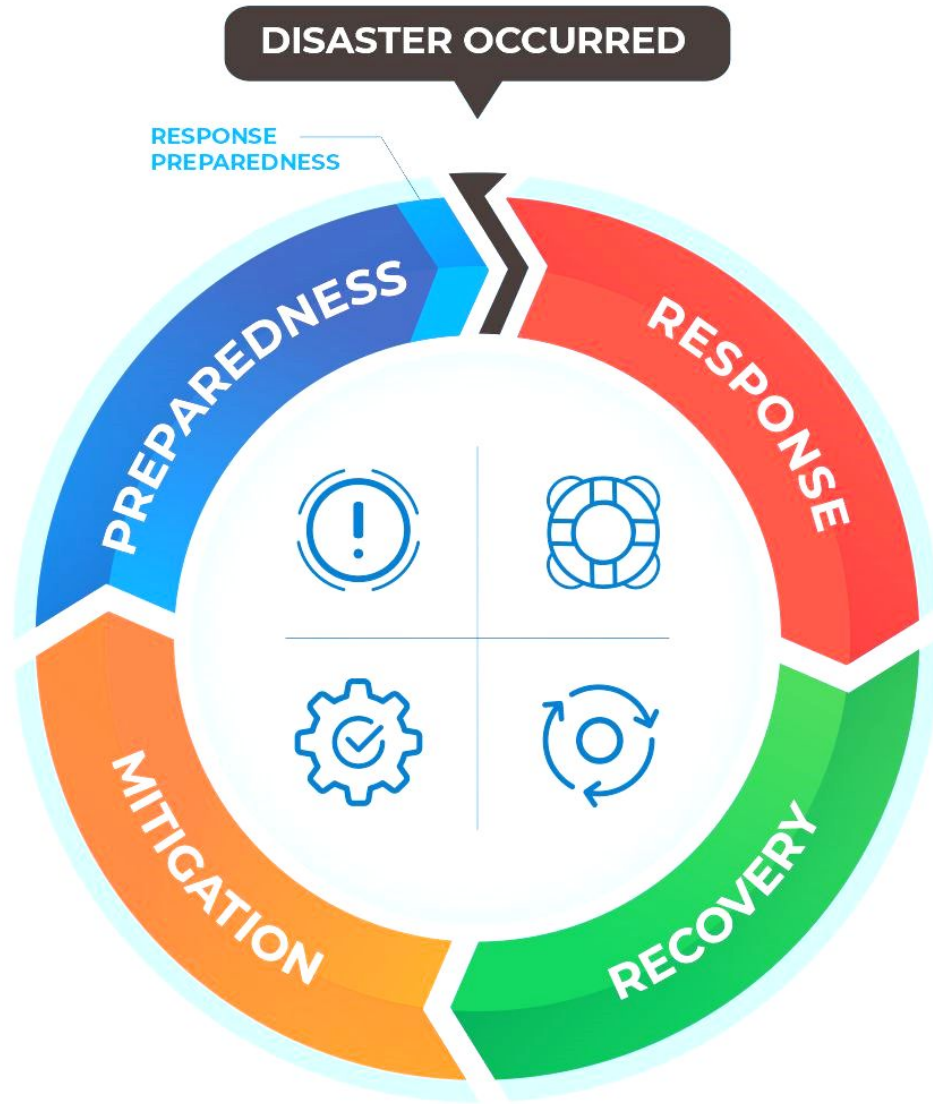


A satellite-style image of the Earth showing Southeast Asia, including the Malay Peninsula, Sumatra, Java, and the Indonesian archipelago. The land is shown in shades of green and brown, while the oceans are a deep blue. The Earth's curvature is visible on the right side.

Good Practices from Southeast Asia for supporting Sentinel Asia Step-3

Peeranan Towashiraporn, ADPC

2023 Sentinel Asia Joint Project Team Meeting
Jakarta, Indonesia



Sentinel Asia's Step-3 is expected to not only use satellite observations for emergency **response** but also to cover the entire disaster management cycle including **mitigation, preparedness** and **recovery** phase after a disaster.

Satellite Data for Disaster Preparedness

SERVIR Southeast Asia: A REGIONAL GEOSPATIAL HUB

A partnership between USAID, NASA and the Asian Disaster Preparedness Center (ADPC)



WEATHER AND CLIMATE



WATER RESOURCES AND DISASTERS

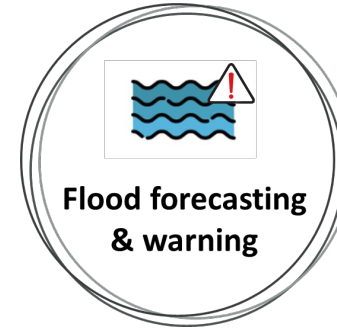


AGRICULTURE AND FOOD SECURITY



LAND COVER / LAND USE AND ECOSYSTEMS

Supporting Early Warning



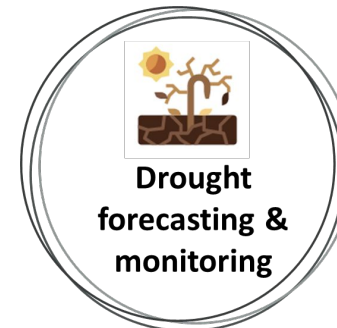
Flood forecasting & warning

Improve accuracy of precipitation and increase lead-time from 7 days to 15 days and integrate in MRC-FEWS



Flash Flood Guidance

Integrate near real-time storm severity and potential impacts with MRC-FFGS



Drought forecasting & monitoring

Provide various drought indices through MDCW.

Enhance flood and drought risk management through RAT-Mekong

Extreme Hydrological Events

- Flood: The average annual cost of floods in the LMB ranges from **US\$60-70 million**. Cambodia and Viet Nam alone commonly account for approximately two-thirds of the region's total annual flood damage.
- Drought: Yields of rice and other lifeline crops plummet as a result of water shortages and saltwater intrusion in the Mekong Delta. Water levels become critically low, making transport of goods and services difficult or even impossible.

Accurate, timely, and continuous water-related data are key to managing floods and drought.



Supporting Better Riverine Flood Forecasting in the Mekong Countries

SHORT RIVERINE FORECAST



MEDIUM RIVERINE FORECAST

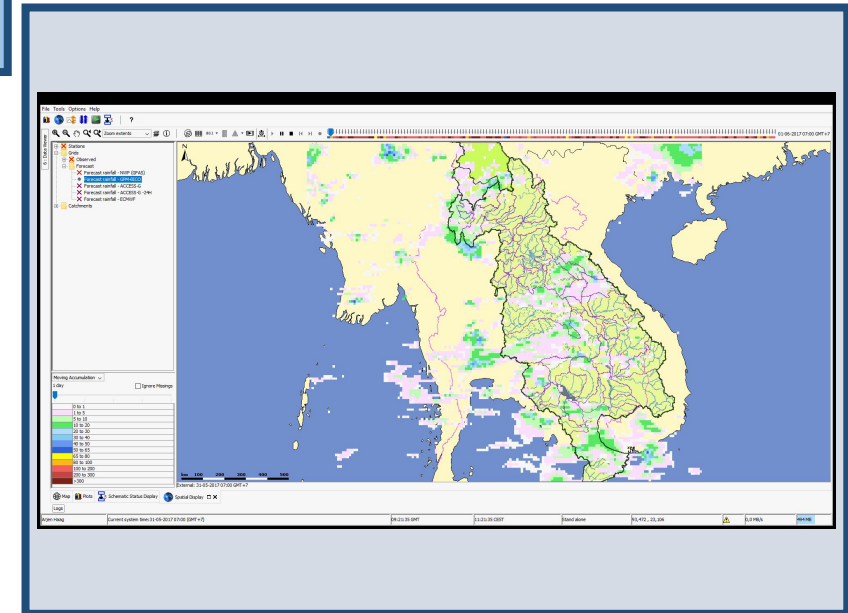


Bias corrected rainfall forecast

CHIRPS-GEFS
0.05 res
(15/10days)

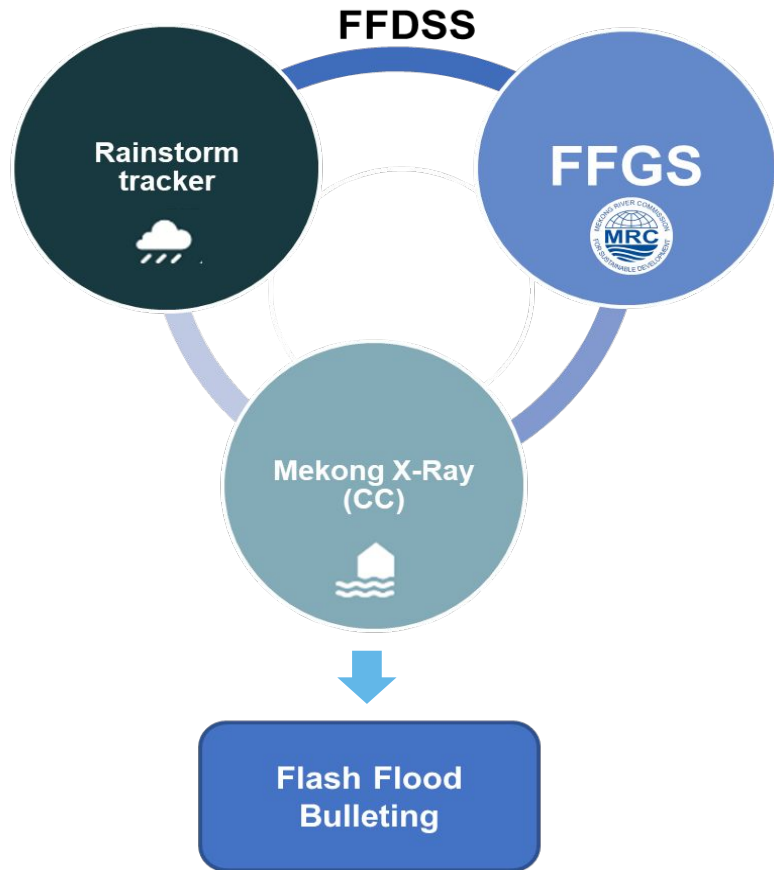
Bias-corrected and downscaled version of NCEP Global Ensemble Forecast System precipitation forecasts.

MRC-FEWS



Improve accuracy of precipitation and increase lead-time from 7 days to 15 days and integrate in MRC-FEWS

Integrate near real-time storm severity and potential impacts with MRC-FFGS



Rainstorm Tracker

Spatiotemporal analysis for rainstorms



Mekong River Commission Secretariat (MRC) Regional Flood and Drought Management Center (RFD/DMC)

Flash Flood Mekong Bulletin

On 13 October 2021 at 06:00 UTC (01:00 PM Local time)

Main conclusion and guidance for flash flood in the Lower Mekong Basin (LMB)

- In the next 1, 3 and 6 hours there has been detected that flash floods may occur in some areas in the LMB. Details on the location of the flash flood risk areas in the LMB are in the attached excel file and on the webpage: <http://ffw.mrcmekong.org/ffg.php>
- In the next 24- hour, flash flood has been detected may occur at some areas in north and north-central parts in Viet Nam and central and northeast parts of Lao PDR (see figure of FFR1-24h).
- The updated flash flood information will be provided at 8:00 am on 14 October 2021, and available on the webpage

FLASH FLOOD RISK

FLASH FLOODS RISK BY PROVINCE

Province	Households affected	Households displaced	Deaths	Houses affected	Health centres affected	Schools affected
Pursat	18,365	1,891	3	436	1	1
Battambang	38,890	1,331	-	2,812	1	1
Banteay Meanchey	8,538	1,473	6	8,538	6	6
Stung Treng	923	55	-	851	1	1
Preah Vihear	237	-	-	-	-	-
Svay Rieng	26	-	-	-	-	-
Pailin	742	253	1	620	6	6
Kandal	4,157	12	1	3,974	1	1
Kampong Speu	1,697	336	-	626	1	1
Takéo	314	-	-	314	-	-
Phnom Penh	3,131	45	-	2,855	-	-

Rainstorms (24-48 hours)

Region	Count
THAILAND	11
LAOS	0
VIETNAM	2
MYANMAR	1
INDONESIA	0
CELEBES	12

Critical Infrastructure

Category	Count
Hospitals	5
Roads	5
Trunks	0
Primary	1
Secondary	5

Regional Flood and Drought Management Center (RFD/DMC)
 P.O. Box 623 #576, National Road #2, Chak Angre Krom, Meanchey, Phnom Penh, Cambodia
 Tel: (855-23) 425363, Fax: (855-23) 425363, Email: floodforecast@mrcmekong.org

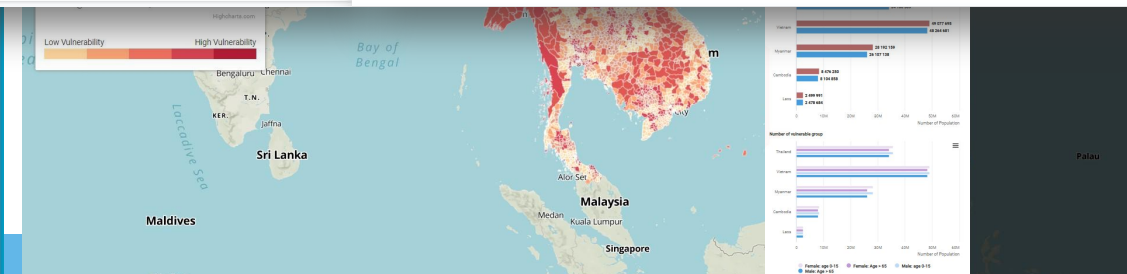
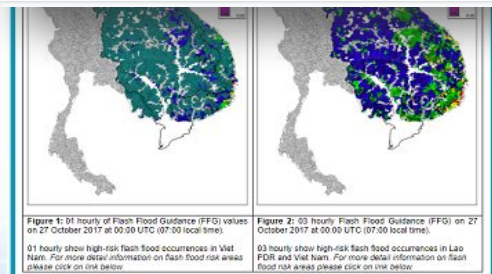
Mekong River Commission Secretariat (MRC) Regional Flood and Drought Management Center (RFD/DMC)

FFGS OUTPUTS

REGIONAL RAINFALL FORECAST

REPORTS

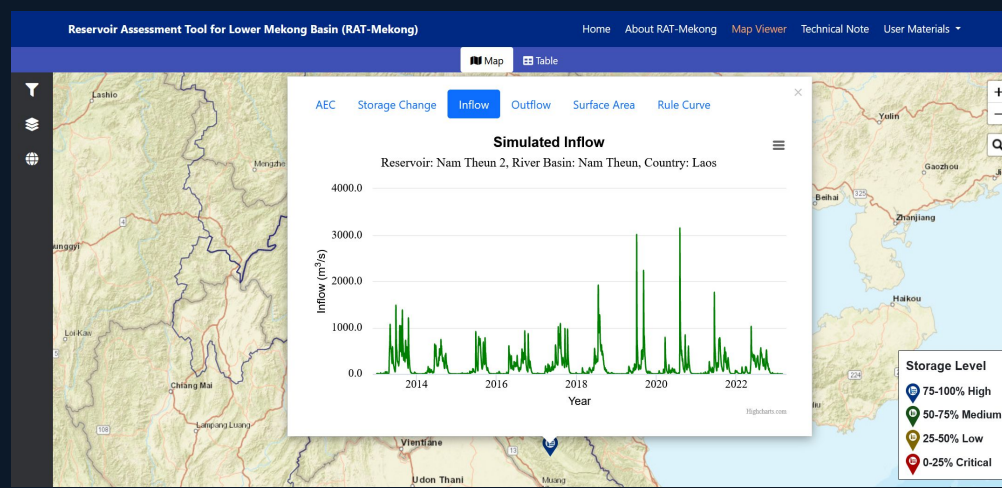
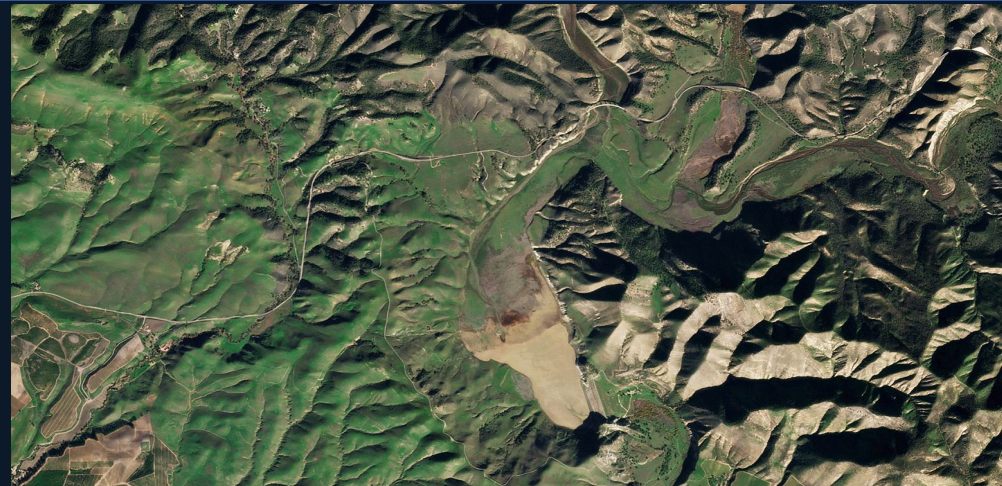
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Enhance Flood and Drought Management through Reservoir Monitoring and Forecasting



RAT-Mekong
Contributing to
a sustainable water
management



MRC Data and Information Services

Search MRC's scientific data

Monitoring Services

The MRC, together with its Member Countries operates extensive monitoring networks

- Hydrology & river monitoring
- Flood monitoring & forecasting
- Drought monitoring
- Discharge & sediment monitoring
- Environmental health monitoring
- Water quality monitoring
- Fisheries monitoring
- Reservoir Monitoring**

Enhance Drought Monitoring and Forecasting in the Lower Mekong Region

MEKONG DROUGHT AND CROP WATCH

INTERACTIVE MAP CREATE BULLETIN HOW TO USE

DROUGHT CROP YIELD

Mekong

Current Conditions

Map Updated: 2023-06-26

<24D <16D <8D CURRENT

Intensity of Current Conditions

- No Drought
- Moderately Dry
- Severely Dry
- Extremely Dry
- No Data

Map Download

Current Conditions

Please click here if you cannot download data

Outlooks

Map Updated: 2023-05-20

1M 2M 3M

Outlook Warning

- None
- Watch
- Warning
- Alert

Map Download

1M 2M 3M

Please click here if you cannot download data

Drought Early Warning Lower Mekong Basin

Date: 09-02-2020

Weekly Forecast Combined Drought Index (CDI)

D4 (Exceptional Drought)	Mekong River
D3 (Extremely Drought)	Country Boundary
D2 (Severely Drought)	Catchment Boundary
D1 (Moderate Drought)	Lower Mekong Basin Boundary
D0 (Normal Condition)	

The drought monitor focus on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Disclaimer: This drought monitoring and forecasting map is calculated based on the satellite imageries with no ground verification. MRC does not guarantee the values and accuracy of the products nor be responsible for any risks of using the products.

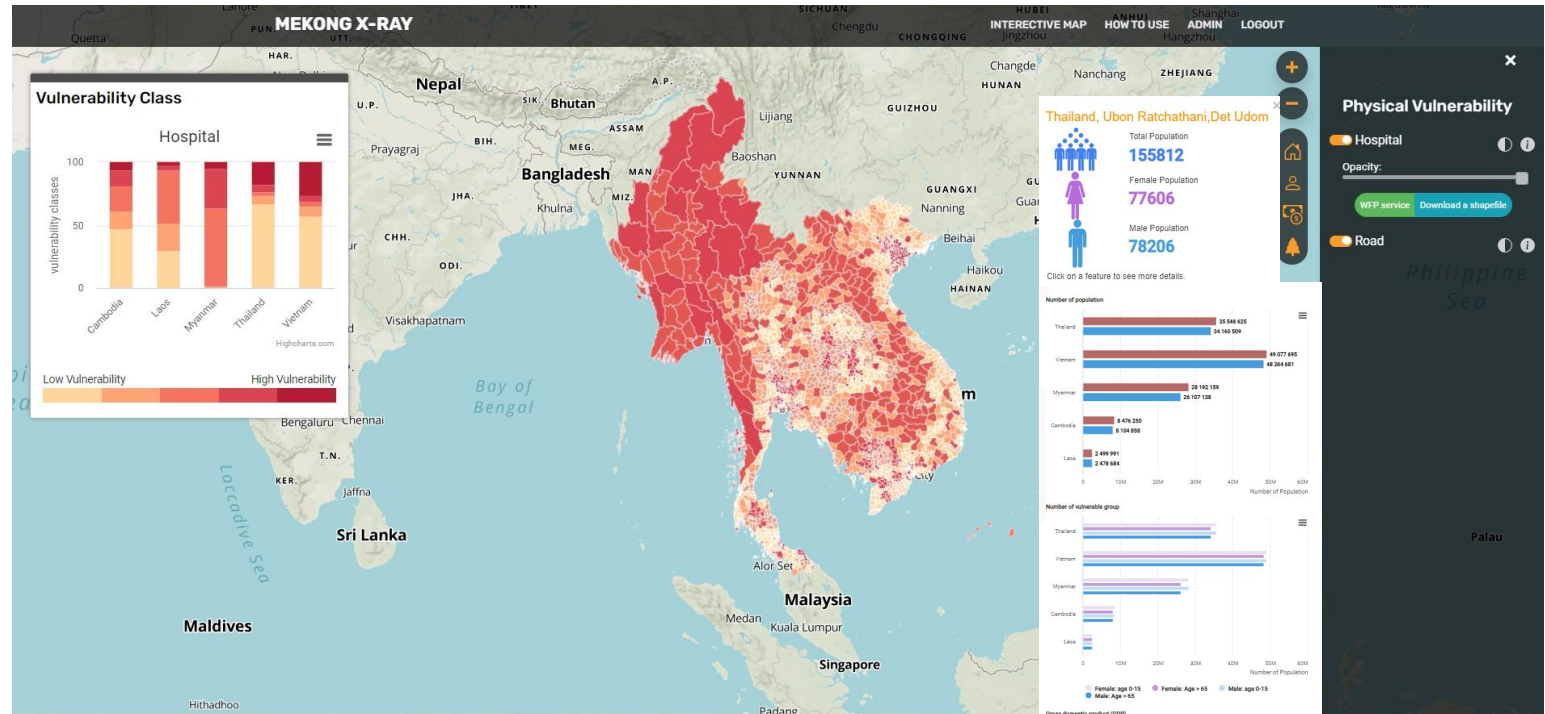
Provides 3-month forecast (updated weekly)

Integrated MDCW within MRC to support Drought Early Warning

Enhancing **Anticipatory Actions** for Disaster and Climate Resilience



Centering our efforts
to the last mile
Leave no one behind



The background of the slide is a photograph of a group of children sitting on a grassy field. Several children in the foreground are making peace signs with their hands. They are dressed in casual clothing, including a red shirt and a blue shirt. The background shows some trees and a simple building.

THANK YOU

peeranan@adpc.net

We harness the **power of Satellite Data** and Geospatial Information to amplify diverse voices and shape services that **leave no one behind**