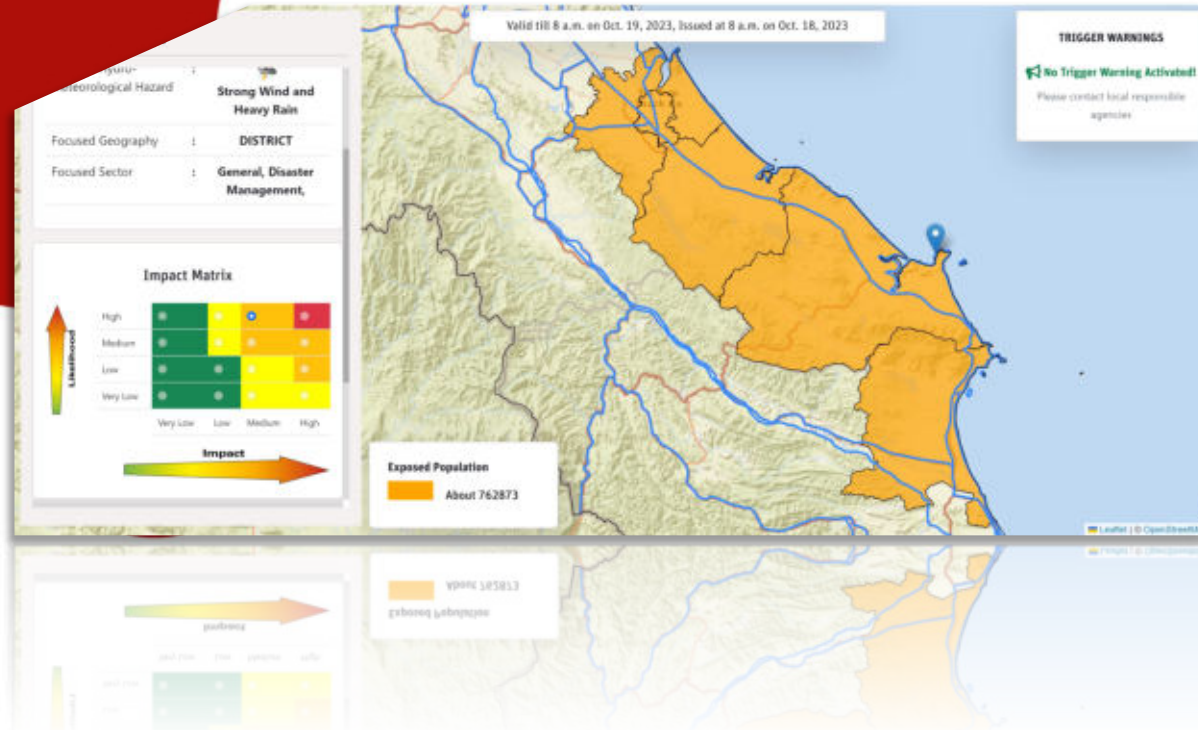


ADPC engagement in strengthening IBF & CS in the region

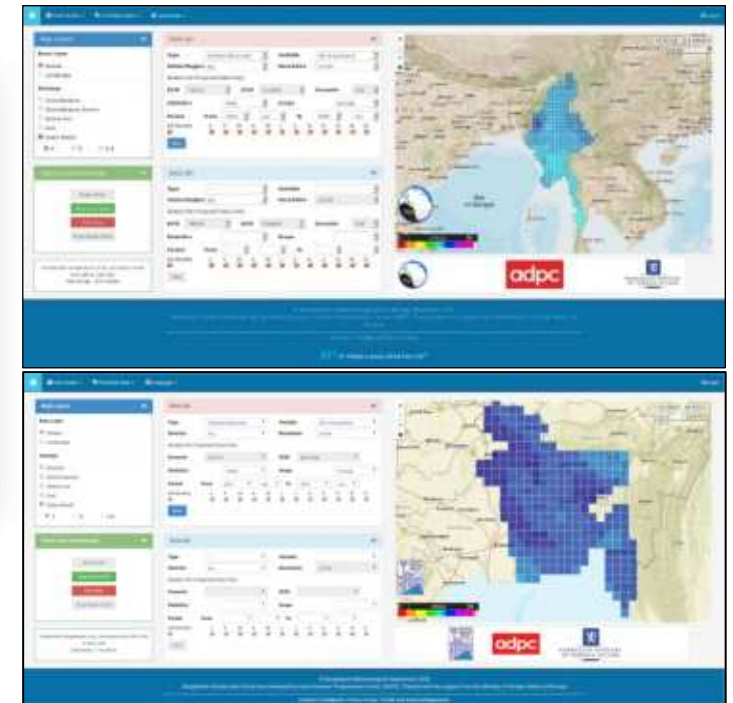
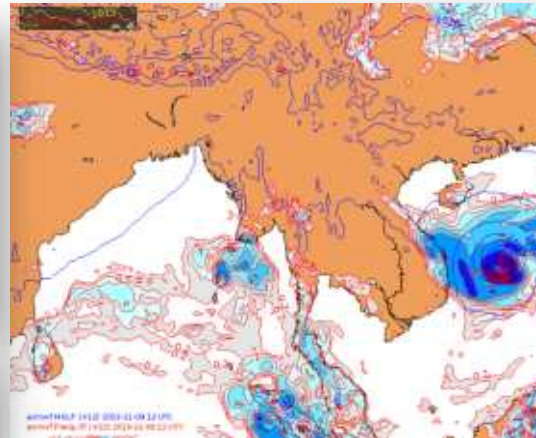
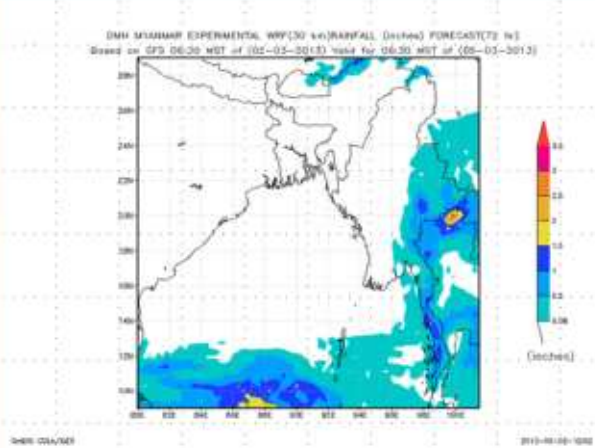
SAHF Planning Workshop on IBF and CS
21-24 January 2025, Bangkok

Senaka Basnayake, PhD
Asian Disaster Preparedness Center



ADPC engagement in strengthening EWS in the region

- ❖ **UNESCAP's Projects of the Trust Fund for Tsunami, Disaster and Climate Preparedness (TTF)** – funded by UNESCAP: TTF-01 in 2006, TTF-02 in 2007, TTF-07 in 2008 & TTF-18 in 2012
- ❖ **Operationalizing Strategic Plan for Disaster Management (OSPDM) in Lao PDR** – Early Warning Component (2010 – 2012) – funded by World Bank
- ❖ **Strengthening weather and climate services of Myanmar, Bangladesh and Vietnam to deal with hydro-meteorological hazards** (2012-2017) - funded MOFA-Norway



Climate Data Portals

ADPC engagement in strengthening EWS in the region

- ❖ **Strengthening Disaster Risk Reduction Capacity in Selected ASEAN Countries (Lao PDR and Myanmar)** - (Outcome 1) (2013 – 2015) - funded by NZAID
- ❖ **Program for Improved Disaster Management and Resilience against Natural Disasters in Rakhine State, Chin State and Sagaing Region in Burma/Myanmar** (2014 – 2017) – funded USAID/OFDA (through IOM)
- ❖ **Strengthening Disaster Management System in Cambodia through Risk Assessment, Early Warning System and Developing Building Codes (2013-2014)** - funded World Bank
- ❖ **Nepal-India Transboundary Resilience project to connect upstream and downstream communities to reduce flood disaster risks** (2017-2018) - funded GRP/ LWR
- ❖ **Urban Resilience to Climate Extremes in Southeast Asia** (2018-2024) – funded by Norad



NFCS initiative in Vietnam



Key Activities

- Formation of Technical Working Group (TWG)
- Vision, mission statement for NFCS
- Include strategic action plan
- Support VNMHA in identifying financial resources for NFCS

Key Challenges

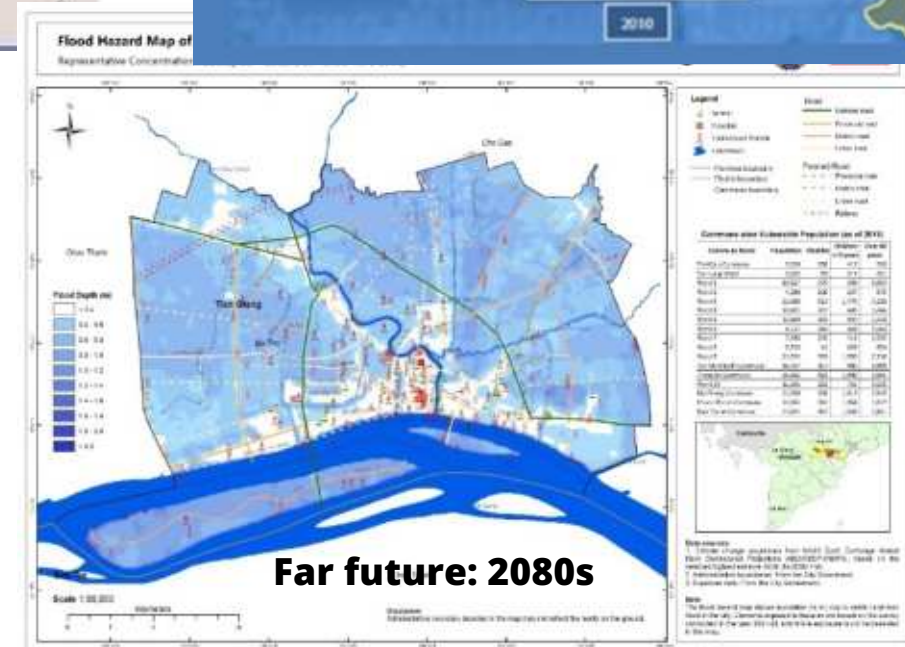
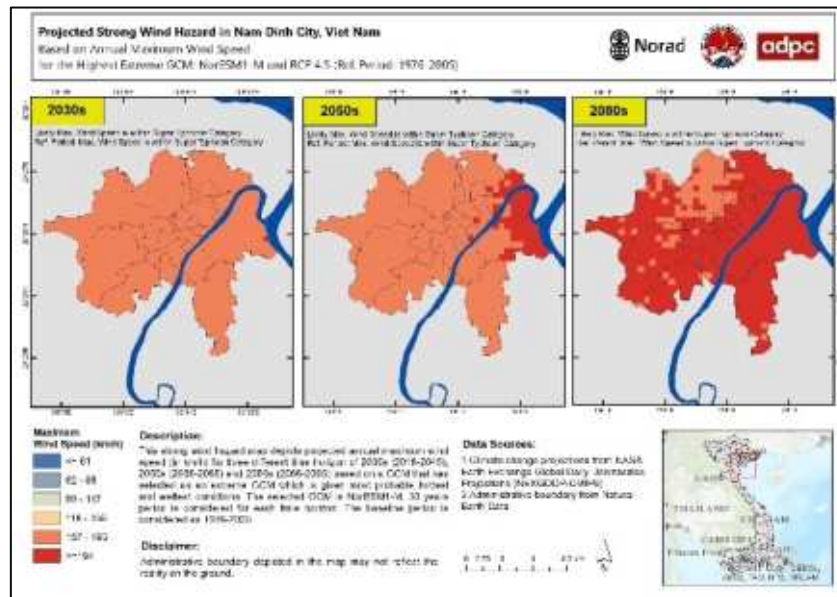
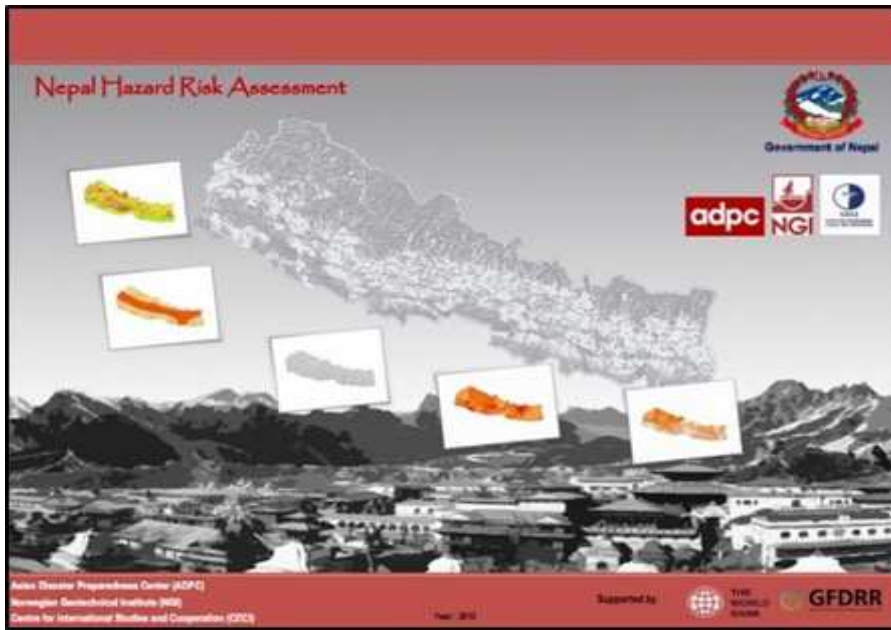
Governance:

- Defining climate services (including mandates) as per climate services governance and national law/acts,
- Binding vs Non-binding NFCS,
- Forming national steering committee,
- Forming technical working group,
- MoU (between Climate services and Sectoral stakeholders)
- Resource availability (human, financial, infrastructure) for sustainability

Technical:

- Understating multifaceted climate extremes (frequency and intensity),
- Matching national/sectoral needs and priorities (Time: SML/Priority: HML)

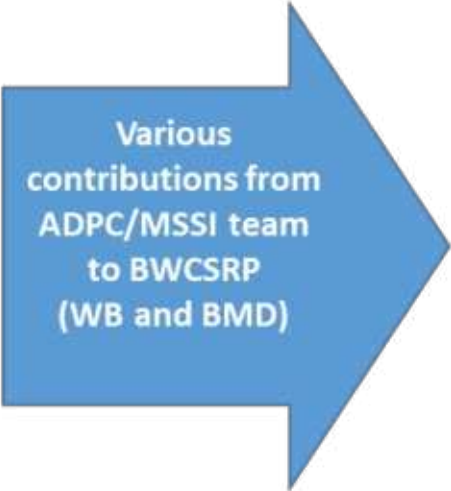
Some of multi-hazard risk assessment initiatives



Consulting services for Meteorological Systems and Services Integrator (MSSI) under the Bangladesh Weather and Climate Services Regional Project (BWCSR)

Timeline: From Dec. 2019 – Mar. 2023.

ADPC through the MSSI project is supporting Bangladesh Meteorological Department (BMD) in modernized meteorological ICT, forecasting system, and make it a state of art institution to serve Bangladesh



- Improved meteorological ICT infrastructure
Integrated Files and Messaging System (IFMSS)
Forecast Production and Archival System
- Improved weather services
Strengthen NWP modeling
Improve Forecasting and verification systems
- Improved climate modeling and services
Improve climate modeling
Climate Data Base Management System
- Cyclone forecasting
Storm surge modeling
Radar data utilization
Early Warning Systems
- Strategize training and capacity building provisions
Operation and Maintenance



National Meteorological Information and Communication Facility (MICF)
(at BMD-HQ and SWC)

2 HPCs (~ 1500 cores)

Regional Project on Drought Management for South Asia



Asian Disaster Preparedness Center

- The project was implemented in South Asian countries namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.
- ADPC coordinated/consulted with UNCCD National Focal Agencies, NMHS, NDMO, SAARC and other key sectoral agencies (especially Agriculture and Water) in South Asia

Objective:

Develop a Regional Strategy for Drought Risk Management and Mitigation for South Asia Region



Launched in
December 2024 at
UNCCD COP16



Strengthening Impact-based Forecasts and Warnings for Multi-Hazards Focusing Multi-Geographies and Multi-Sectors



Sectoral Agencies

Decision Support System for Impact-based Forecast and Warning

Current Warning | Strong Wind and Heavy Rain | Warning Category: Medium

TODAY NOW LOCAL TIME

General: IBFW

Forecasted Hydro: Meteorological Hazard: Strong Wind and Heavy Rain

Forecasted Geography: DISTRICT

Forecasted Sector: General, Disaster Management

Impact Matrix

High	Medium	Low
High	Medium	Low
High	Medium	Low

Exposed Population

- Yellow: About 227335
- Red: About 161900

Current Impact and Action | IBFW System

Anticipated Impacts:

- Roads A1, A2 and B2 over Ward 1, 2 and 3 may get flooded up to 2 feet (50%)
- Houses/Buildings are more vulnerable in Ward 1, 2 and 3 (30%)
- Significant damages to the roof of many houses in Ward 1 and 2 (60%)
- Population displacements in Ward 1 and 2 (80%)
- Electricity network disruption in Ward 1, 2 and 3

Actions can be Taken:

- Remain alert
- Ensure you access the latest weather forecast for up to date information
- Prepare to act to protect life and livelihood in the designated locations.
- Prepare to act to protect livestock in the designated locations
- Prepare to act to protect property in the designated locations
- Identify the safe shelters with basic amenities for male and female and access to disabled
- Secure property and livelihood assets. Be prepared to evacuate
- Be aware of the potential risk of flying objects in your area
- Follow civil protection orders

Flood Hazard to Road and Critical Facilities in Nam Dinh City, Viet Nam

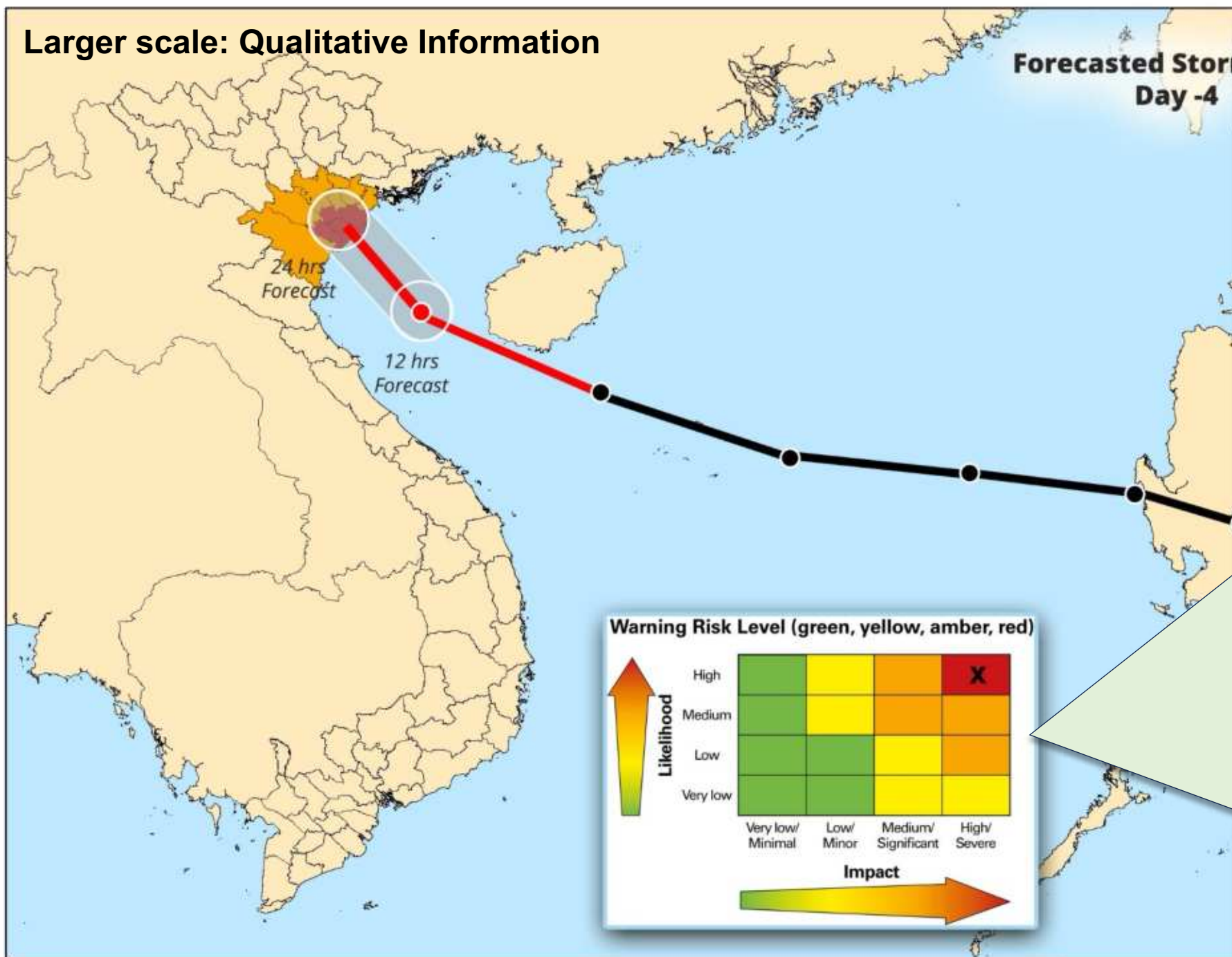
Legend

Category	Color	Description
High	Red	High Hazard
Medium	Yellow	Medium Hazard
Low	Blue	Low Hazard



IbFW tool is aimed at improving Early Warnings and Anticipatory Actions for protecting lives and infrastructures

Larger scale: Qualitative Information



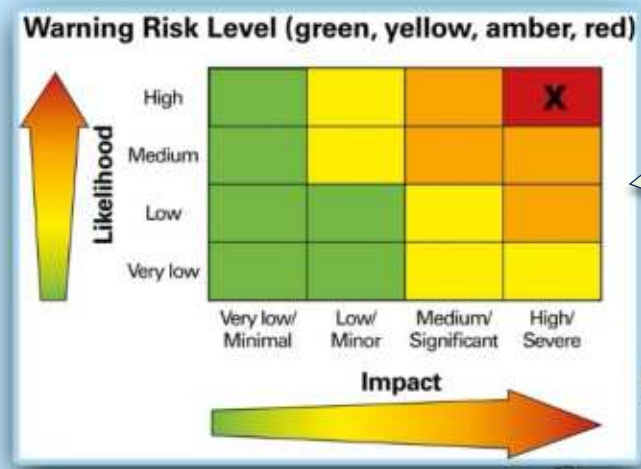
Take Actions

Impact:

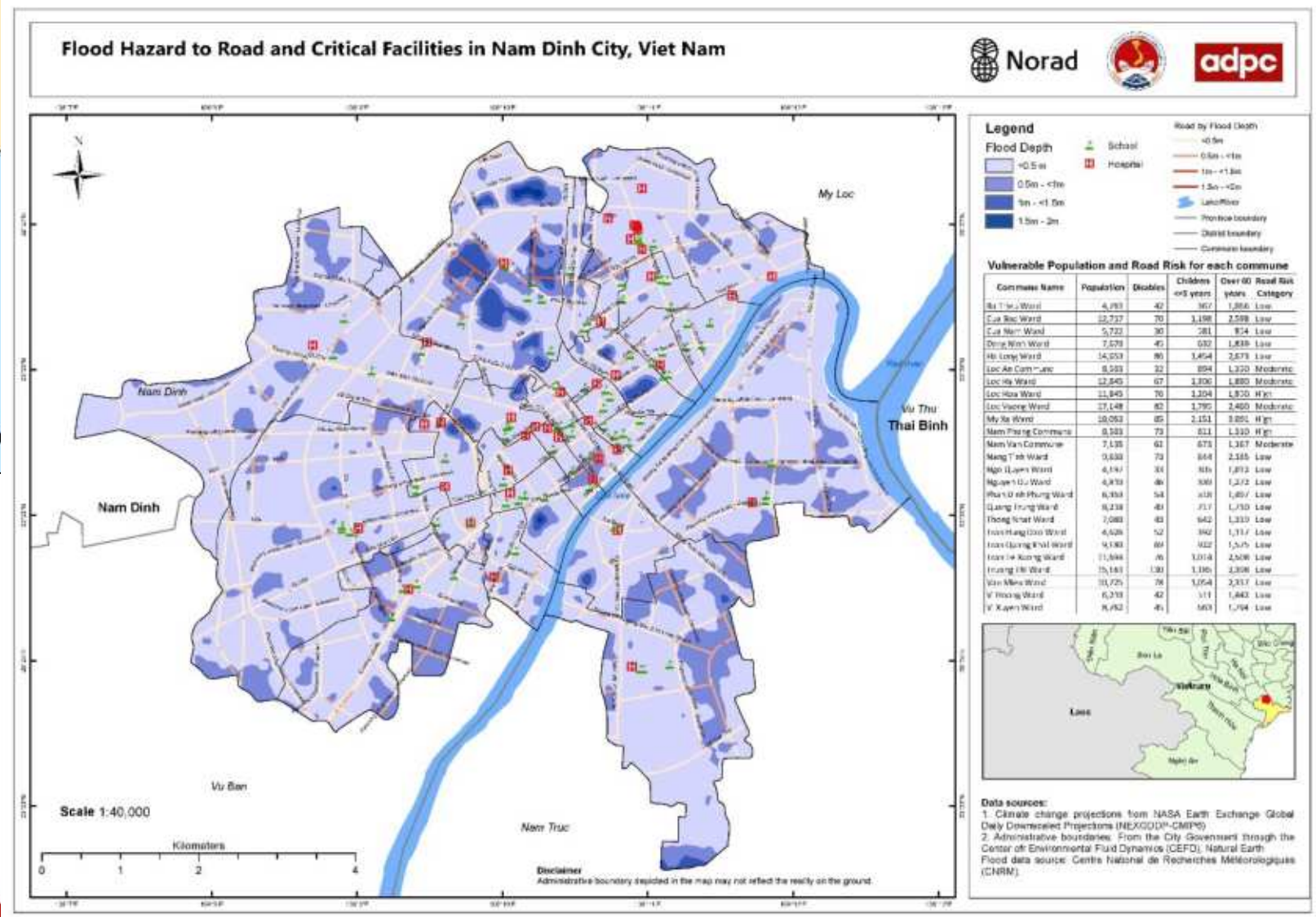
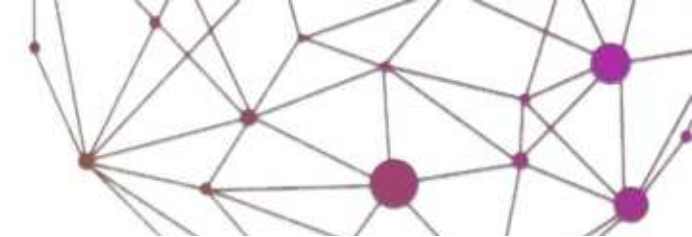
- (Previous impacts +)
- Widespread damage to structures – houses and commercial buildings collapsing
 - Widespread damage to infrastructure systems and services (shelter, transportation, schools, hospitals, energy supply, communication)
 - Widespread damage to communication and electricity supply infrastructure
 - Widespread delays to public transportation (Air, Road, Rail, Ship, Ferry)
 - Loss of life of both people and animals
 - Big trees fall down
 - No more boats can operate, even big ships grounded
 - Schools, hospitals and many public services, damaged and some cannot be used
 - Loss of measurement equipment
 - Widespread Loss of fishing boats and gear
 - Financial losses to farmers and fishermen
 - Crops, loss yield & cultivation
 - Soil erosion
 - Search and rescue impacted on a large scale

Actions and AA:

- (Previous actions +)
- Evacuate if ordered to do so by disaster management authority
 - Be prepared for extraordinary measures to protect life and property
 - Be prepared with pre-arranged finance, food, medicine, shelter etc.

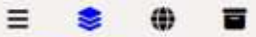


Secondary Impacts in Urban Scale: Detailed risk assessments are important for right actions



⚠️ Current Warning | **Strong Wind and Heavy Rain** | Warning Category **Medium**

General **IbFW**

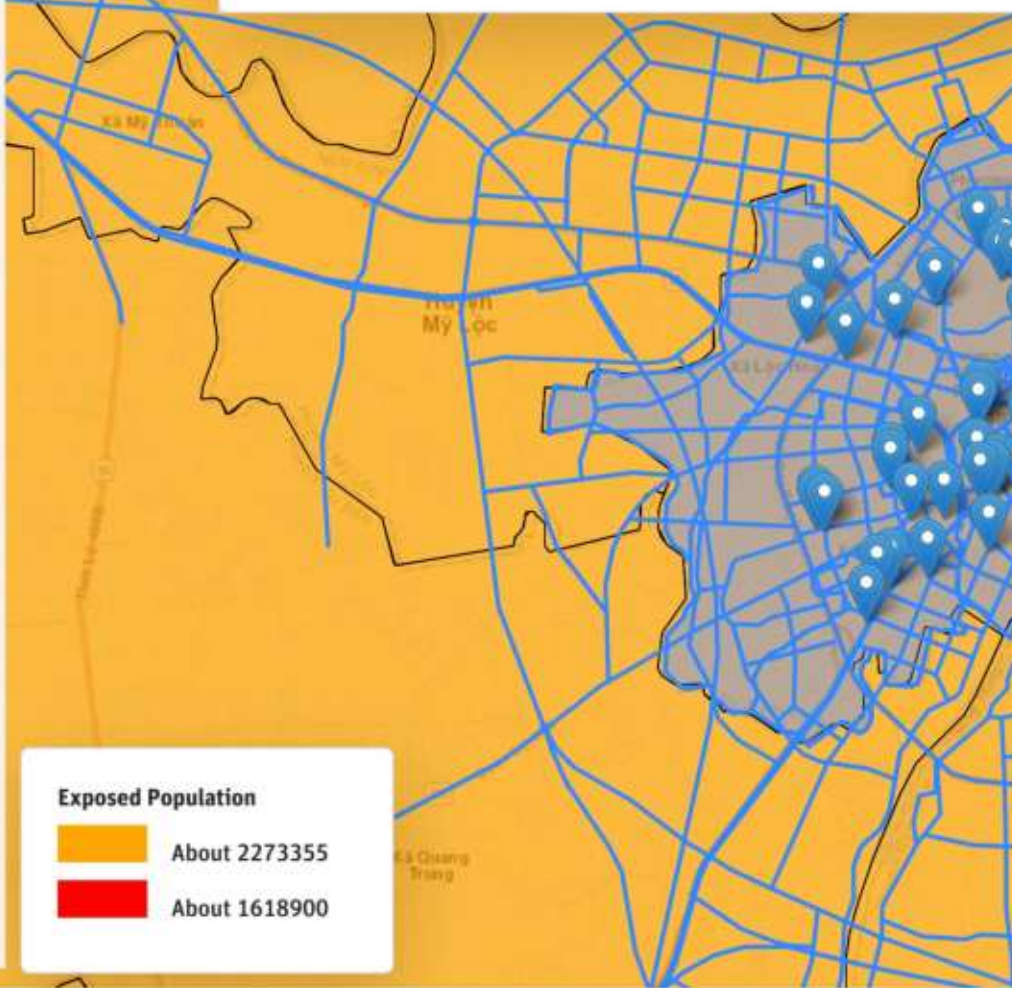


- My Tho Rivers
- My Tho Population
- My Tho Transport
- My Tho Water Supply

Nam Dinh City Layers

- Nam Dinh Building Footprint
- Nam Dinh City Boundary
- Nam Dinh Commune Boundary
- Nam Dinh Educational Institutions
- Nam Dinh Electricity Line
- Nam Dinh Health Institutions
- Nam Dinh Population
- Nam Dinh Rivers
- Nam Dinh Transport
- Nam Dinh Water Supply

Valid till 8 a.m. on Oct. 19, 2023, Issued at 8 a.m. on Oct. 18, 2023



Current Impact and Action | IbFW System ✕

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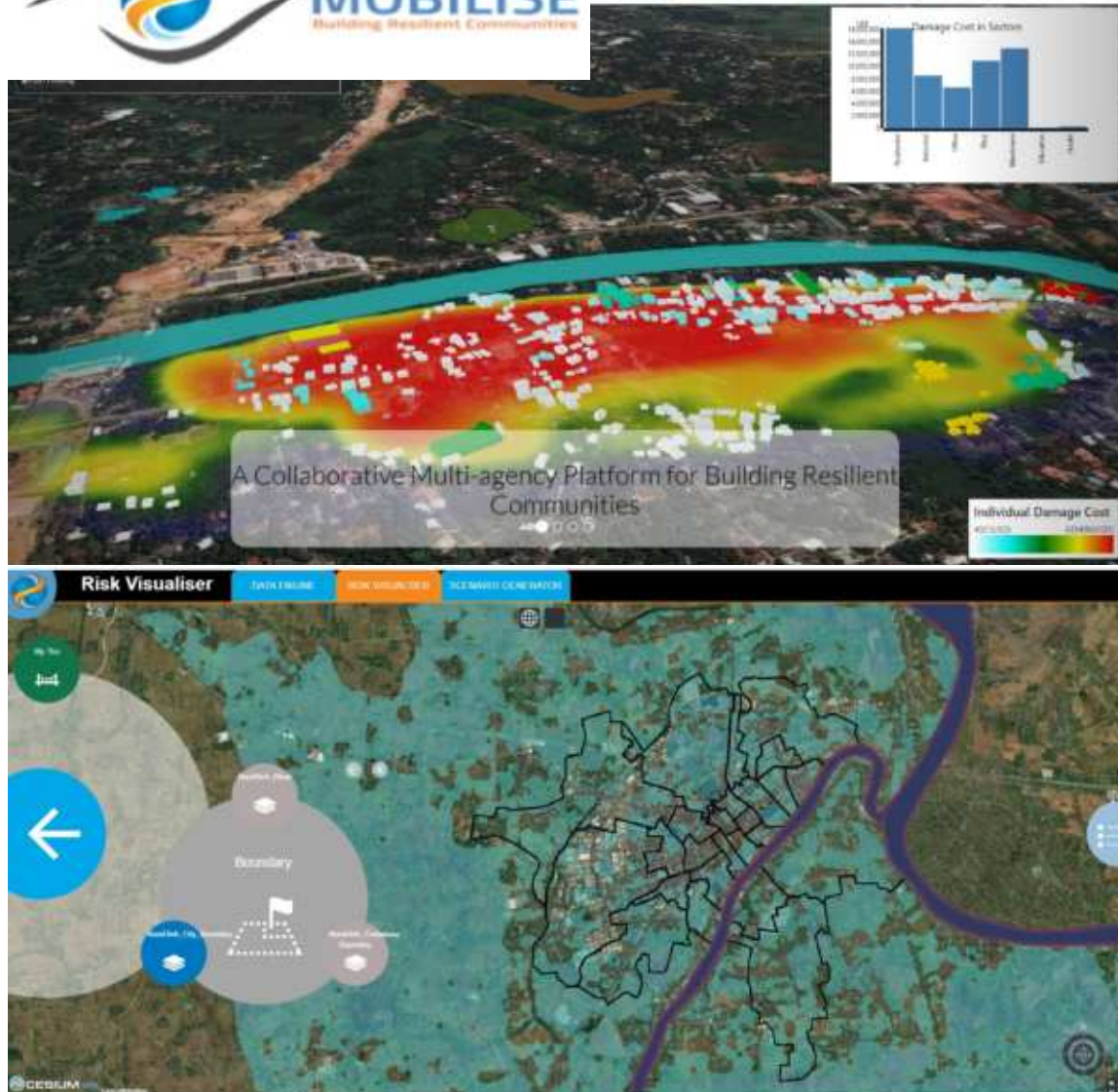
Close

Risk Visualization Tool - MOBILISE

A digital tool contributing to Risk-informed Governance

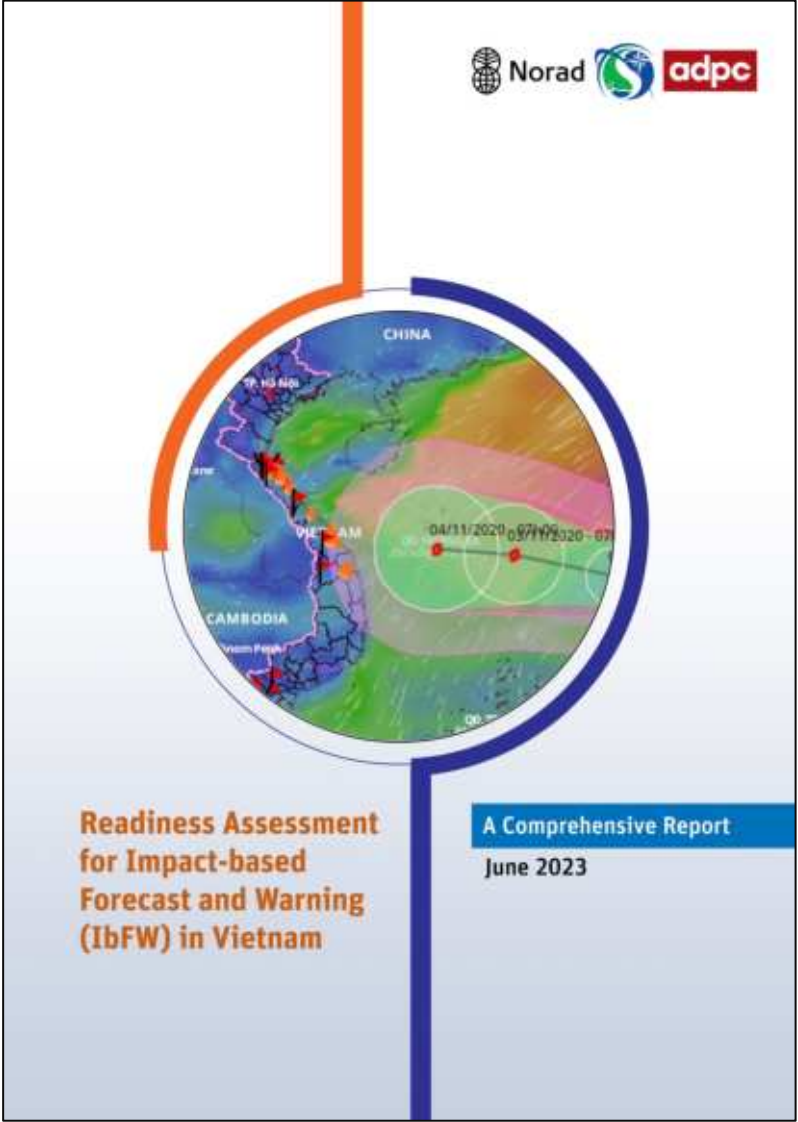


https://www.adpc.net/riskvisualizer_vn/



- Visualize impending hazard conditions in the city
- Identify Hot spots in the cities (zones, urban communities and critical infrastructure vulnerable to impending hazards)
- Possibility to identify the potential impact and damage enabling to secure the necessary funding in advance
- Draft emergency/contingency plans
- Identify safe zones for future development

IbFW Readiness Assessment and Action Plan in Vietnam



The cover features the logos of Norad and adpc at the top. A central circular graphic shows a map of the region including China, Vietnam, and Cambodia, with a timeline from 04/11/2020 to 07/11/2020 - 07. The title and subtitle are located at the bottom of the cover.

Readiness Assessment for Impact-based Forecast and Warning (IbFW) in Vietnam

A Comprehensive Report
June 2023



The cover features the logos of Norad and adpc at the top. A central circular graphic shows a map of the region including China, Vietnam, and Cambodia, with a timeline from 04/11/2020 to 07/11/2020 - 07. The title and subtitle are located at the bottom of the cover.

Impact-based Forecasting and Warning (IbFW): Strategy and Action Plan

A Comprehensive Report
June 2023

IbFW Readiness Assessments in Cambodia & Lao PDR



Southeast Asia Drought Watch (SEADW)



Home

Interactive Map

Bulletin

Southeast Asia Drought Watch

Current Condition

Outlook

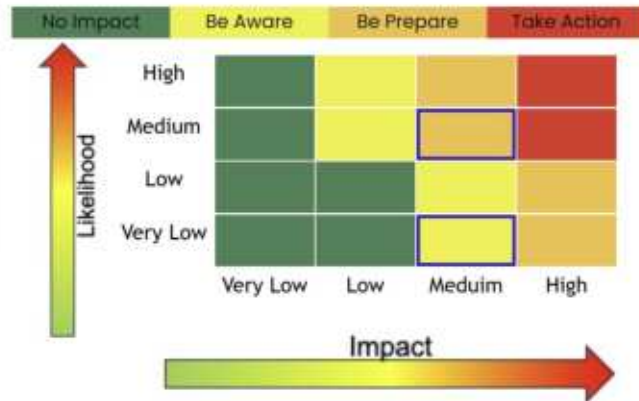
Impact-based Forecast & Warnings

Generated on 2025-01-01, Valid till 2025-01-31.

Focused Geography: District

Focused Sector : Disaster Management, Agriculture

Impact Matrix: Color Key (Status)



Share Share Support Validation

Weather Condition



Lessons Learned

- Comprehensive **IBF Readiness Assessment** and **Strategic Action Planning** with clear Recommendations are important for implementation of IBF in countries.
- Limited **theoretical understanding** and **technical knowledge on IBF Generation, Dissemination and Forecast/Impact verification**
- Limited capacity and understanding on **Risk and Impacts assessments**
- Limited capacity on **Forecast and warning** with new tools and technology
- Training needs to improve **GIS and remote sensing applications**


Pipelined Opportunities

- Support strengthening **Anticipatory Action (AA)** using IBF for typhoons, floods, droughts in **Myanmar**.
- Improve **IBF for flash floods and drought** in the ASEAN countries (collaboration with AHA Center)
- Introduce **South Asia Drought Watch (SADW)**, which has monitoring and forecasting capacity to support IBF for droughts.



THANK YOU
FOR YOUR ATTENTION

 www.adpc.net

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