



An EPIC Response:

Innovative Governance for Flood and Drought Risk Management



A Snapshot

Hydro-climatic hazards don't need to become disasters:

Hydro-climatology looks at the interaction between weather, watersheds, and water. Hydro-climatic extremes, such as periods of abnormal dryness or wetness, are natural hazards and are increasing in a warming world. Whether a hydro-climatic hazard results in a flood or drought disaster depends on how society manages these risks.

Cover photos: top/Heyfajrul; bottom/Capstoc



Photo: NASA



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Flood and drought disasters impose a huge toll:

Over the last two decades, at least 1.65 billion people have been affected by floods and 1.43 billion by droughts. The economic costs have been staggering, and the social costs even higher as the poor and marginalized are disproportionately affected. Hydro-climatic disasters can have intergenerational poverty impacts, spur migration, and contribute to geopolitical instability.

Some progress has been made but we have not yet come to terms with enormity of the challenge:

Over the last few decades, many countries have made significant improvements in managing hydro-climatic risks, supported by international initiatives such as the Sendai Framework for Disaster Risk Reduction, the Paris Climate Agreement, and the Sustainable Development Goals. But those are not enough, and we are falling behind. National governments often deal with floods and droughts in a siloed manner, without fully encompassing the complexity and interlinkages between these two types of hazards.



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A new perspective, referred to as an “EPIC Response”, is offered to better manage hydro-climatic risks:

This perspective looks at floods and droughts not as independent events but rather as different ends of the same hydro-climatic spectrum that are inextricably linked. It provides a comprehensive framework to help national governments lead a whole-of-society effort to manage these risks. The term EPIC Response is a mnemonic for remembering the key elements of this perspective, as shown in the accompanying graphic—it also connotes the level of effort that is required.

The EPIC Response Framework

PROGRAM AREAS

ENABLE

- National Frameworks: Laws, Agencies, Strategic Plans
- Facilitating a Whole-of-Society Approach
- Hydro-Met Services

PLAN

- Flood and Drought Risk Mitigation and Contingency Planning

INVEST

- Healthy Watersheds
- Water Resources Infrastructure

CONTROL

- Water Allocation and Groundwater Management
- Floodplain Management

RESPOND

- Drought Monitoring, Response, and Recovery
- Flood Monitoring, Response, and Recovery
- Disaster Risk Financing

IMPACT



Source: Authors.

An EPIC Response Framework shows how national governments can holistically manage floods and droughts:

There are twelve fundamental building blocks to an EPIC Response, as explained in the report. The report also describes another 40 distinct programs managed by a variety of national agencies. These different programs interact in complex ways, but generally in a downward cascading manner that ultimately determines to what extent hydro-climatic hazards result in disasters.



Photo: Danikanci



Photo: © Dreamstime Agency

National agencies must fulfill their specific mandates but also need to collaborate to achieve an EPIC Response:

If national agencies are not performing well or if interagency collaboration is weak, then there will be significant gaps in a country's efforts to reduce hydro-climatic risks. An EPIC Response seeks to address these issues with the aim of efficiently reducing the economic, social, and environmental costs of floods and droughts.

National Agency Roles for Hydro-Climatic Risk Management

Hydromet

Provides information for water resources and floodplain management. Leads flood and drought forecasting. Supports agriculture with agro-hydro advisory services.



WRM

Oversees planning and operation of water resources infrastructure. Regulates water allocations and strategic use of groundwater to help mitigate droughts. Key role in flood and drought response.



DRM

Lead coordinating agency for flood, and sometimes drought, disaster response. Provides leadership in floodplain management. Works with other agencies to mitigate risks.



Agriculture

Promotes healthy watersheds through sound agricultural policies and climate-smart agriculture. Helps boost farmer incomes and resilience. Key role in drought response. Collaborates with natural resources and WRM on watershed management

Natural resources management

Promotes healthy watersheds by sustainably managing forests, wetlands, and coastal barriers. Collaborates with agriculture and WRM on watershed management.

Photos, top clockwise: NASA/MikeMareen; stevelenzphoto; andipantz; Pgiarn; nemar74

An EPIC Response is a whole-of-society effort:

National governments must lead a whole-of-society effort to managing hydro-climatic risks. Sub-national governments are the indispensable associates of national agencies in this endeavor. Agencies need to engage with businesses, civil society, and households—and focus on poor and marginalized groups—to ensure effective programs. They need to prioritize education and risk communication, tap into the expertise of the research community, and ensure open access to data and information.

Developing an EPIC Response is an evolutionary process:

The ability of a country to mount an EPIC Response depends on many factors, including its overall level of economic development and quality of governance. The report helps countries improve their responses by providing a template to gauge the effectiveness of their programs. The challenge is urgent because a country's EPIC Response needs to evolve rapidly to stay ahead of a changing climate.



National strategic planning is a key tool for accelerating the evolution of an EPIC Response:

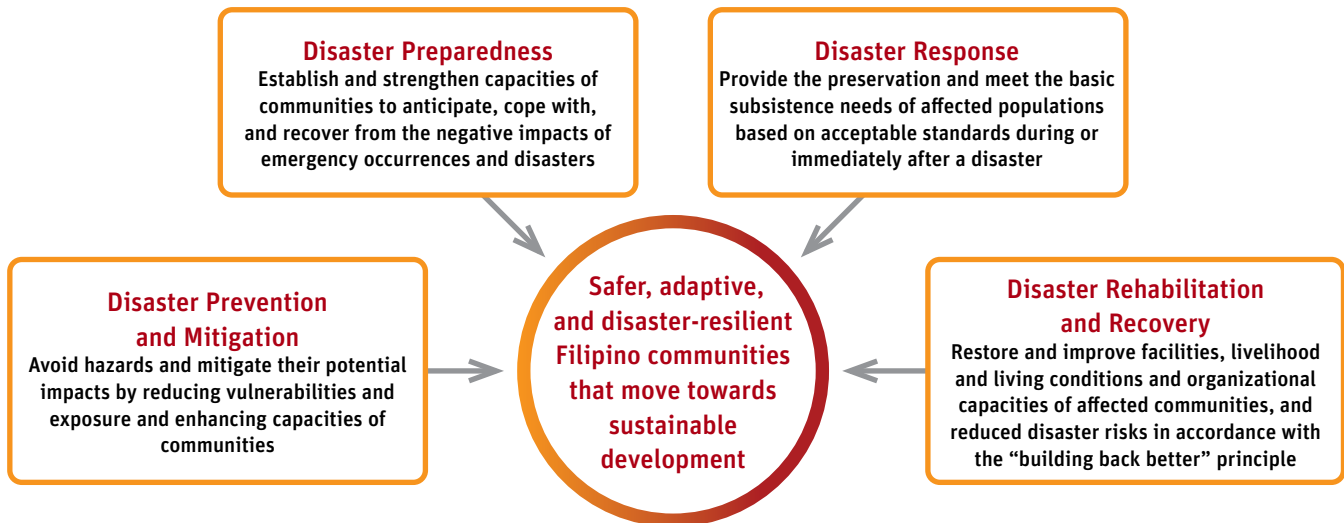
Governments should periodically, approximately every five years, develop interlocking national strategic plans for water, disaster risk management, and drought. They need to continuously strive to improve program performance through rigorous monitoring, evaluation, and adjustments. National climate adaptation plans can also be guided by the EPIC Response Framework.

Learn more:
www.worldbank.org/epic



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General Scope of The Philippines National Disaster Risk Reduction and Management Plan



Source: The Philippines National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028.