6th Joint Project Team Meeting of
Sentinel Asia STEP -3 (JPTM 2018 Awaji), 1st & 2nd November, 2018

Disaster Risk Management in Lao PDR

Present by:
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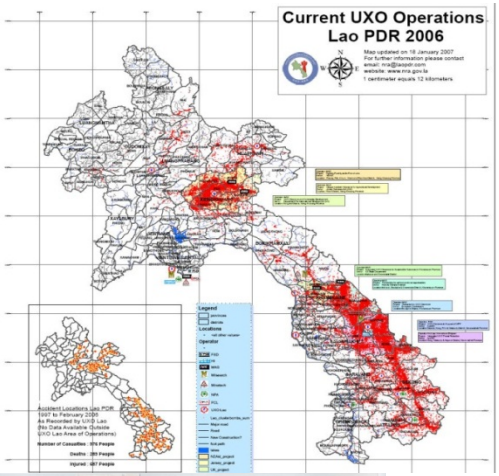
Secretariat of National Disaster Prevention and Control Committee, Lao PDR

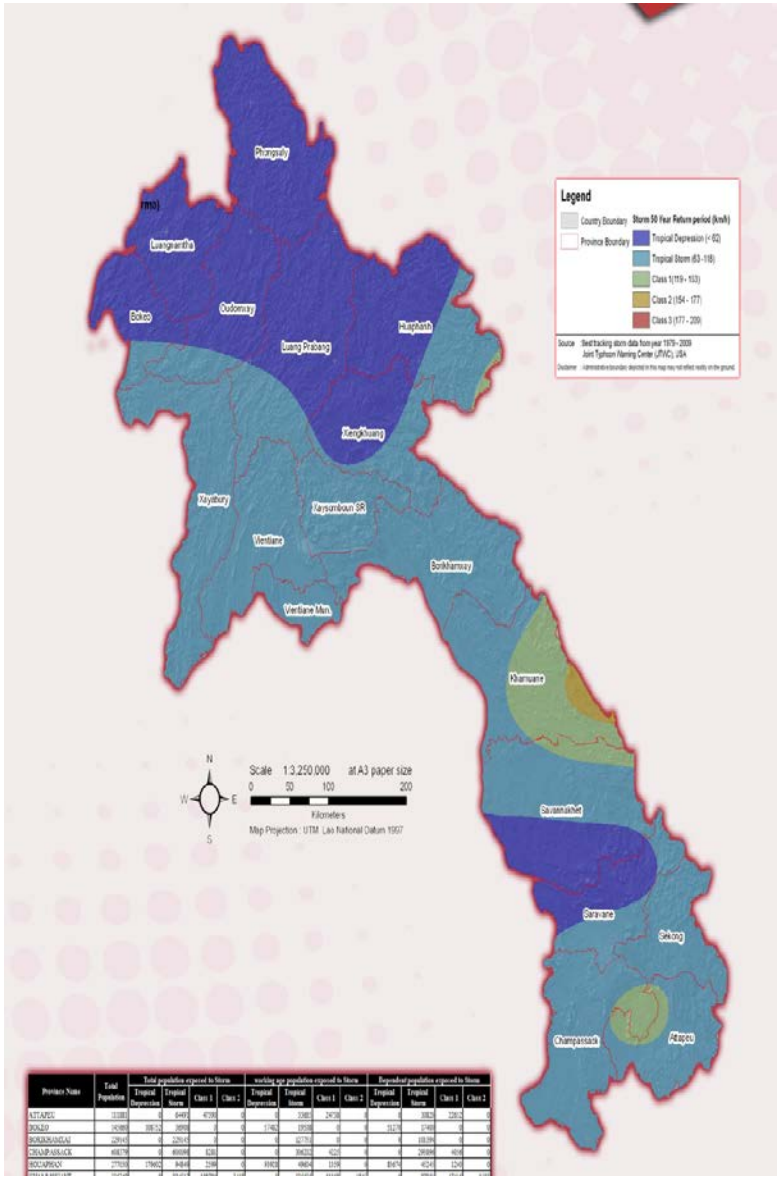
Country overview

- **Landlocked country**
- **Three geographical regions:** Northern, Central and Southern
- **Population of est 6,400,000 (2015)**
- **Area of 236,800 square Km**; 70% mountainous areas 30% lowland (Population concentrated & economically active areas)
- Elevation of meteorological stations: 73- >1000m msl.
- **80% of population depends on the subsistence farming**
- **MEKONG River Length:1.865 km** (flow through Laos southwards)
- **There are 13 major tributaries**

Hazards and Disaster in Lao PDR



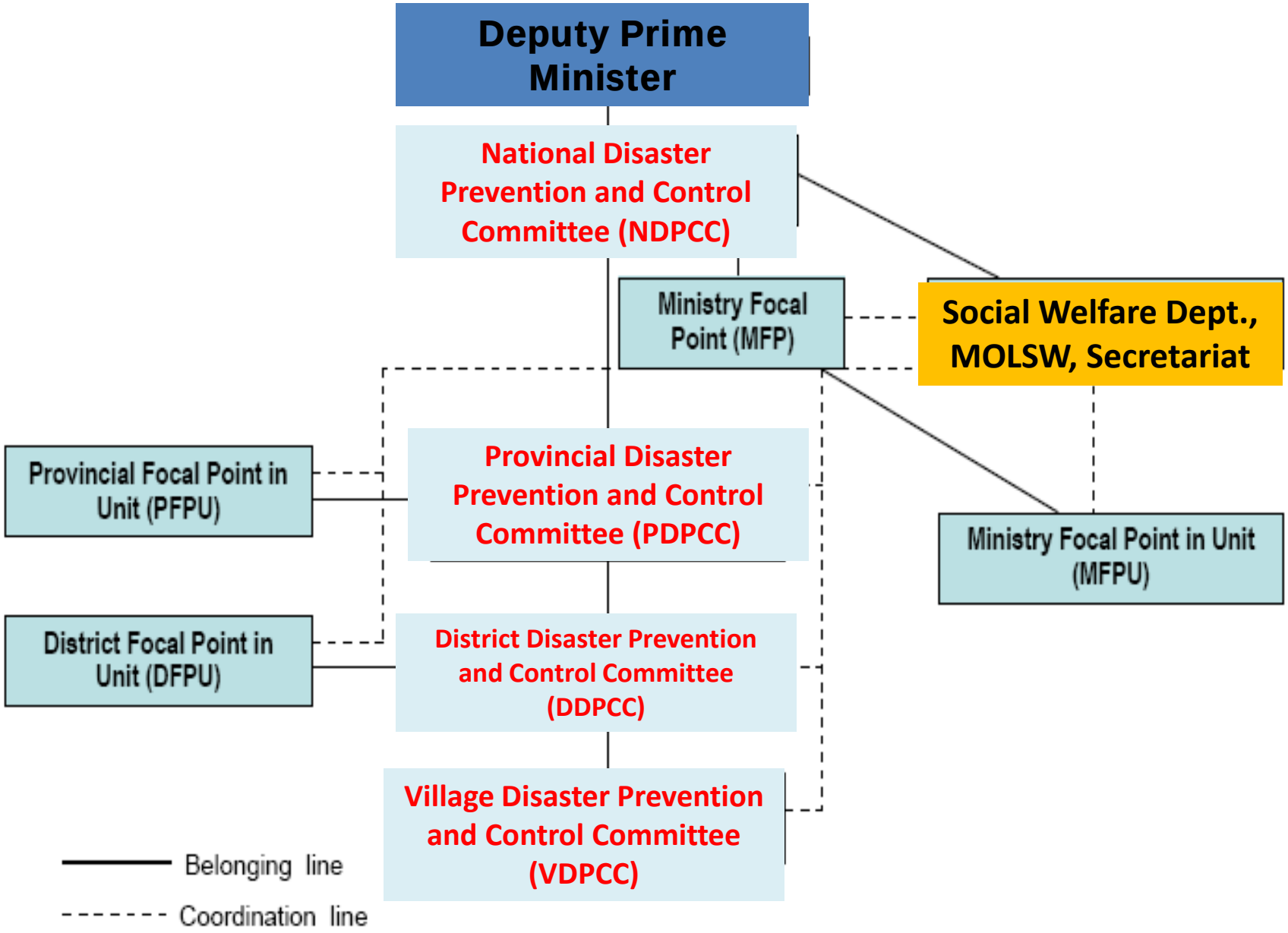
- Flood
- Drought
- Storm
- Earthquake
- Epidemic
- UXO
- Landslide



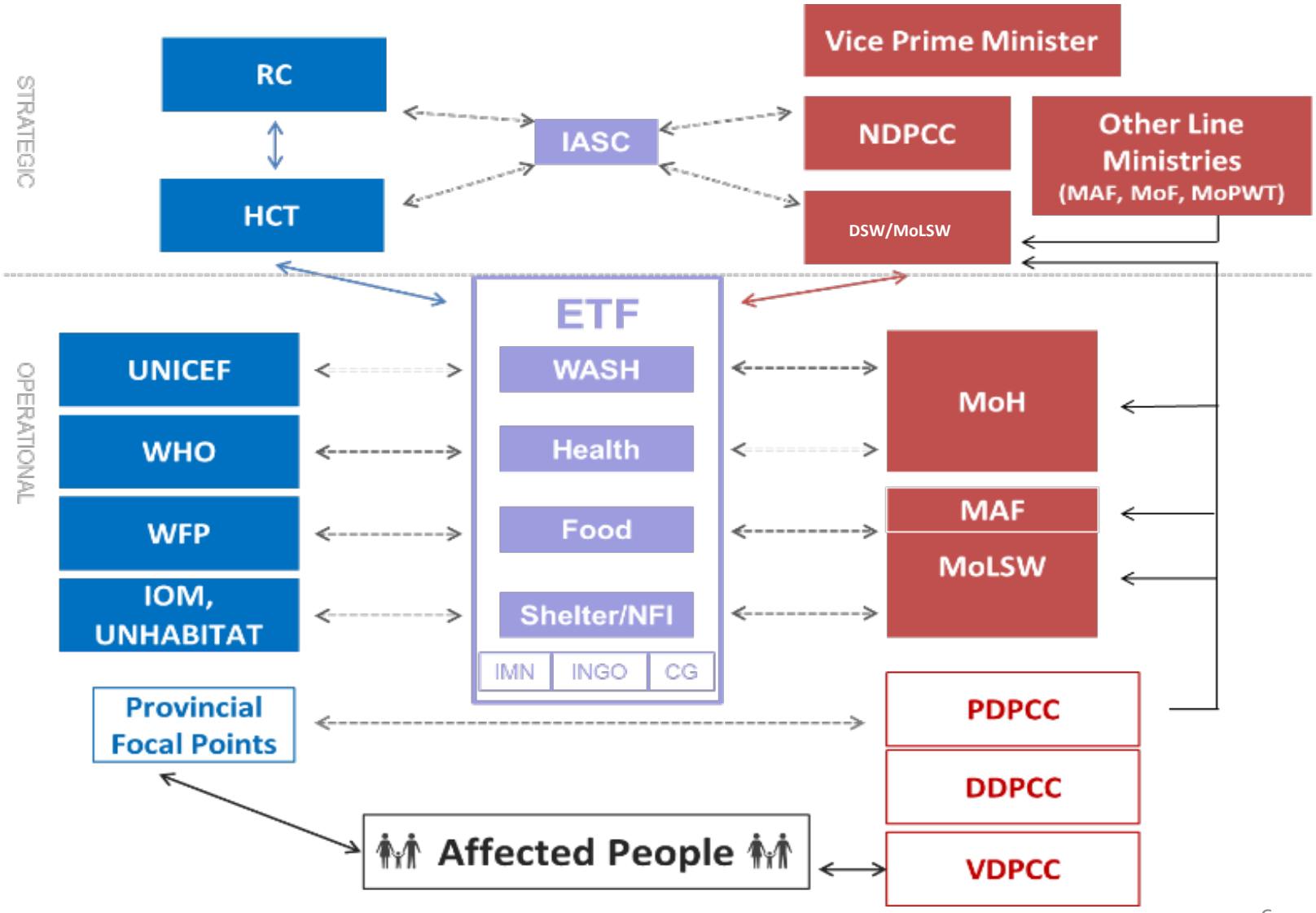
Disaster Risk Management Policy and Framework

- Prime Minister Decree on Establishment of National Disaster Prevention and Control Committee No. 75/PM, dated 28 February 2018
- National Disaster Risk Strategic Plan 2003-2020
- Vision 2030 and National Strategy for Social Economic Development 10 years (2016-2025)
- National Social Economic Development Plan 2016-2020

DPCC Diagram



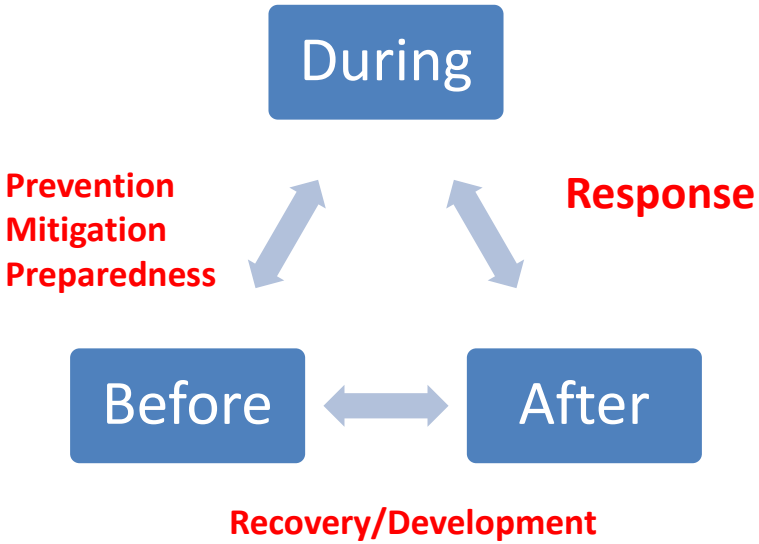
Institutional Arrangements



General concept of disaster risk management (DRM)

Disaster Risk Management –What and Who?

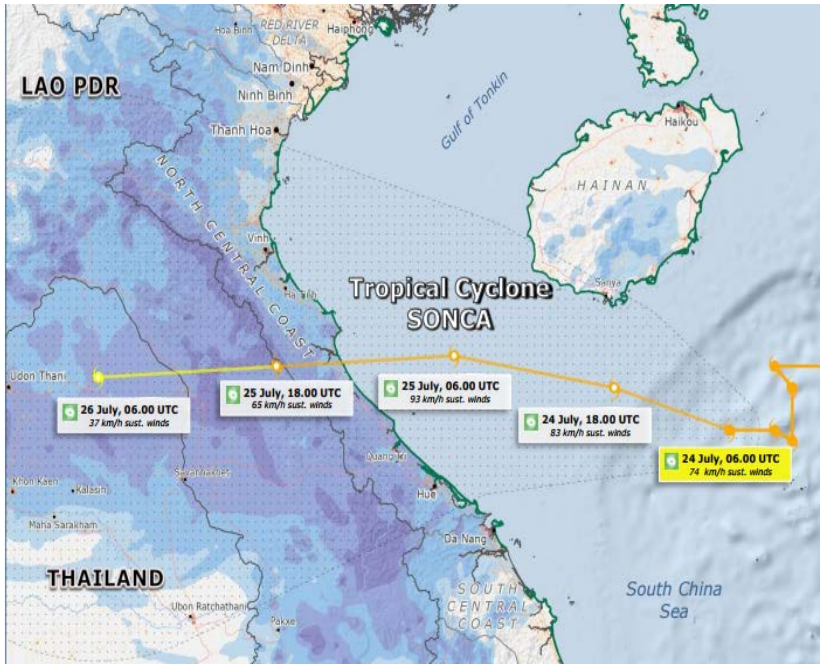
Disaster risk management includes administrative decisions and operational activities that involve:



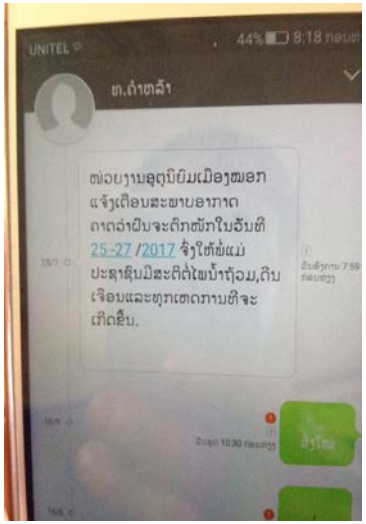
- **Non-governmental, community-based organizations and private sector play a vital role in the process**
- **Communities themselves are first responders**

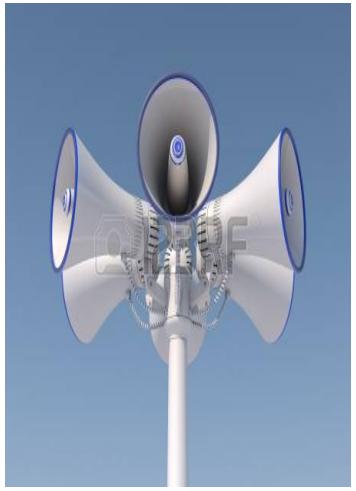
Typhoon Alert and Warning

Forecast track of Tropical Storm Maring as of September 12, 11 pm. Image courtesy of PAGASA



Early Warning Dissemination at community level

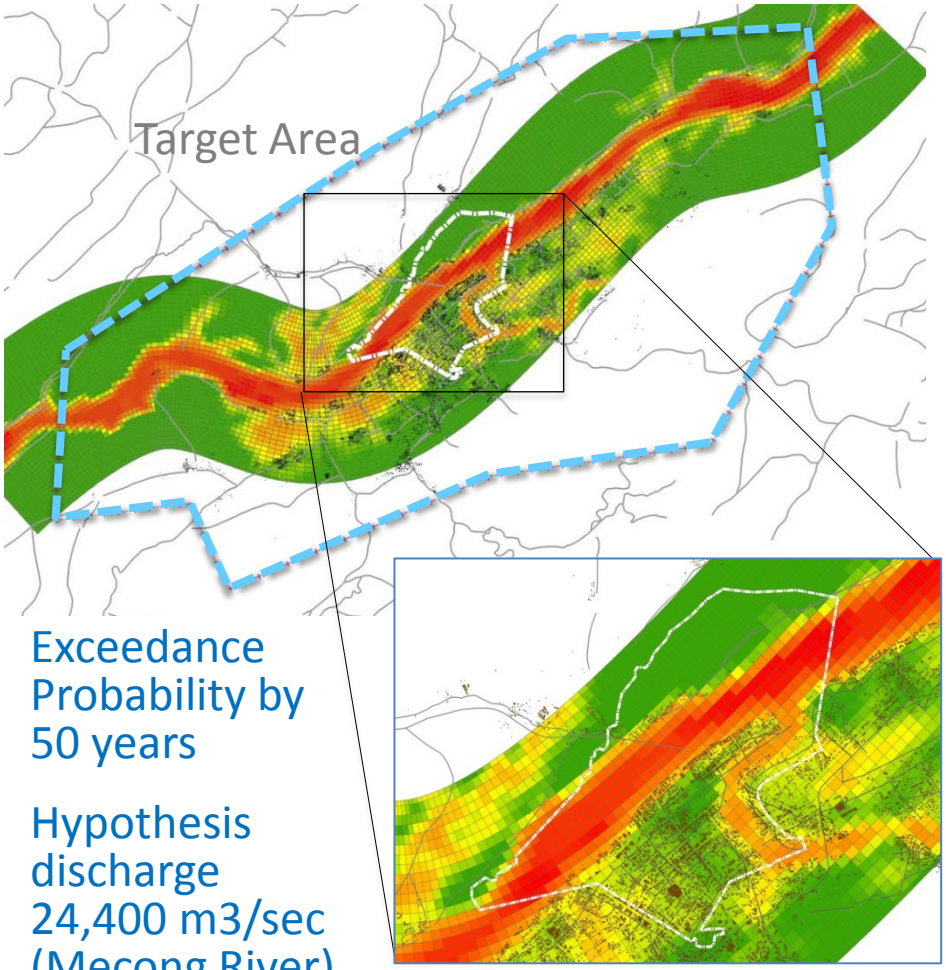




Lao National EOC

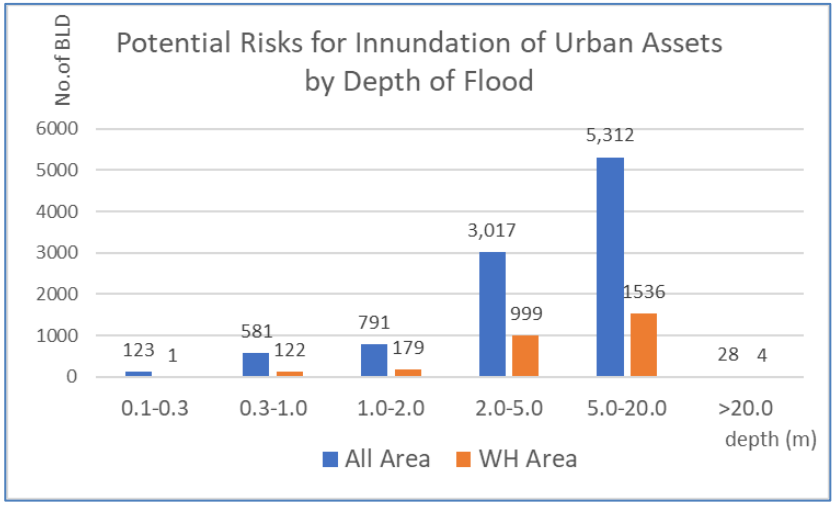
Sharing information through AHA Centre:
- SASOP
- Web EOC

1) Flood Probability Analysis



- Exceedance Probability by 50 years
- Hypothesis discharge 24,400 m3/sec (Mecong River)

2) Urban Assets in Flood Risk



- Total building in inundation risk: 9,646 buildings (85% out of total 11,309 blds.)
- Buidings in the World Heritage site: 2,840 buildings (29 % out of probable inundation buildings)

Project Title: Disaster risk reduction by integrating climate change projection into flood and landslide risk assessment (follow up project)

Sectoral Committee/Main Body:
ASEAN Committee on Disaster Management (ACDM)/ACDM Working Group on Prevention & Mitigation (WG P&M)
ASEAN Senior Officials on the Environment (ASOEN)/Working Group on Climate Change (AWGCC)
Project Area: All 10 ASEAN countries
Project Duration: 1.5+ years (20 months: September 2018 – April 2020)

Overall Objective	• Support and improve the DRR systems in the region and reduce the uncertainty of climate-related disasters
Objectives	• Establish a **monitoring system of DRR and CCA integration** progress in each ASEAN Member States; • Demonstrate the integration of climate projections into flood and landslide risk assessment and risk mapping through implementing **pilot projects in four selected river basins in two countries**; • Develop **guidelines and training modules** for integrating climate projections into flood and landslide risk assessment
Outputs	• Synthesized regional report on effective implementation of DRR and CCA Activity 1.1. Gather/Review the submitted Annual Progress Report of the Work Plan for DRR/CCA Integration from each AMS; synthesize Regional Report for WG P&M Activity 1.2 Gather Annual Progress Report from national focal points and seek confirmation of content Activity 1.3 Upload key progress to project website • Flood and landslide risk maps integrating future climate projections Activity 2.1 Select pilot project sites and agree on project framework, management structure and implementation plan at the Inception Seminar Activity 2.2 Conduct baseline survey on flood and landslide risk assessment and capacity needs assessment, field survey and on-site training in selected pilot project sites Activity 2.3 Conduct inception training and case visits showcasing best practice for flood and landslide risk management • Guidelines and training modules for integrating climate change risk into flood and landslide risk assessment Activity 3.1 Develop guidelines and training modules for flood and landslide risk assessment and risk mapping with incorporation of climate change projection Activity 3.2 Final Seminar to present project findings and discuss follow up project Activity 3.3 Disseminate all project findings/information and upload to project website

Current Disaster and Emergency Response in Lao PDR

Flood impacts FY 2018

- 18 provinces
- 124 districts
- 2.382 villages
- 126.736 households, 616.145 people, 58 dead, 32 missing, around 7.615 people were evacuated and living in the temporary shelters, and will continue 2-3 years until their new houses were constructed.

Social Sector

The damage at Vat Ban Hinlad (1), Sanamxay District, Attapeu Province. Photo credit: Souvanhnikone Phatanh

Damaged school building and equipment at Sanamxay, Attapue. Photo credit: Save the Children International staff

Ruins of affected houses in Sanamxay District. ©UN-HABITAT

Superheros of Laos – Children are stuying in a partially damaged building with hazardous structural damages in Savanakhet. Photo credit: Tara I.M., Plan International Australia.

Infrastructure Sector

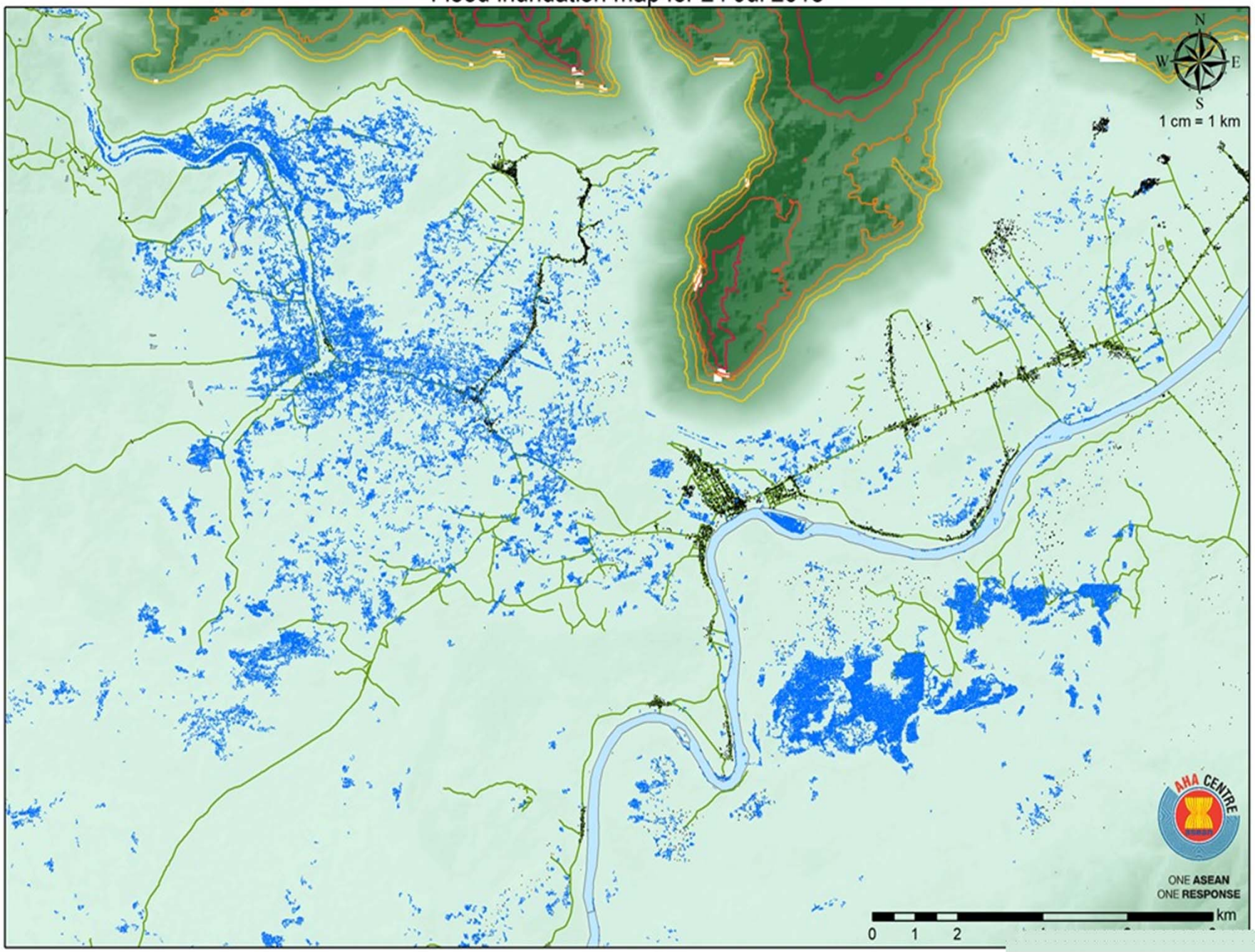
Example of damaged distribution grids

Bridge on R3 (Photo on 6 October 2018)

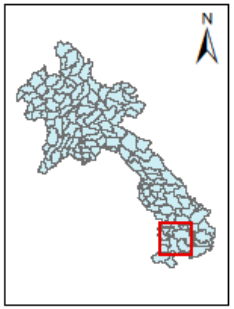
Nam Xeuang Bridge Damaged of approach slab (photo on 5 October 2018)

Damage on mainline distribution network of Nam Papa in Ngoy district of Luang Prabang province

Flood inundation map for 24 Jul 2018



Pre and Post dam break scenario in Attapau province (Lao PDR) using Sentinel-1 Satellite Data (25 July 2018)



Laos dam collapse

Hundreds are missing and Twenty-six people have been confirmed dead, KPL, the state news agency reported on Thursday morning. Officially, nearly 7,000 people have been rendered homeless after flash flooding inundated a half dozen villages in southernmost Attapeu province near the borders with Cambodia and Vietnam. Survivors were left clinging to trees, or stranded on a handful of rooftops peaking above the floodline.

Speaking on Wednesday afternoon, the prime minister, Thongloun Sisoulith, confirmed that 131 people were still missing and that there had been 26 reported fatalities so far.

The structure that collapsed is reportedly one of three "earth-filled" auxiliary dams supporting the hydropower project, a system of dams, reservoirs and channels along Mekong River tributaries.

http://time.com/5347992/laos-dam-collapse-missing-rescue-latest/ : Date of access 26/7/2018
https://www.theguardian.com/world/2018/jul/25/laos-dam-collapse-3000-need-rescue-death-toll-rises : Date of access 26/7/2018

Legend

Satellite Image : Sentinel-1
Pre - 17 July 2018
Post - 25 July 2018

Cities/Town
Road
River
Inundated area

26 July 2018 | FL-2018-0003-LAO | Version 1

Map Prepared by

IWMI International Water Management Institute

UN-SPIDER

CGIAR Research Program on Water, Land and Ecosystems

CGIAR Climate Change, Agriculture and Food Security

CCAFS

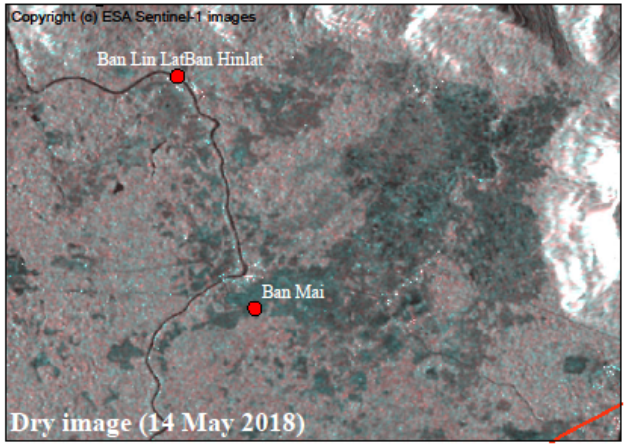
0 2 4 8 Km

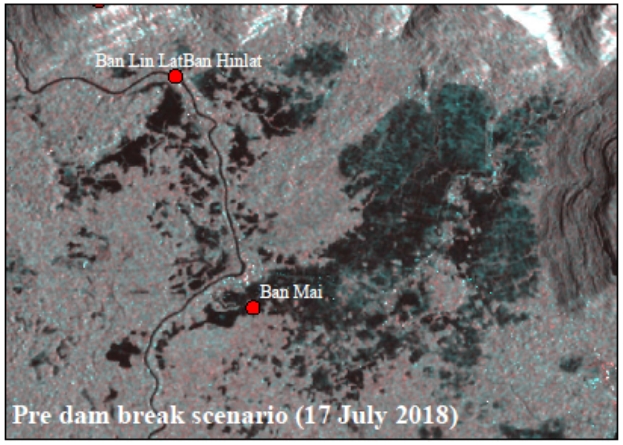
The analysis excluded permanent water bodies including reservoir, tanks and ponds and this reflects only the inundation extent. Please note the surface water extent mapped has not yet been validated in the field.

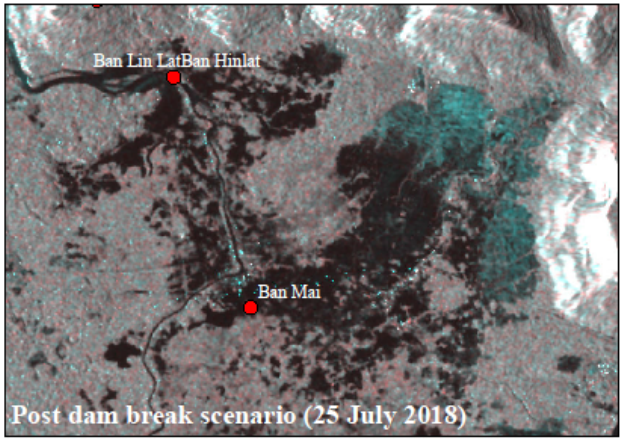
The depiction and use of boundaries, geographic names and related data shown in these maps are based on the sources they have been drawn from and quoted. These are neither error-free nor do they imply official endorsement or the position of

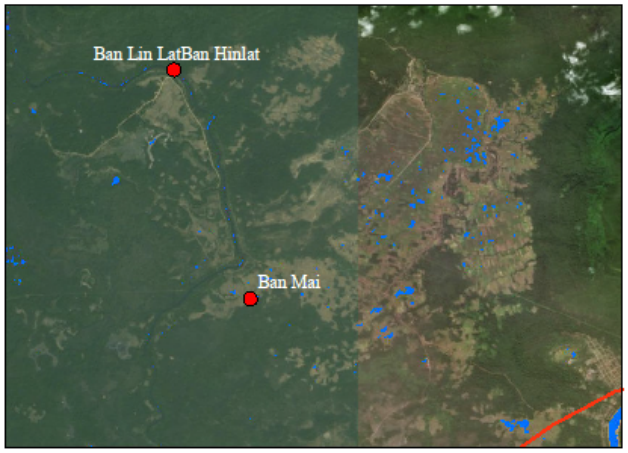
Data Provider

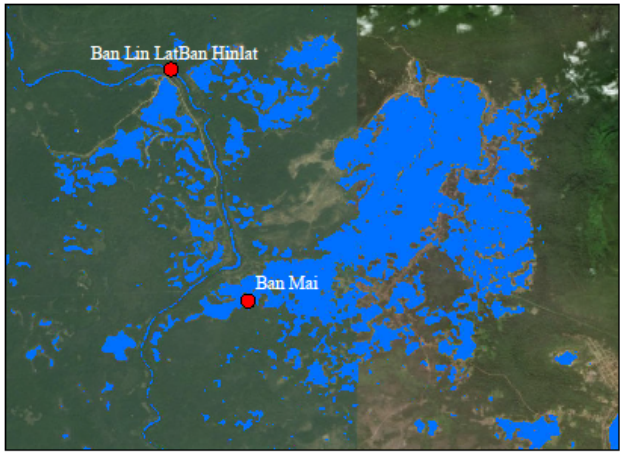
esa

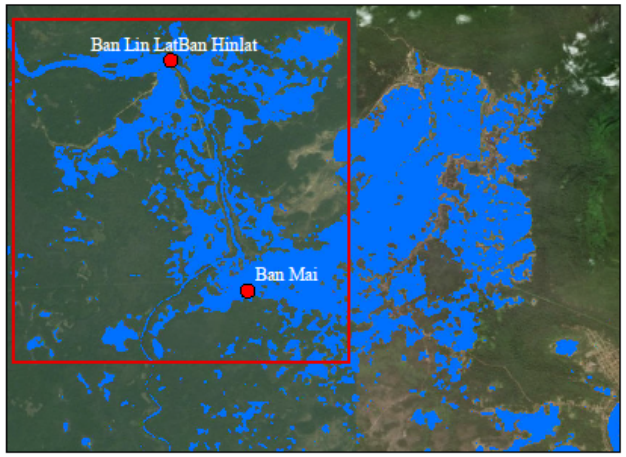




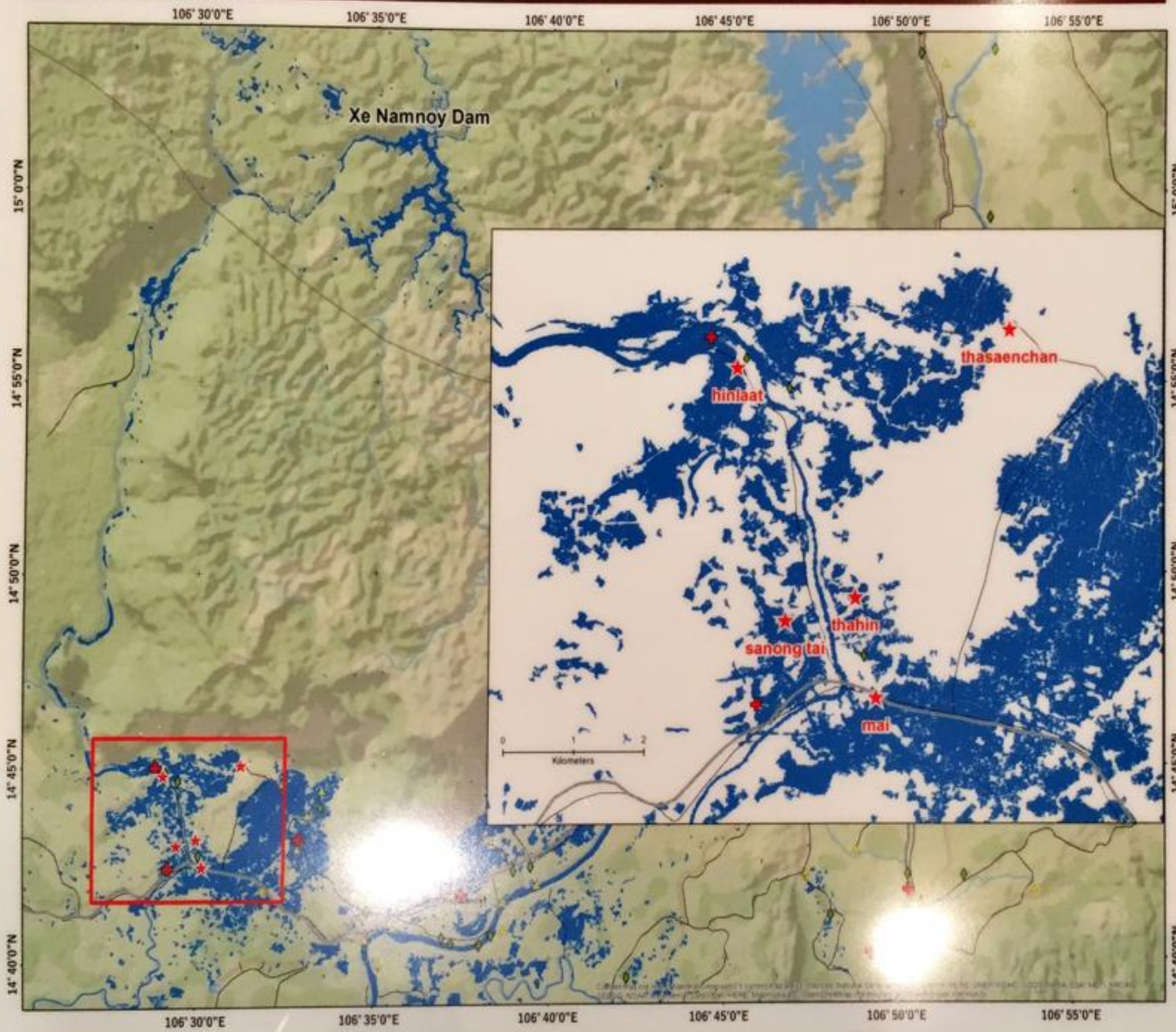








Flood Resulting from Xe Na[illegible]y Xe Pian Dam Collapse in Lao PD[illegible]



adpc | Sentinel Asia | JAXA

Legend

- Surface water on 25 July 2018
- Affected villages
- Village
- Health facilities
- Schools
- Primary road
- Secondary road

Description:

The map shows the water inundation areas caused by the collapsed dam, and flooded villages downstream the location of the dam (which 5 of them shown in RED have been confirmed by the relevant agency in Laos).

This map depicts the situation as of 25 July 2018 and will be updated whenever the newer data and information become available

0 2.5 5 10
Kilometers
Coordinate System : GCS WGS 84
Datum : WGS 84 Unit : Degree

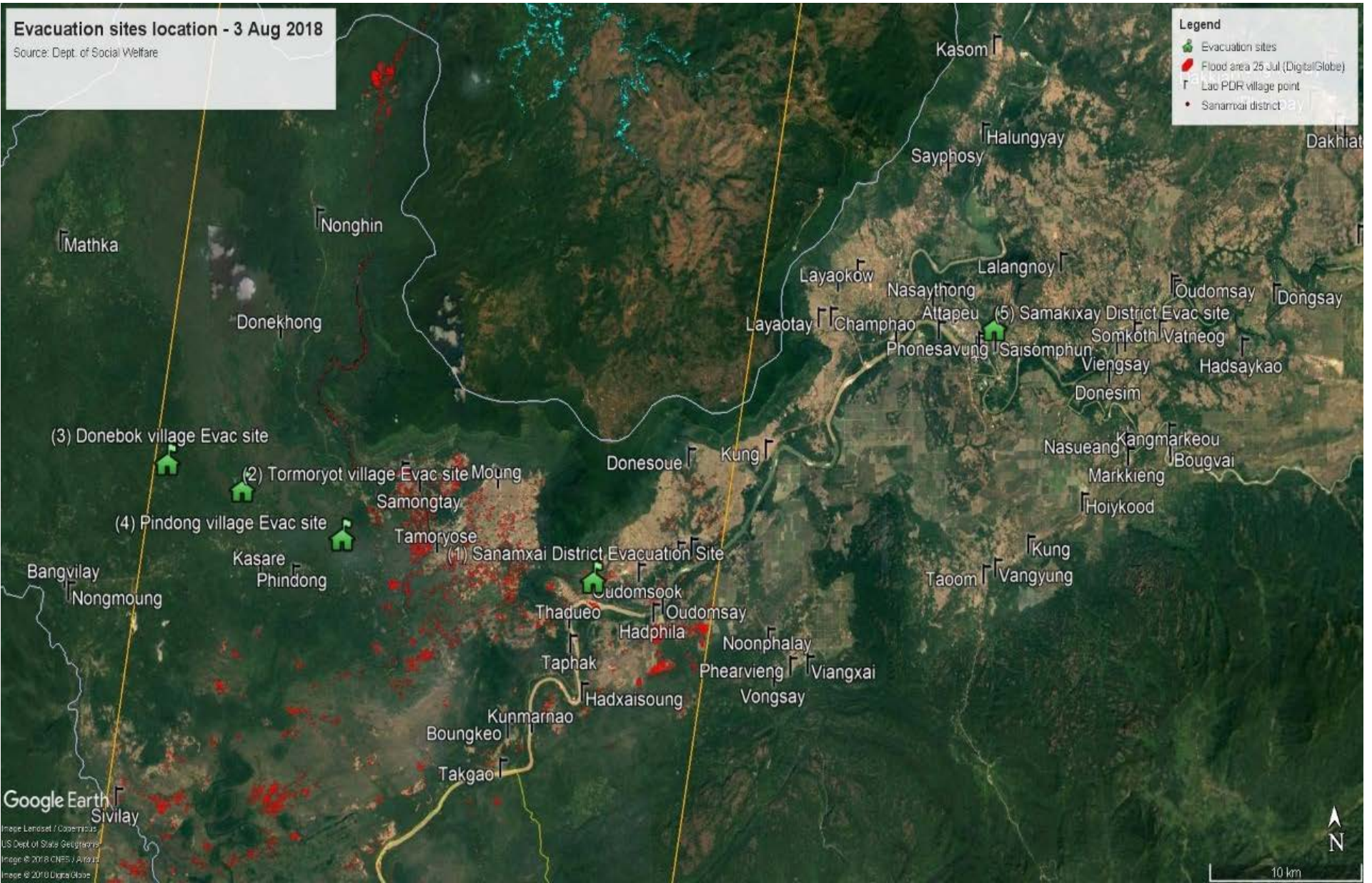
Source :
- Satellite data provider : JAXA
ALOS-2/PALSAR-2 25 July 2018, 16:23 UTC

Baseline data :
- National Risk Profile of Lao PDR, UNDP Laos, 2010

Acknowledgement:
Additional processing and analysis conducted by Asian Disaster Preparedness Center, ADPC

Map creation date : 26 July 2018

Camp location – Evacuation centre



Response taken by the Govt and Partners

- **Declared National Disaster Emergency (Sanamxay District)**
- **Ad-hoc Disaster Response Committee created**
- **President, Government leaders and concerned agencies in Ad-hoc, NDPCC visit and provide assistance to affected family and people**

Response taken by the Govt and Partners

- Social Welfare (Shelter, Warehouse Management, UXO Clearance)

Response taken by the Govt and Partners

- Ministry of National Defense (SAR, Transportation, Logistic)

Response taken by the Govt and Partners

- Health and Lao Red Cross (Latrine, Water, Health)

Response taken by the Govt and Partners

- Education (Child Friendly Spaces, Learning tools)
- Social Protection

Some Good Practices

- Quick action and led by the Government and political people
- Disaster Prevention and Control Committee at local and community are the first response and work very energetic - command post established
- Concerned sectors have work very active in the ground and well coordinated each other mainly SAR team from MoD, Medical mobile team, etc…
- Many countries (ASEAN, outside ASEAN and AHA), international organizations, UN agencies, donor agencies, private sector, CSO, individual, etc… give hands and donated
- Affected people are involved and strong participated in emergency response, ex: at emergency shelter

Conclusion

1. Build essential DRR capacities and actions to institutionalize them.
2. Improve risk and capacity assessment to better target DRR interventions and support rapid analysis and end-too-end early warning.
3. Consolidate fragmented disaster units at province / district levels.
4. Build support for local level risk management by province and national agencies, led by EOC/MLSW.

Arigato

khop chai lai lai !!!

Khob Jai Lai Lai
(Thank you)