



MEMBER REPORT *Lao PDR*

ESCAP/WMO Typhoon Committee
17th Integrated Workshop
(Video conferencing)
29-30 November 2022

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I. Overview of tropical cyclones which have affected/impacted Member's area since the last Committee Session

1. Meteorological Assessment (highlighting forecasting issues/impacts)

Four (4) tropical cyclones affecting Lao PDR from 1 January to 25 November 2022 (tracks as shown on figure 1): Tropical Storm MULAN (2207) in August, Tropical Storm MA-ON (2209) in August, Tropical Storm NORU (2216) in September and Tropical Storm SONCA (2219) in October.

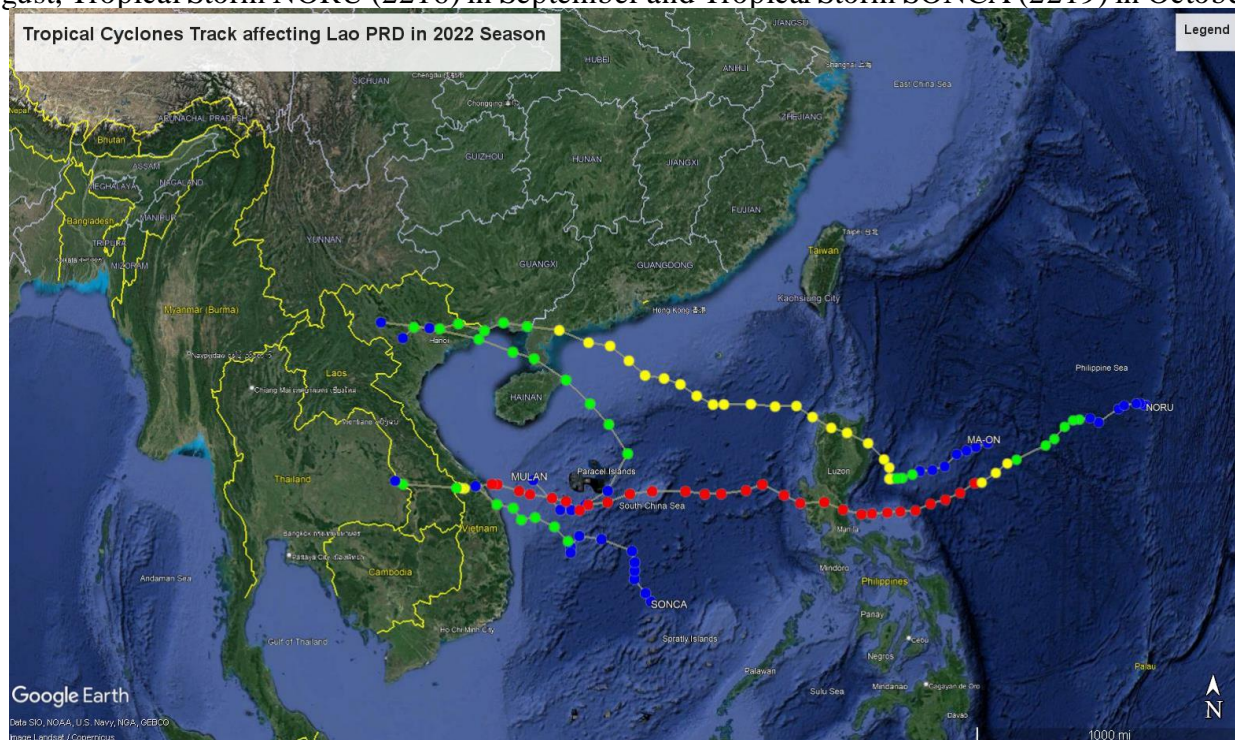


Figure 1: Tropical cyclones track affecting Lao PDR from 1 January to 25 November 2022

The track and intensity forecasts issued by Department of Meteorology and Hydrology for these above tropical storms are based on the Numerical Typhoon Prediction Website from RSMC Tokyo Typhoon Center, and the rainfall forecasts are based on Numerical Weather Prediction products from Severe Weather Forecasting Programme (SWFP) Southeast Asia/Regional Forecasting Support Center (RFSC)-Hanoi which including the NWP products from CMA, JMA, KMA, ECMWF, etc. The performance of tropical storm forecasts was generally satisfactory with the average errors falling within the potential track area (the probable area of tropical storm location with a probability above 70%).

1.1. Tropical Storm MULAN (2207)

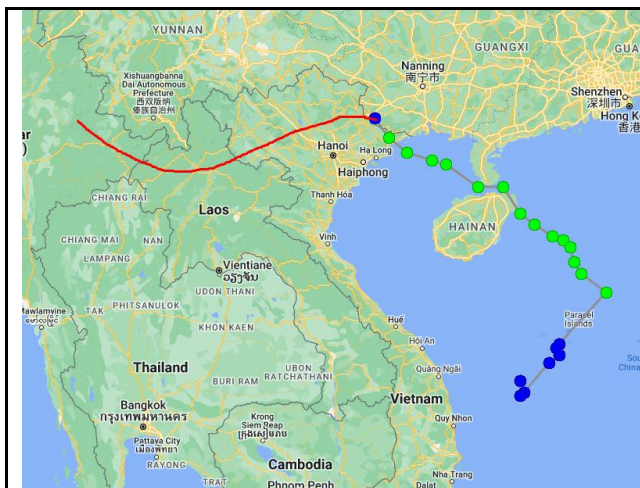
MULAN was the first tropical storm affecting Lao PDR in 2022. Mulan formed as a tropical depression over the central part of the South China Sea about 700 km south-southwest of Hong Kong in the small hours on 9 August. It moved north to north-northeastwards at first. Mulan intensified into a tropical storm in the afternoon and reached its peak intensity with an estimated maximum sustained wind of 65 km/h near its centre.



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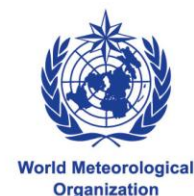
MULAN made landfall in northern part of Vietnam on 11 August then downgraded into tropical depression passed northern part of Lao PDR on 12 August 2022. During the movement of MULAN from South China Sea to northern part of Lao PDR, there were heavy rain with strong winds in some areas of northeastern, central and southern parts, resulted landslides, flash floods and flood in these areas.

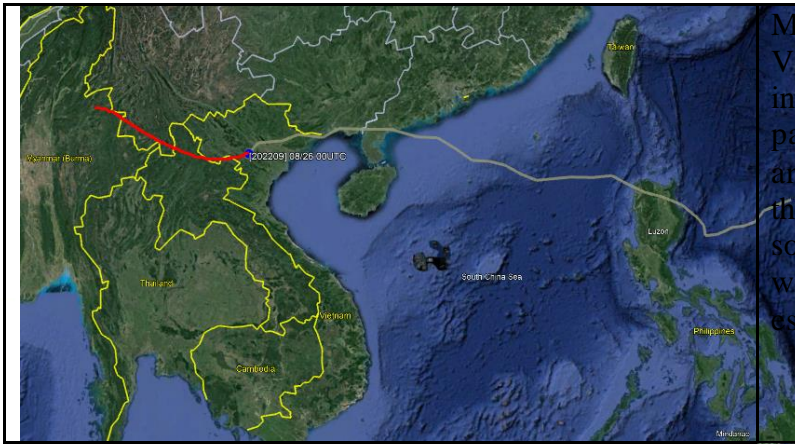
Fig 2: Tropical Storm MULAN track



1.2. Tropical Storm MA-ON (2209)

MA_ON was the second tropical storm affecting Lao PDR in 2022. Ma-on formed as a tropical depression over the western North Pacific about 730 km east-northeast of Manila on the afternoon of 21 August. It moved west-southwestwards and intensified gradually. Ma-on turned to track west-northwestwards on 22 August and developed into a severe tropical storm in the small hours on 23 August. It moved across the northern part of Luzon that day and entered the northern part of the South China Sea at night. Ma-on tracked west-northwestwards and moved rapidly across the northern part of the South China Sea towards the coast of western Guangdong the next day. Ma-on further developed into a typhoon that night, reaching its peak intensity with an estimated maximum sustained wind of 120 km/h near its centre.



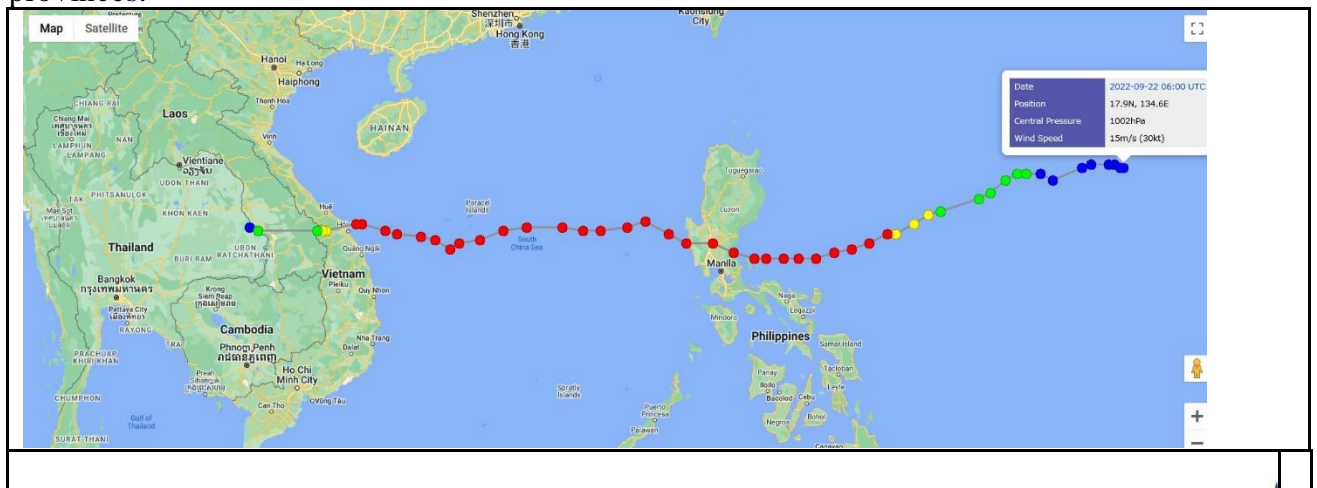


MA-ON made landfall at northern part of Vietnam on 26 August then downgraded into tropical depression and low pressure passed northern part of Lao PDR on 26 and 27 August respectively. As a result, there was heavy rain with strong winds in some areas of northern and central parts with landslides, flash flood and flood, especially in Oudomxay Province.



1.3. Tropical Storm NORU (2216)

NORU was the third tropical storm affecting Lao PDR in 2022. NORU formed as a tropical depression over the western North Pacific on 22 September 2022 then intensified to tropical storm and typhoon respectively swept through northern part of Philippines, continued to intensify to maximum of the typhoon (Super Typhoon) moving through the central South China Sea and up the coast of Vietnam on 27th September, weakening it as a tropical storm passed through the Sekong and Salavan provinces of Lao PDR on 28 September, then continued to weaken into tropical depression and low pressure over the Thailand. As a result, there was heavy rain with strong winds in southern part of Lao PDR caused floods in some areas of Salavanh, Sekong, Champasack and Attapeu provinces.



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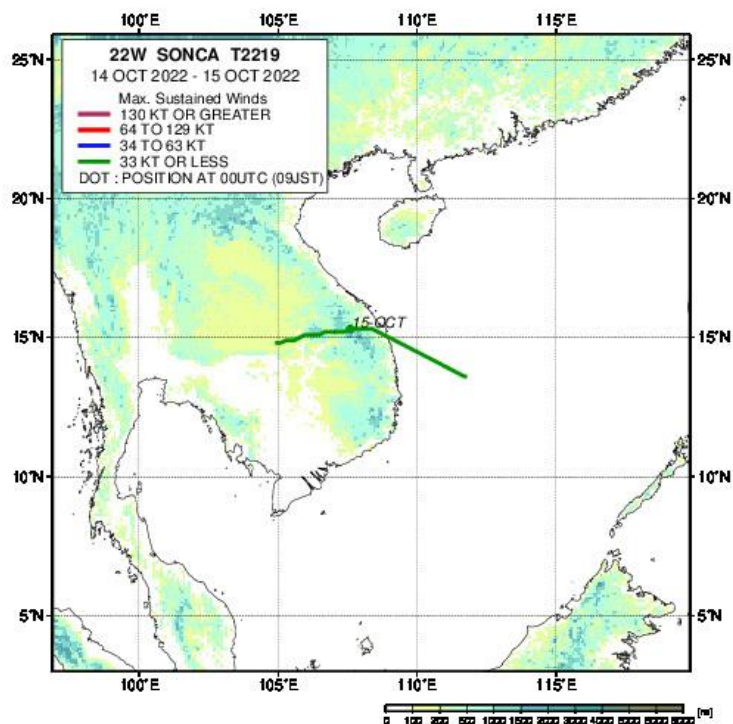


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1.4. Tropical Storm SONCA (2219)

SONCA was the fourth tropical storm affecting Lao PDR in 2022. SONCA formed as tropical Depression over the central South China Sea on 13 October 2022 then next day intensified to tropical storm and made landfall to Vietnam coast on 15 October, weakening into tropical depression and low pressure passed central and southern parts of Lao PDR on 16 October. During the passages of this tropical storm, heavy rain in some areas of southern provinces of Lao PDR.



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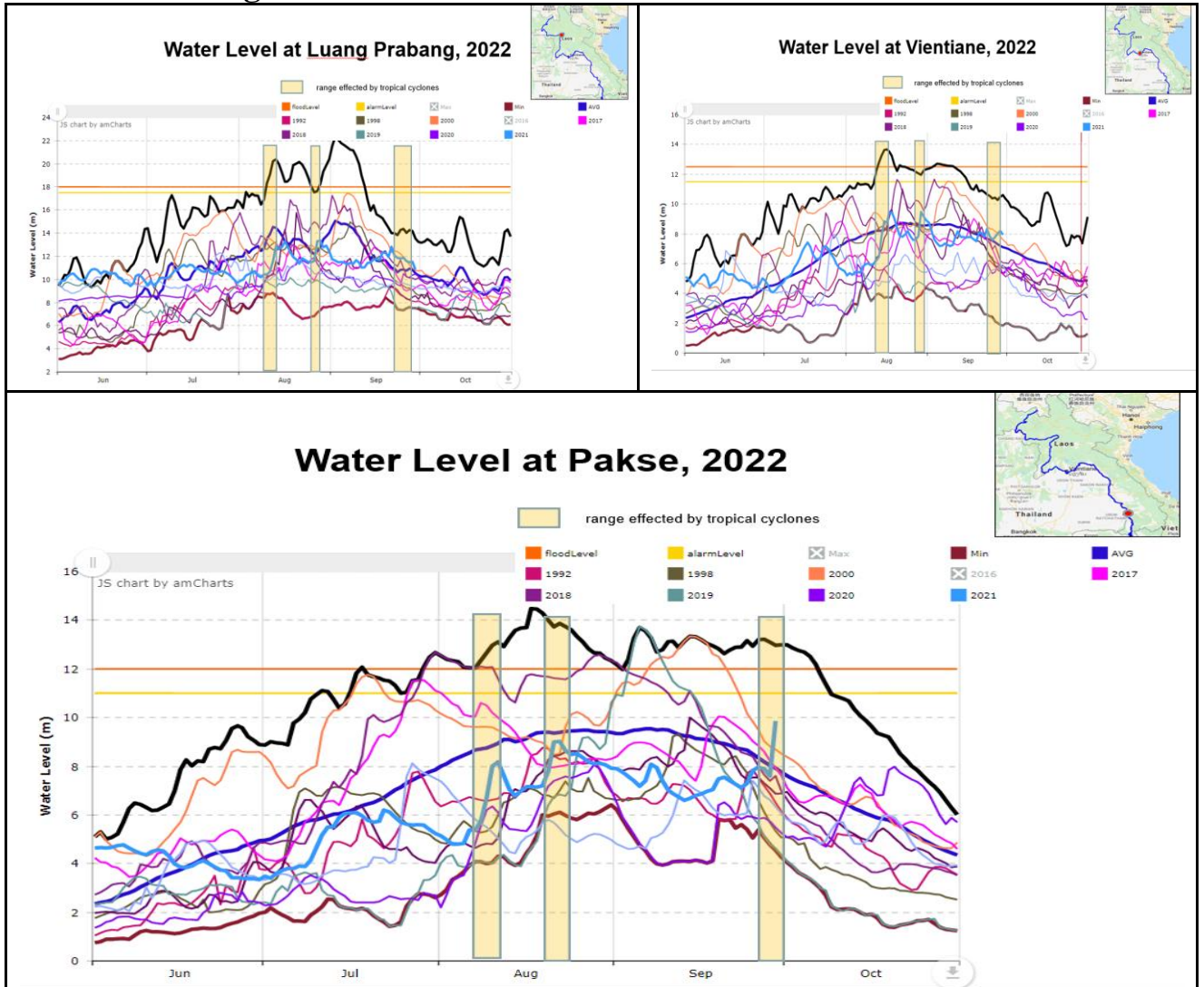


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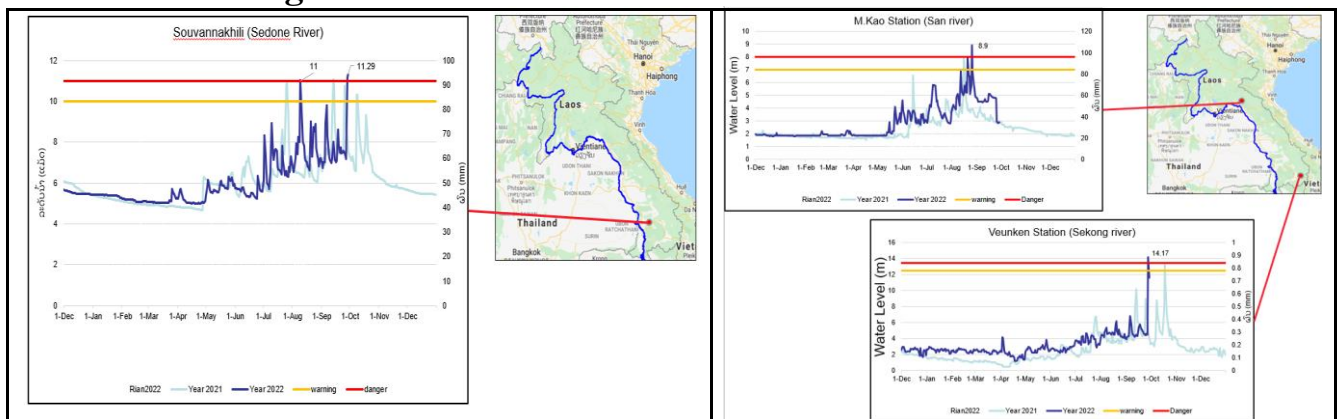
2. Hydrological Assessment (highlighting water-related issues/impact)

During the passages of 4 tropical storms over the Lao PDR, the Mekong River levels and its tributaries raised reaching to danger level in some areas:

2.1. Mekong River Level condition:



2.2. Mekong River's tributaries level condition



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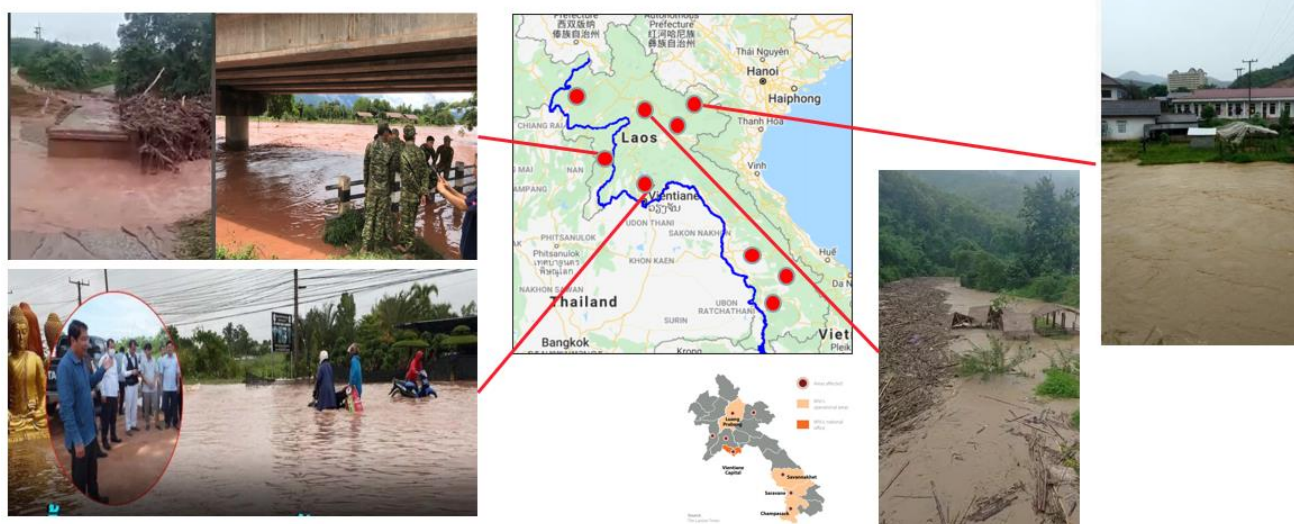
3. Socio-Economic Assessment (highlighting socio-economic and DRR issues/impacts)

3.1. The impact of MULAN

According to the National Disaster Management Organisation of Lao PDR, Tropical Storm Mulan passed through Lao PDR, and caused heavy rain followed by flooding on 6-18 August 2022 affecting 9 provinces (Huaphan province, Savannakhet province, Saravanh province, Luangprabang province, Xaiyabury province, Champasak province, Xiengkhuang province, Bokeo province, and Vientiane capital), 29 districts, 223 villages, 8.627 households, 40.506 people (woman 19.909), injuries 2 people, 540 houses were partially damages, 23 rice house flooded, damaged, 8.594,70 hectares of agricultures land was effected, 830 fishponds, 18.660 livestock and Poultry, 30 irrigations and 7.385 irrigation channel, 90 roads point damaged, 14 bridges damaged, 21 electricity polls, 11 schools, 1 community health center are damaged (Provincial of Disaster Management Committee continue collecting the damaged information)

Luang Prabang Province, Phonexay district - Flash flooding has affected some villages and small town which are at the level of the river bank. Some loss of animals have been recorded. - There is no impact in the communities of Phonexay Area Programme.

Savannakhet Province, Thapangthong district - 3 Villages under the AHAN Project were affected. 4 bridges on the village route were damaged by the flood, a temporary bridge has been constructed to support transportation. Villages details: • Huaymeuen village: 35 houses, 20 small lakes and fish ponds flooded. • Kouthee village (Koumkoutlumphan)- 15 houses, 01 temples, fish pond and some paddy areas has flooded. • Tha Salakham village - 13 houses and 01 guest house has flooded. - Rice field, fish pond and cotton field areas were flooded in Nonjan village, Nongkan village, Nahua Khuay village, Phousengkham village, Mai Phosi village (Koummai Se) and Thongpang village.



3.2. The impact of MA-ON

Thousands of people in the province of Oudomxay are experiencing flash floods caused by heavy rains and the effect of tropical storm Ma-on. Two death was reported and 25 villages have been affected by severe flooding in Oudomxay province. Flash Flood and urban Flood also occurred in Huaphan province and Vientiane Capital



3.3. The impact of NORU

Thousands of people in the southern provinces have been affected by flooding as Tropical Storm Noru during 27-28 September 2022. Flood, Flash Flood, landslides occurred in Salavanh Province, Sekong Provinces, Champasak Province and Attapue Province in the Southern Regions of Lao PDR



4. Regional Cooperation (highlighting regional cooperation and related activities)



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