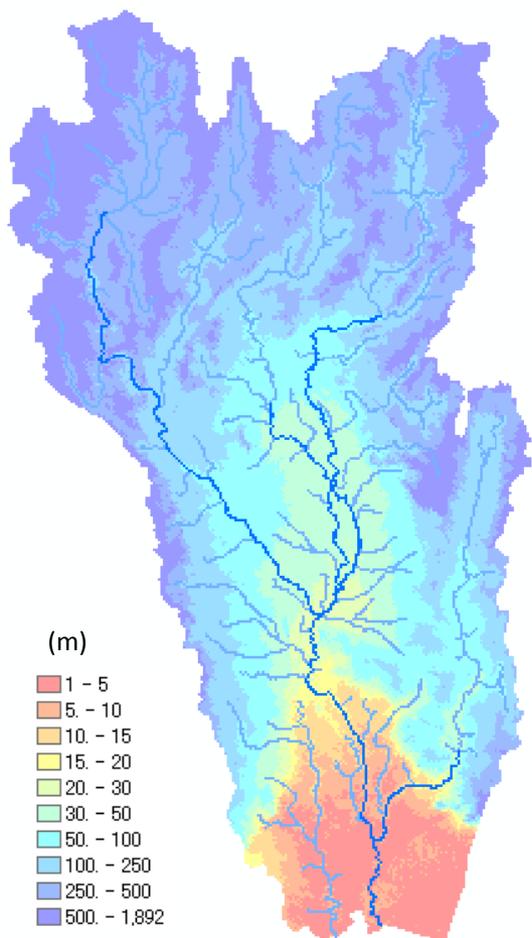


Rainfall-Runoff-Inundation Forecasting in the Chaophraya River

(ICHARM, as of Oct 23)



Topographic Data by HydroSHEDS

- Purpose: Understanding and predicting the flooding in Thailand at the entire Chao Phraya River Basin with RRI (Rainfall-Runoff-Inundation) Model.
- The simulation is conducted with globally available topography and satellite based rainfall data without parameter calibrations; therefore, more detailed analysis is necessary by including effects of reservoirs, tides, embankment, etc.

Simulation Domain : 163,293 km²

Simulation Period :

2011/07/01 0:00 (UTC) – 2011/11/30 0:00 (UTC)

Input Rainfall:

✓ 2011/07/01 0:00 (UTC) – 2011/10/21 0:00 (UTC)

3B42RT (Satellite Based Rainfall)

(Every 3 hours, Spatial Resolution: 0.25 deg)

✓ 2011/10/21 0:00 (UTC) – 2011/10/28 12:00 (UTC)

JMA- GSM Weekly Weather Forecasting

(Forecasting Lead Time: 8 days, Update every 12 hours)

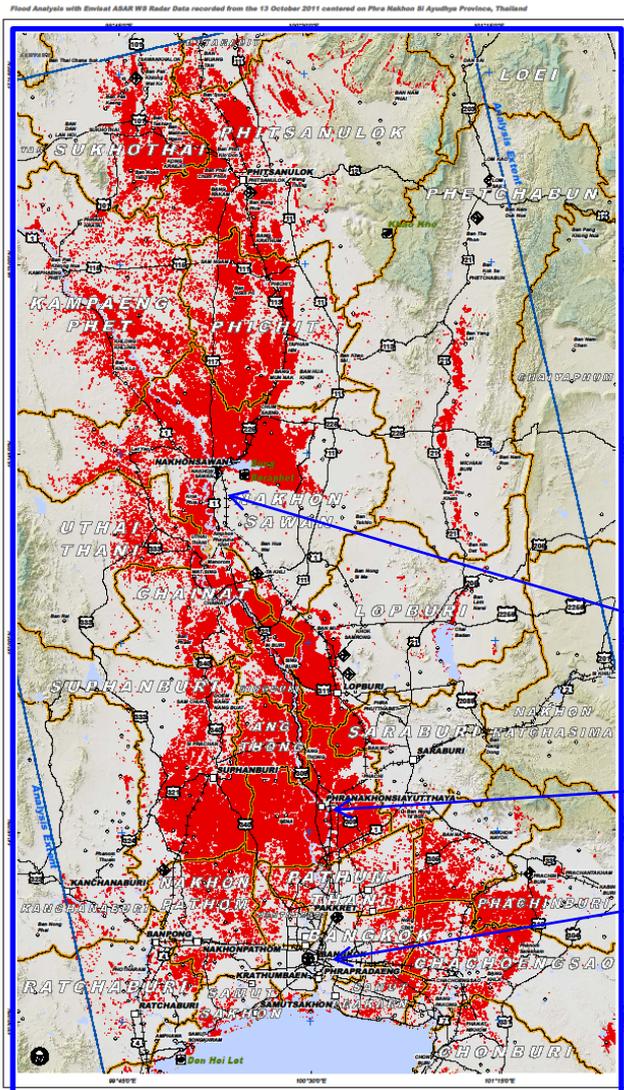
✓ 2011/10/28 12:00 (UTC) – 2011/11/30 0:00 (UTC)

(Last year's 3B42RT rainfall in the same period)

Inundation Extent by Satellite (as of Oct 13)

Simulated Water Depths on Oct 13

UPDATE2: OVERVIEW OF FLOOD WATERS OVER CENTRAL PROVINCES, THAILAND



Tropical Cyclone & Flooding

Production Date: 13/10/2011
 Version 4.0
 Grid Number: FL-2011-00135-THA

This map presents the standing flood waters over the affected Central Provinces of Thailand based on analysis of satellite data recorded 13 October 2011. A preliminary analysis shows extensive flooding over the provinces of Phra Nakhon Si Ayutthaya, Nakhon Sawan, Chaiyaphum, Pathum Thani, Nakhon Pathom, Ang Thong, Lopburi, Singburi and Suphanburi. This analysis has not yet been validated in the field. Please send ground feedback to UNSTAR/UNOSAT.

geopictures

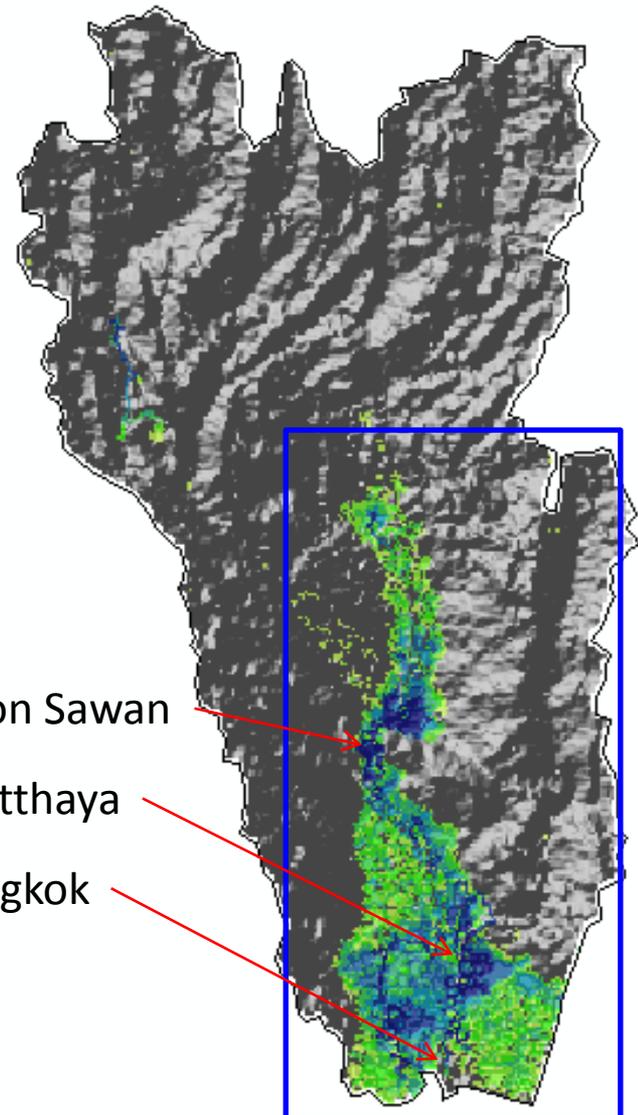
Satellite Data (1): Evisat ASAR WS-WH
 Images Date: 13 October 2011
 Resolution: 125 m
 Source: European Space Agency
 Processor: geopictures/ASAT
 Settlement Data: GADM/INDA
 Road Data: EDR
 Other Data: OCHA, USGS
 Analysis: UNSTAR / UNOSAT
 Production: UNSTAR / UNOSAT
 Analysis conducted with ArcGIS v10
 This work by UNSTAR/UNOSAT is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Map Scale for A3-1:1,250,000

Coordinate System:
 WGS 1984 UTM Zone 47N
 Projection: Transverse Mercator
 Datum: WGS 1984
 False Easting: 500,000.0000
 False Northing: 0.0000
 Central Meridian: 102.0000
 Scale Factor: 0.9999
 Latitude of Origin: 0.0000

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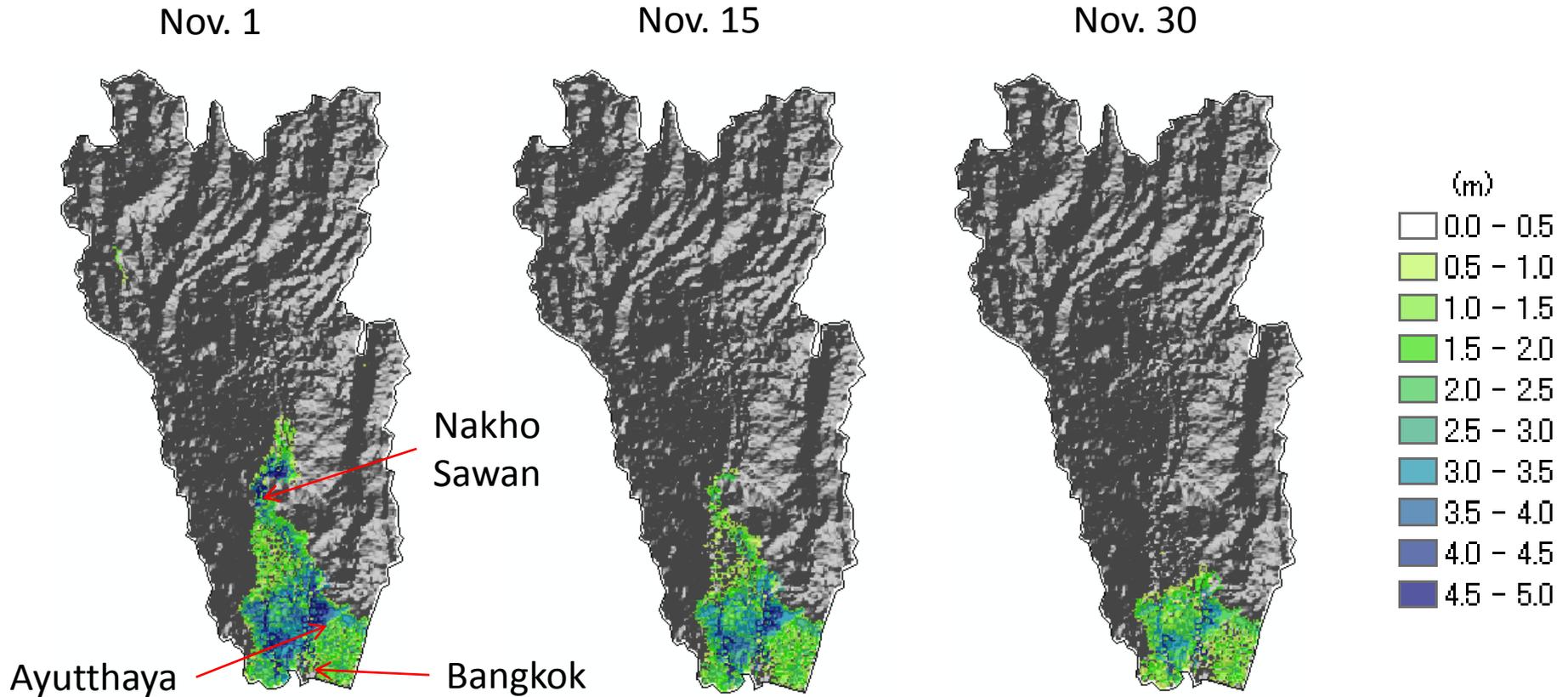
Nakhon Sawan

Ayutthaya

Bangkok

- The simulated inundation extent roughly agrees with the remote sensing image
- Large degree of uncertainty in the simulation in Bangkok due to no tidal effect consideration

Forecasted Inundation Depths



*The images are based on the simulation results from the RRI model by ICHARM (The inundation depth is simulated based on the rainfall during Oct. 28-Nov.30 in 2011 estimated by using the actual rainfall during the same period in 2010).

*The simulation is not capable of highly accurate reproduction of the inundation, especially, around Bangkok located in the lower Chaophraya River since the effects of dams, levees and estuary tide levels are not taken into consideration.

*The topographic map was created by ICHARM based on HydroSHEDS (USGS).

*There is serious concern for further expansion of the inundation towards Sunday, 30 October, when the next spring tide is expected.