Preliminary Analysis of Vientiane Capital City & Nam Ngum Dam, LAO PDR, using radar satellite data acquired on 22 and 26 August 2018.
UNITAR – UNOSAT has performed a rapid satellite based flood extraction to illustrate the situation in Vientiane Capital City for the following AOIs.

Figure 1: Main AOI focused on Vientiane Capital City and above it, the power reservoir basin (Nam Ngum Dam).

Figure 2: Subsets within the main AOI, focused on potential floods along the Nam Ngum River and the Mekong River.
This overview illustrates the Sentinel-1 detected water situation as of 22 and 26 of August 2018.

There are probably floods affecting the settlements from this region.

There are not perceptible changes observed in the vicinity of the power reservoir basin and the Nam Ngum Dam.

Figure 3: Water conditions as of 22 and 26 of August 2018, across the main AOI, permanent waters not included.
Sentinel-1 imagery on Nam Ngum Dam, Vientiane (LAO PDR) - Situation as of 22 and 26 August 2018

Figure 4: Sentinel-1 image acquired on 22 of August 2018.

Figure 5: Sentinel-1 image acquired on 26 of August 2018.

Disclaimer: these rapid analysis require further processing to remove few inaccuracies, mostly on mountainous areas.
Satellite detected waters focused on Nam Ngum Dam, Vientiane (LAO PDR) - Situation as of 22 and 26 August 2018

Figure 6: Permanent water on Nam Ngum Dam, OSM.

Figure 7: Extracted water on Nam Ngum Dam, as of 22 August 2018, Sentinel-1.

Figure 8: Extracted water in the Nam Ngum Dam area, as of 26 August 2018, Sentinel-1.

Figure 9: Satellite detected waters as of 22 and 26 of August 2018 (Sentinel-1), permanent water included.

Legend
- Flood extent as of 22 August 2018
- Flood extent as of 26 August 2018
- Permanent water
- Dam
- Settlement
- AOI
- Province
- District

Disclaimer: these rapid analysis require further processing to remove few inaccuracies, mostly on mountainous areas.
AOI 1 on Vientiane Capital City, along Nam Ngum River (LAO PDR) - Situation as of 22 August 2018

Figure 10: AOI 1, Potential floods along the Nam Ngum River, Sentinel-1 image acquired on 22 August 2018.

Disclaimer: these rapid analysis require further processing to remove few inaccuracies, mostly on mountainous areas.
Figure 11: AOI 1, Potential floods along the Nam Ngum River, Sentinel-1 image acquired on 26 of August 2018.

Disclaimer: these rapid analysis require further processing to remove few inaccuracies, mostly on mountainous areas.
Figure 12: AOI 1, Satellite detected water along the Nam Ngum River, from Sentinel-1 images acquired on 22 and 26 of August 2018.

Disclaimer: these rapid analysis require further processing to remove few inaccuracies, mostly on mountainous areas.
Figure 13: AOI 1, Potential floods along the Nam Ngum River, Sentinel-1 image acquired on 22 August 2018.

Disclaimer: these rapid analysis require further processing to remove few inaccuracies, mostly on mountainous areas.
AOI 2 on Vientiane Capital City, along Mekong River (LAO PDR) - Situation as of 26 August 2018

Figure 14: AOI 1, Potential floods along the Nam Ngum River, Sentinel-1 image acquired on 26 of August 2018.

Disclaimer: these rapid analysis require further processing to remove few inaccuracies, mostly on mountainous areas.
AOI 2 on Vientiane Capital City, along Megenk River (LAO PDR) - Situation as of 26 August 2018

Figure 15: AOI 2, Satellite detected water along the Nam Ngum River, from Sentinel-1 images acquired on 22 and 26 of August 2018.

Disclaimer: these rapid analysis require further processing to remove few inaccuracies, mostly on mountainous areas.
No major floods were observed in the power reservoir basin area north of Vientiane Capital City,

According to the analysis from a Sentinel-1 image, some floods occurred when comparing images between the 22 and the 26 of August 2018 and potentially affecting the settlements along the Nam Ngum River,

Along the Mekong River, there is not a major evolution between the 22 to the 26 August 2018,

This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to UNITAR – UNOSAT.
UNITAR Operational Satellite Application Programme (UNOSAT)
Contact information:
www.unitar.org/unosat
unosat@unitar.org
T +41 22 767 4020