

Risk Knowledge for EW4ALL (and a bit more!)

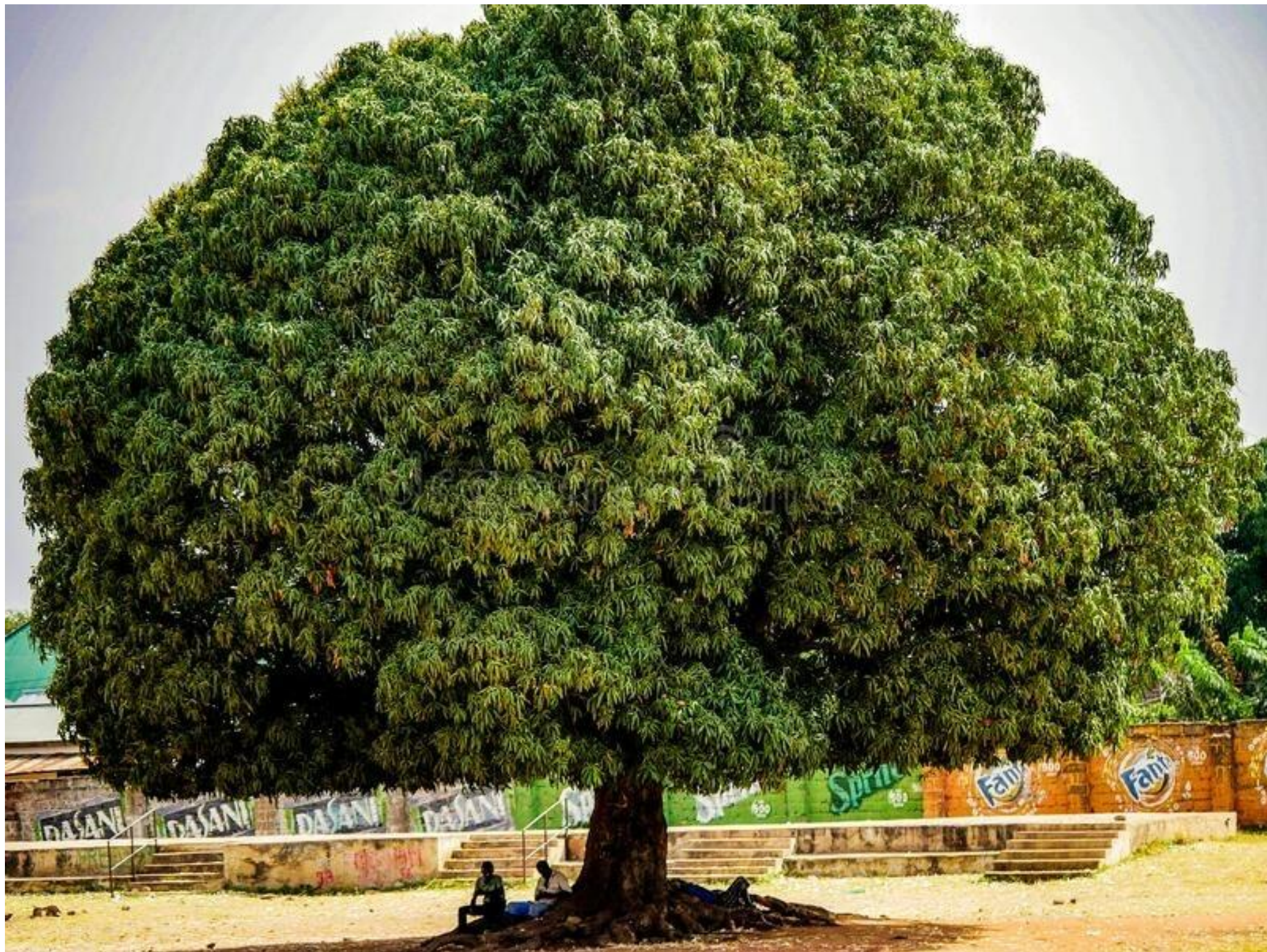


UNDRR

UN Office for Disaster Risk Reduction



SENDAI FRAMEWORK
FOR DISASTER RISK REDUCTION 2015-2030



Early Warning System

Early Warnings for All



Disaster risk knowledge

Systematically collect data and undertake risk assessments

- Are the hazards and the vulnerabilities well known by the communities?
- What are the patterns and trends in these factors?
- Are risk maps and data widely available?



Detection, observations, monitoring, analysis and forecasting of hazards

Develop hazard monitoring and early warning services

- Are the right parameters being monitored?
- Is there a sound scientific basis for making forecasts?
- Can accurate and timely warnings be generated?



Preparedness and response capabilities

Build national and community response capabilities

- Are response plans up to date and tested?
- Are local capacities and knowledge made use of?
- Are people prepared and ready to react to warnings?

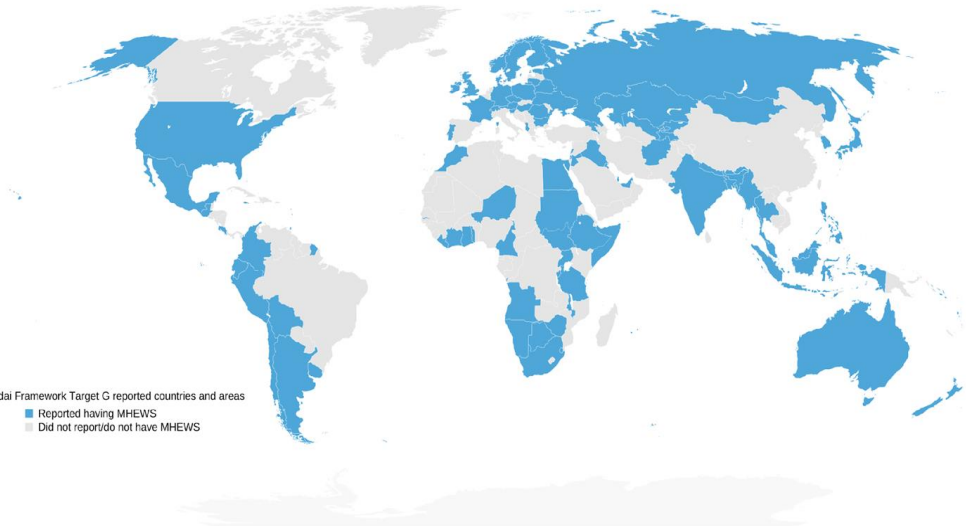


Warning dissemination and communication

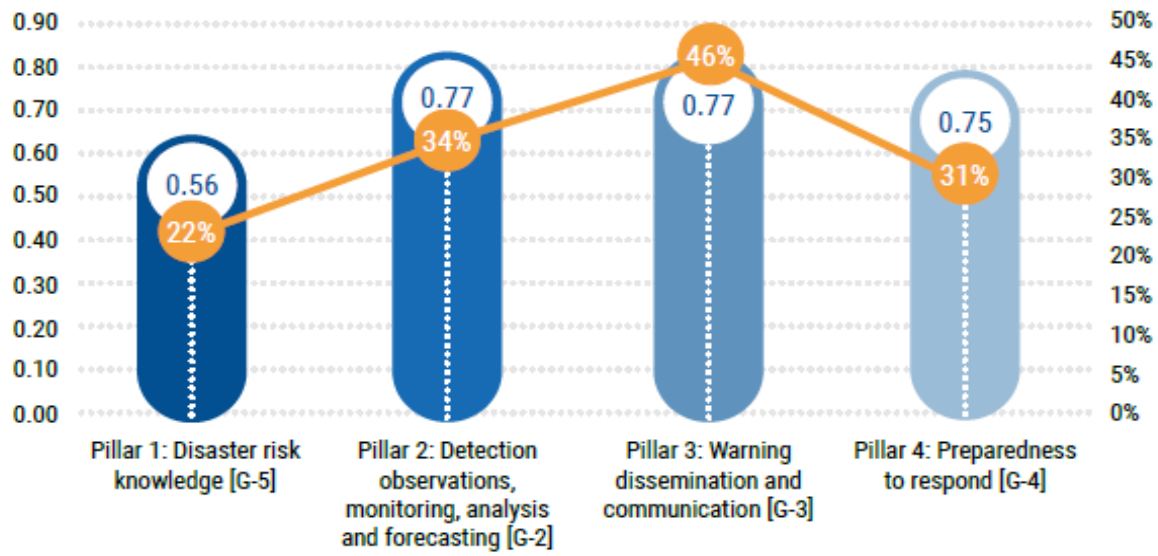
Communicate risk information and early warnings

- Do warnings reach all of those at risk?
- Are the risks and warnings understood?
- Is the warning information clear and usable?

101 countries reporting to have early warning systems



Countries reporting by MHEWS elements



91% of the world's population now lives in a country that is implementing **Common Alerting Protocol**

95% of world's population with access to a **mobile broadband network**

Over 0.25 billion evacuated each year before a disaster strikes between 2015-2021



Multi-Hazard Risk Profiles

Scientific Modelling for Probabilistic Risk Assessment

Bring Risk Information closer to Decision Makers and practitioners



www.riskprofileundrr.org

UNDRR - CIMA Research Foundation

as part of the Programme:
Building Disaster Resilience to Natural Hazards in Sub-Saharan African Regions, Countries and Communities.



Impacts: population and direct economic losses

- Affected people
- Agriculture (main national crops)
- Productive asset:
 - Energy and industrial
 - Service (commercial)
- Housing
- Critical infrastructure:
 - Health
 - Education
 - Transportation (road and railways)



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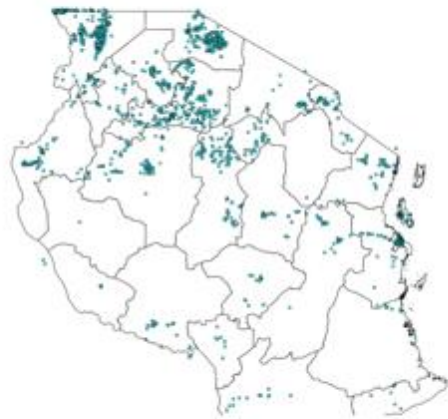
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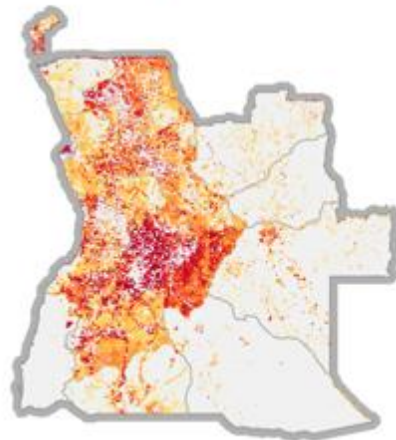


The Importance of National Data

Global Dataset



2.359
schools



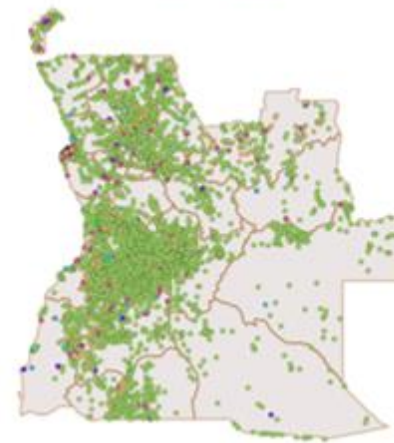
Low High

Education Facilities Distribution

National Dataset



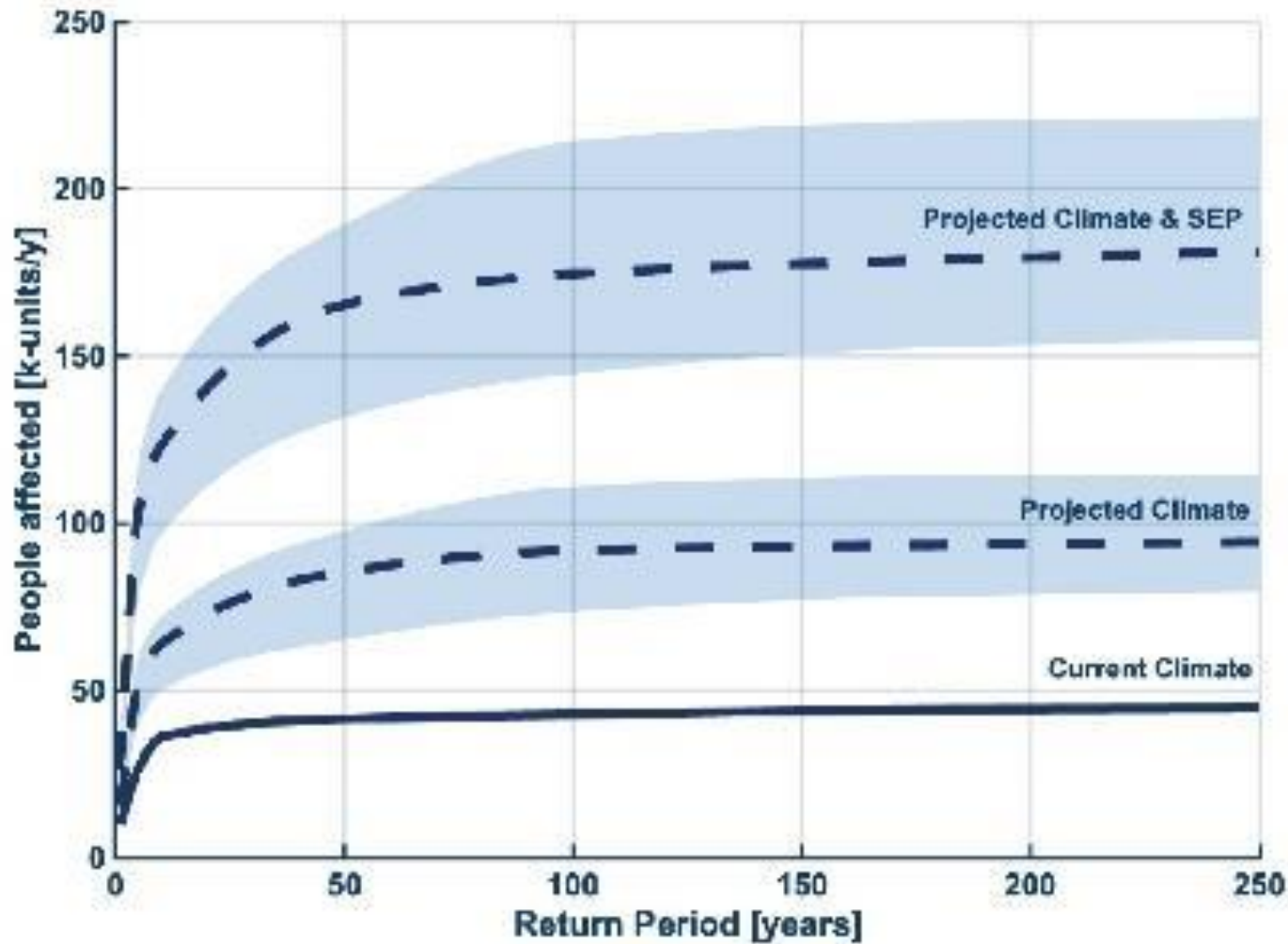
22.595
schools



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The (often) oversimplified complexity of Risks





Strengthening the Use of Risk Information for Early Warning



WORLD
METEOROLOGICAL
ORGANIZATION



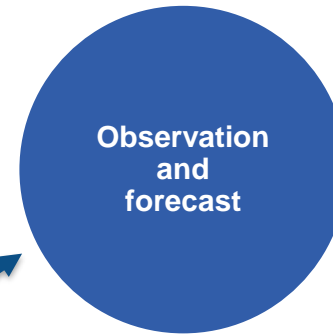
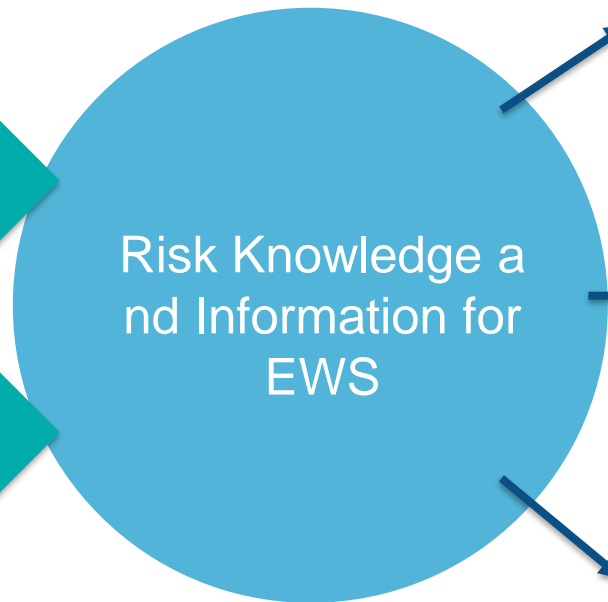
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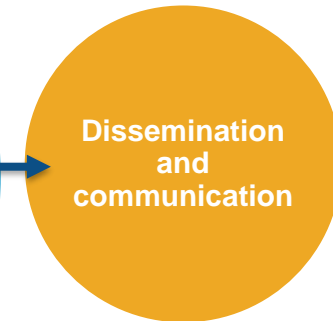
The Handbook structure

Cross-cutting guiding principles

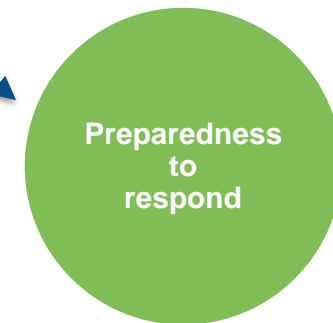


How to use risk information:

- **Process 1**
to support hazard thresholds definition
- **Process 2**
to produce risk-informed warnings
- **Process 3**
to develop impact forecasts



- **Process 4**
to define warning message
- **Process 5**
to communicate in a better and targeted way
- **Process 6**
to improve communication flow and strategy



- **Process 7**
to plan early actions and preparedness measures
- **Process 8**
to support a progressive activation of early actions and emergency arrangements

<https://www.undrr.org/publication/handbook-use-risk-knowledge-multi-hazard-early-warning-systems-2024>

AMHEWAS

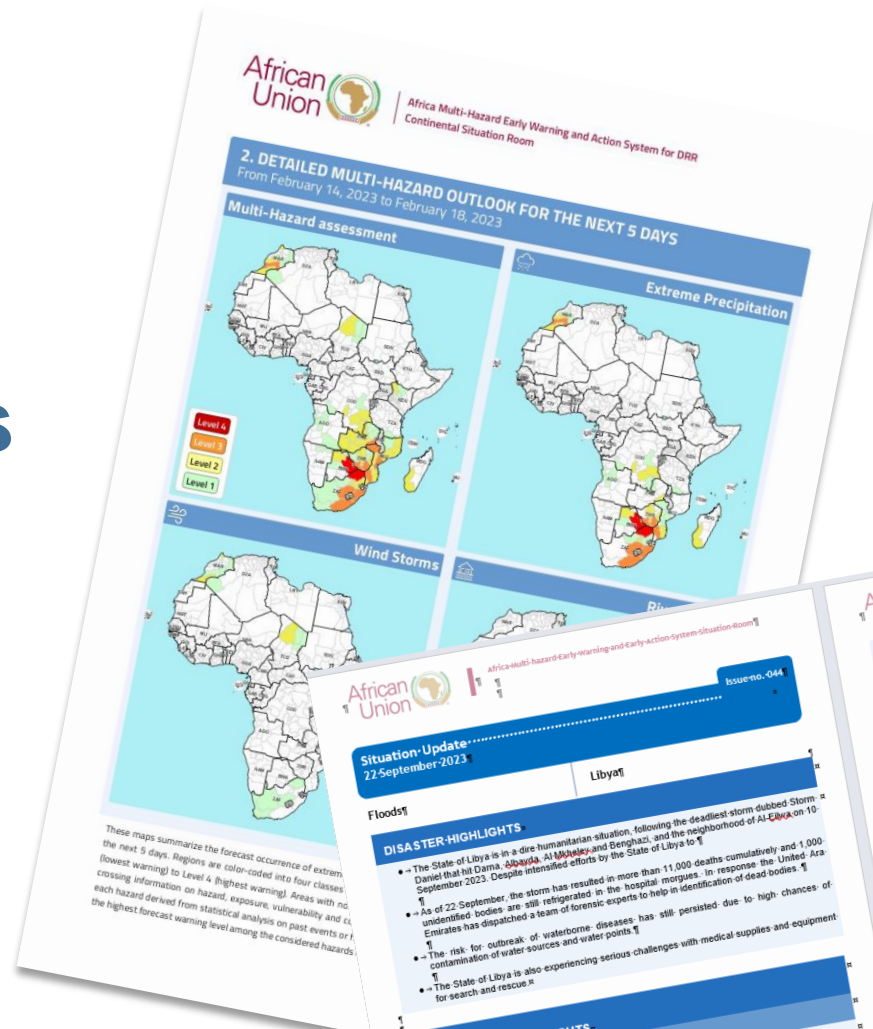
Africa Multi-Hazard Early Warning and Action System for Disaster Risk Reduction



Continental Watch and Disaster Situation Report

- Floods
- Extreme Precipitations
- Windstorms
- Droughts

- Forest Fires
- Flash Floods



African Union | Africa Multi-Hazard Early Warning and Action System (Situation Room) | Issue no. 044

Situation Update
22 September 2023

Floods | Libya

DISASTER HIGHLIGHTS

- The State of Libya is in a dire humanitarian situation, following the deadliest storm dubbed Storm Daniel that hit Derna, Al Bahariya, Al Bahariya and Benghazi, and the neighborhood of Al-Ehaya on 10 September 2023. Despite intensified efforts by the State of Libya to...
- As of 22 September, the storm has resulted in more than 11,000 deaths cumulatively and 1,000 unidentified bodies are still refrigerated in the hospital morgues. In response the United Arab Emirates has dispatched a team of forensic experts to help in identification of dead bodies.
- The risk for outbreak of waterborne diseases has still persisted due to high chances of contamination of water sources and water points.
- The State of Libya is also experiencing serious challenges with medical supplies and equipment for search and rescue.

SUMMARY AND HIGHLIGHTS

LIBYA	
Number of confirmed deaths	6,500
Number of people displaced	46,000
Number of people missing	11,000
Number of damaged ports	1
Number of damaged bridges	2
Number of dams damaged	2

SITUATIONAL OVERVIEW

- Heavy rains brought by Storm Daniel over the weekend of 10 September caused two dams to burst on the usually dry Wadi Derna reversed, traversing through the city and left a trail of devastation on the social-ecosystem of Derna. At least 145 bodies were found on 22 September

African Union | Africa Multi-Hazard Early Warning and Action System (Situation Room) | Issue no. 044

DISASTER HIGHLIGHTS

- The death toll stands at over 11,000 two weeks after flash floods from Mediterranean storm Daniel devastated Derna and surrounding areas on September 11. As of September 22, many people were still missing as recovery efforts gained momentum.
- The impact of Storm Daniel has affected different sectors of the economy and society, among them: Health and nutritional security, food security, water and sanitation, education, and infrastructure.
- Several thousand bodies reportedly remain under the rubble, and local teams require sustained support to continue ongoing identification, documentation and burial services, as well as manage the risk of future health outbreaks of waterborne diseases.
- In addition to humanitarian aid, Libya also needs and has requested technical experts—including specialized civil engineers, medical experts, unexploded ordnance (UXO), water, sanitation and hygiene (WASH) and waste management experts.

Figure 1: 10M Libya showing the affected and inaccessible areas

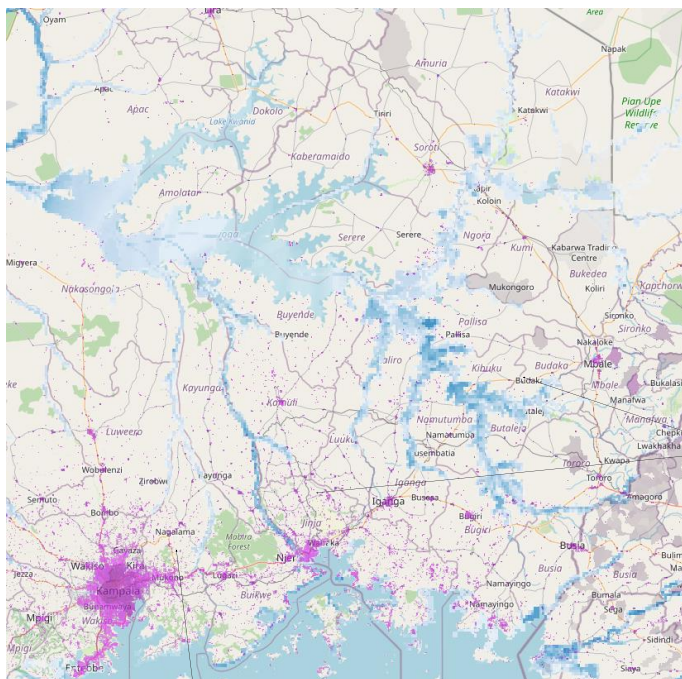
RESPONSE EFFORTS IN PLACE

- Search and rescue efforts are still ongoing with 1,000 dead bodies recovered and lying in the hospital morgues awaiting proper identification.
- The African Union Commission and Africa CDC has intensified its needs assessment efforts with the sending of additional experts to carry out a needs assessment survey and communicate daily with the team in Addis Ababa, Ethiopia to mobilize support for the State of Libya in the short and long term.

From hazard to impacts



$$\text{Impact Index} = \frac{H \times E \times V}{C}$$



AUC Advisory levels

Inundated areas (Hazard)

Population density

Index threshold	Tier	CW Impact forecast
<10 people	0	No event
<500 people	1	Local / Sub-National
<0.5% of Admin1 pop	2	National
<5% of Admin1 pop >10k people	3	Regional
>5% of Admin1 pop >50k people	4	Continental

Mapping Risk Information for EW in Kenya



https://docs.google.com/spreadsheets/d/1HSiiQYoum_0xB5j6_-GoIPMSiFhBhFkEKAp3Qc7UEeg/edit?usp=sharing



Comments and Questions

