

International Mayors Forum
Dakar, Senegal
26 April 2023

Water-related Disaster Risk Reduction and Climate Change

Director, United Nations Centre for Regional
Development (UNCRD)
Kazushige Endo



United Nations Centre for Regional Development

Table of Contents

1. Introduction

2. How Disaster Risk Reduction would be addressed

2-1. Global Level

2-2. Regional Level

2-3. National Level

2-4. Local Level

3. Summary



1. Introduction

Number of recorded natural disaster events, 1900 to 2022

Our World
in Data

The number of global reported natural disaster events in any given year. This includes those from drought, floods, extreme weather, extreme temperature, landslides, dry mass movements, wildfires, volcanic activity and earthquakes.



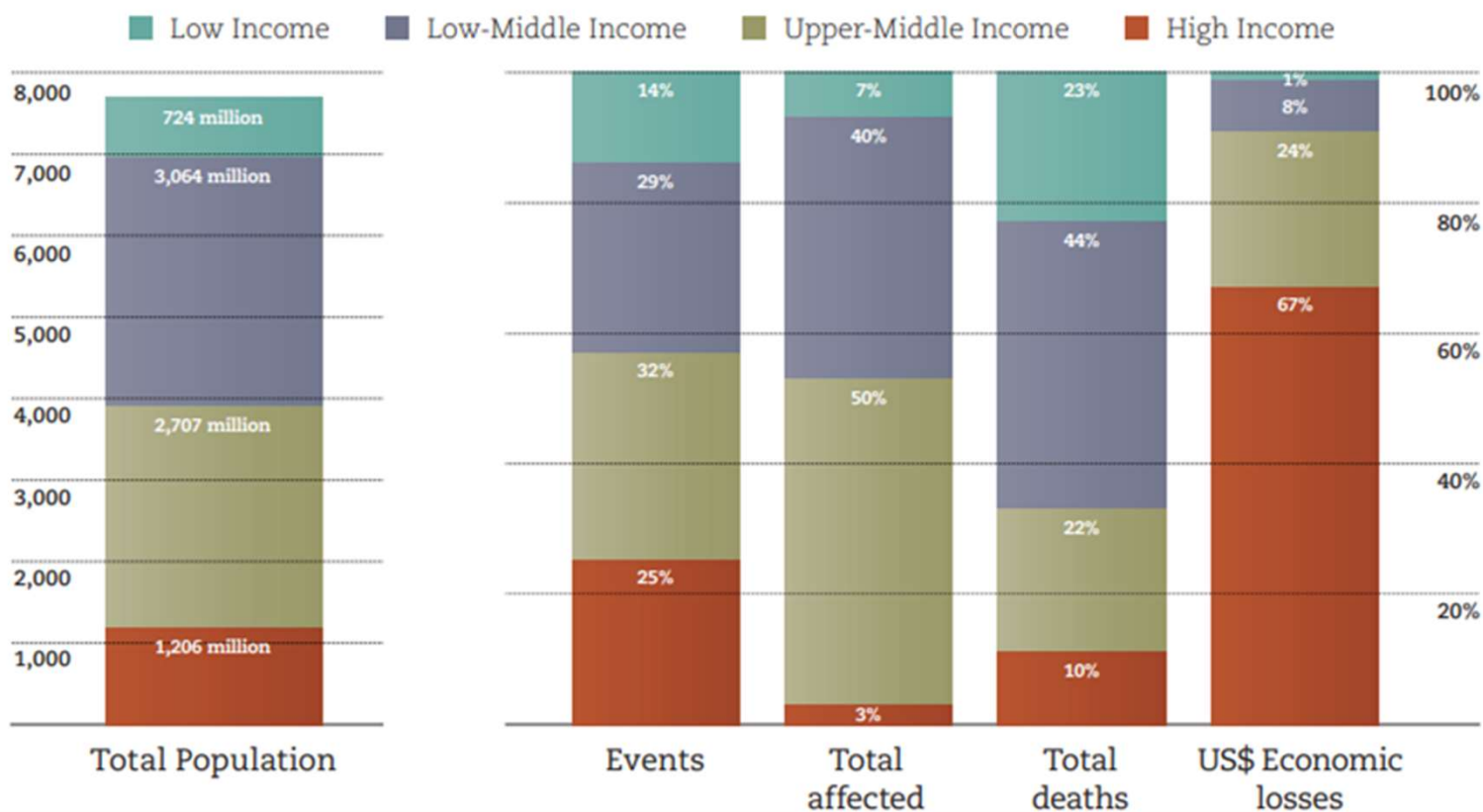
Source: EM-DAT, CRED / Université catholique de Louvain, Brussels (Belgium)

OurWorldInData.org/natural-disasters • CC BY



1. Introduction

Global population distribution by income group (millions) **Proportion of various types of impacts on countries / territories by income group (2000-2019)**



Source: CRED. Human cost of disasters- An overview of the last 20 years 2000-2019



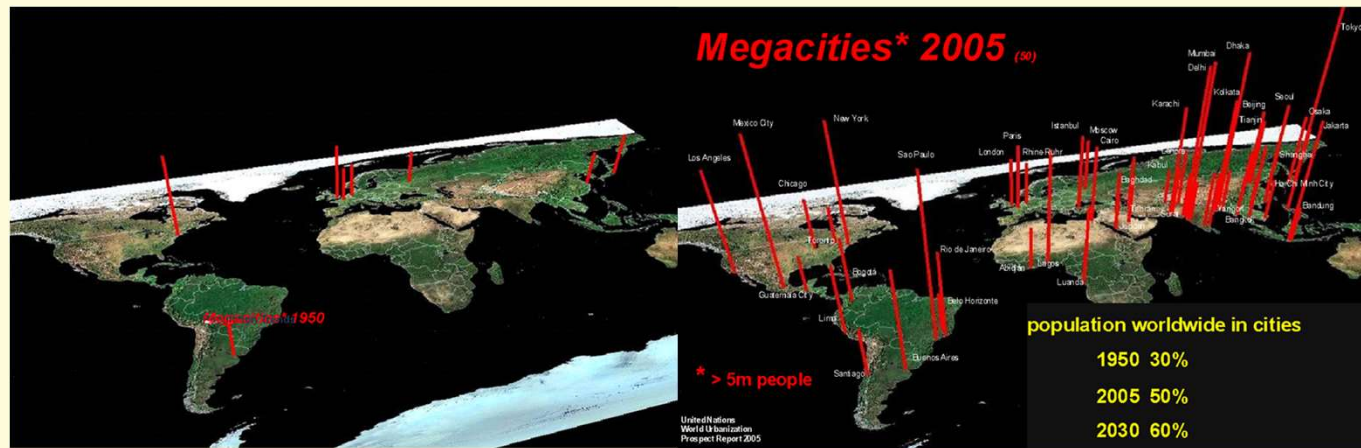
1. Introduction

Why are disasters increasing?

- The global population growth and urbanization
- Impact of climate change
 - Rising temperature & sea level

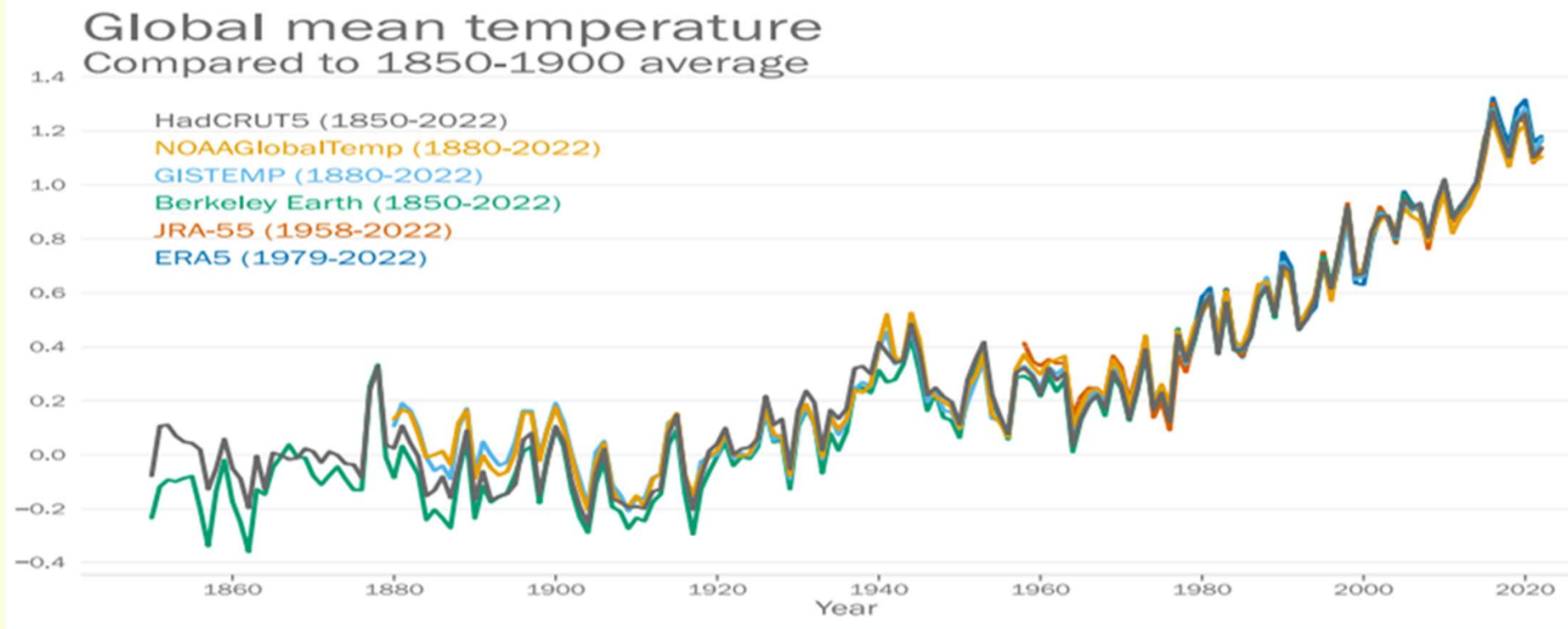


Increase of extreme events



1. Introduction

Global temperature & ENSO

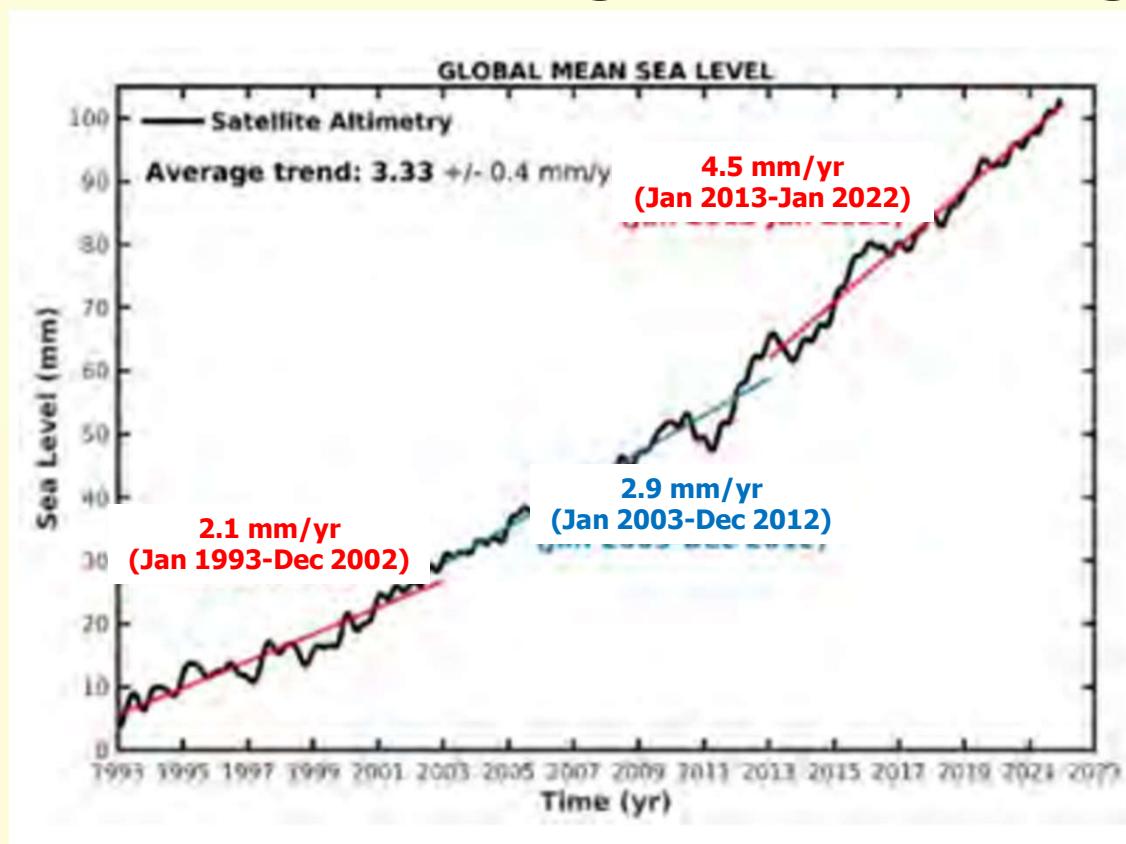


Source: Presentation of Petteri Taalas, Professor, Secretary-General, World Meteorological Organization (WMO), High-level Symposium on “Integrated Water Cycle Management in the post-COVID-19 era” at the 9th International Conference on Flood Management (ICFM9) in GRIPS, Tokyo, Japan on February 18th, 2023



1. Introduction

Global sea level rising at an increasing rate

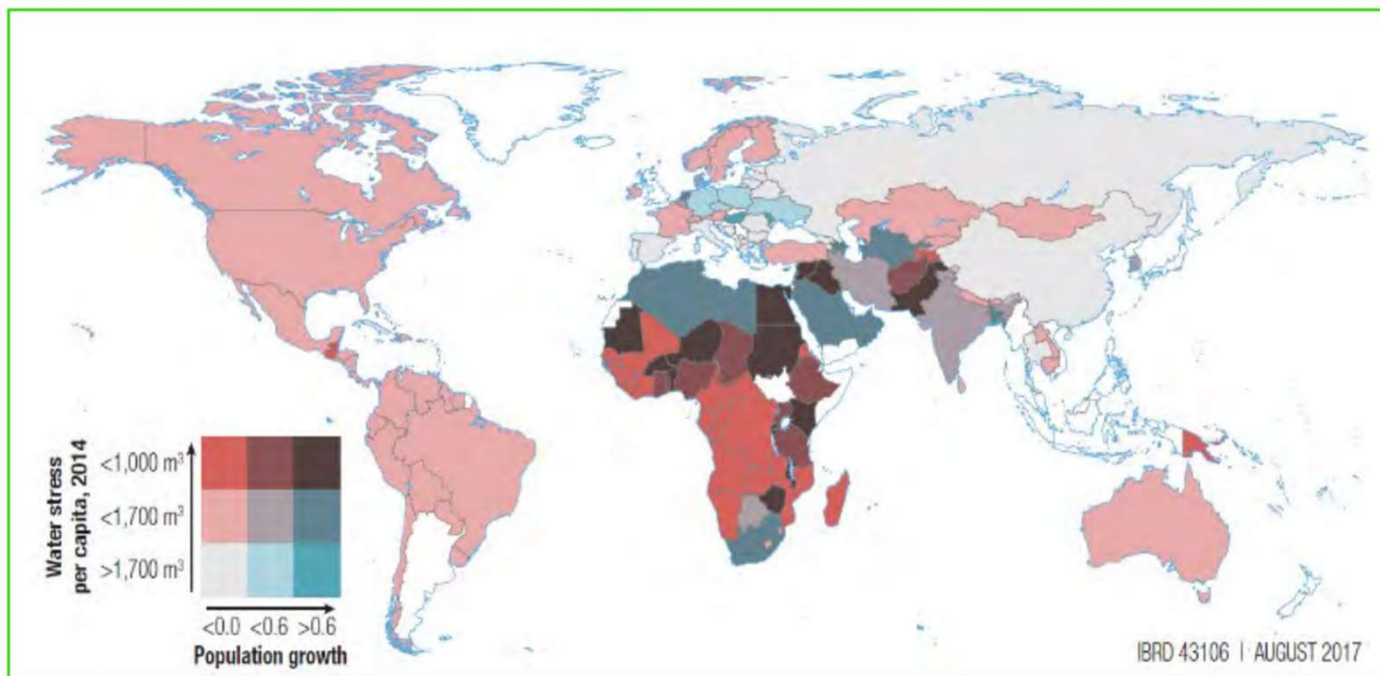


Source: Presentation of Petteri Taalas, Professor, Secretary-General, World Meteorological Organization (WMO), High-level Symposium on “Integrated Water Cycle Management in the post-COVID-19 era” at the 9th International Conference on Flood Management (ICFM9) in GRIPS, Tokyo, Japan on February 18th, 2023



1. Introduction

Water availability & population growth 2050



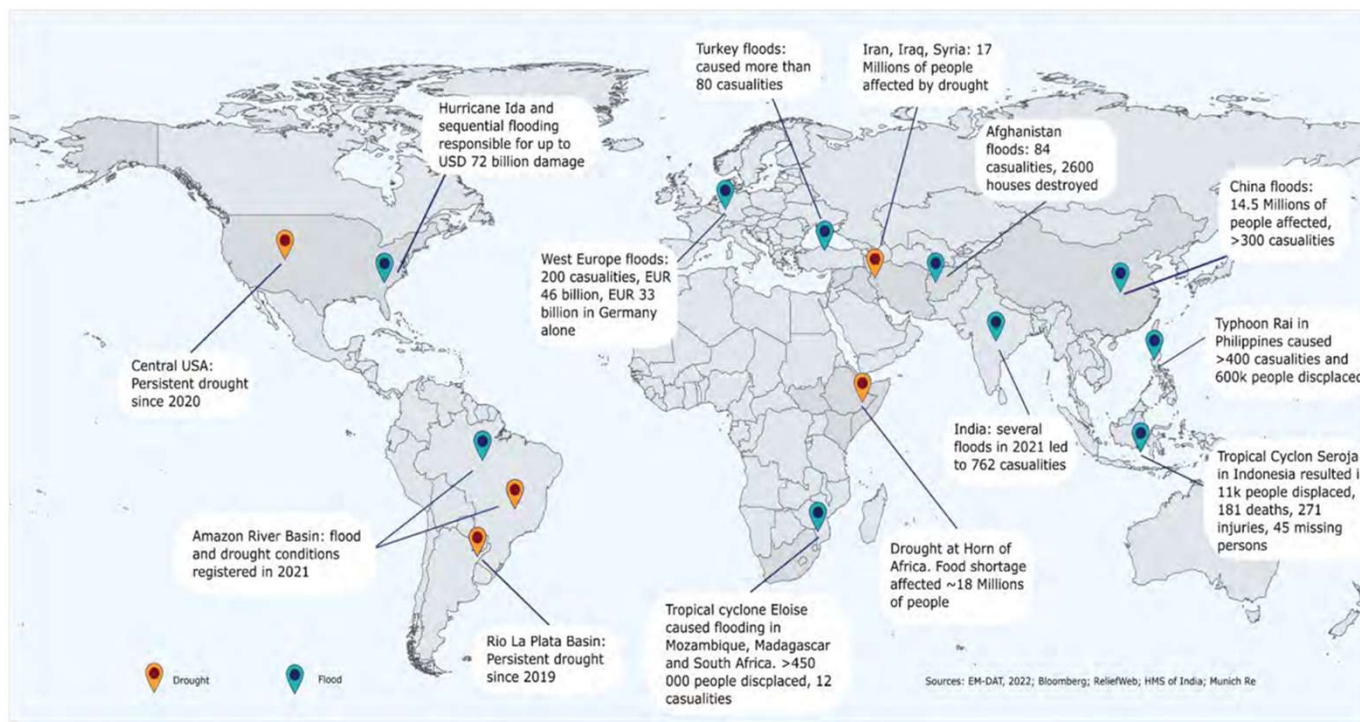
About **4 billion people**, representing nearly two-thirds of the world population, experience **severe water scarcity** during at least **one month of the year**

Source: Presentation of Petteri Taalas, Professor, Secretary-General, World Meteorological Organization (WMO), High-level Symposium on “Integrated Water Cycle Management in the post-COVID-19 era” at the 9th International Conference on Flood Management (ICFM9) in GRIPS, Tokyo, Japan on February 18th, 2023



1. Introduction

High Impact Water Events 2021

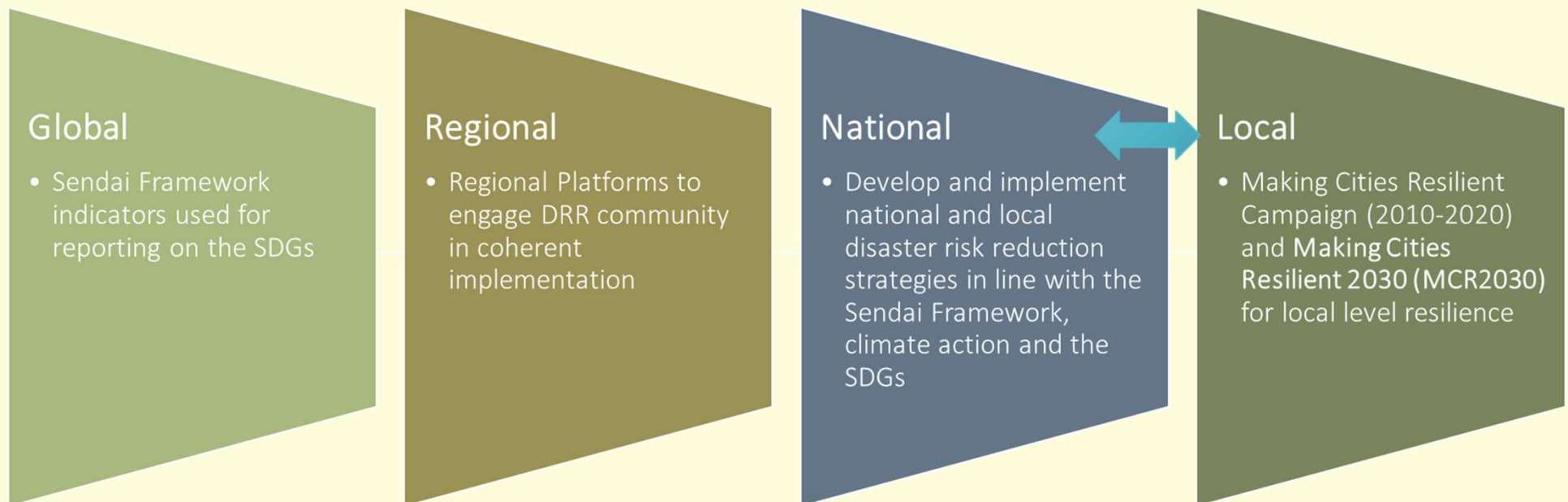


Information on the events was collected from EM-DAT

Source: Presentation of Petteri Taalas, Professor, Secretary-General, World Meteorological Organization (WMO), High-level Symposium on “Integrated Water Cycle Management in the post-COVID-19 era” at the 9th International Conference on Flood Management (ICFM9) in GRIPS, Tokyo, Japan on February 18th, 2023

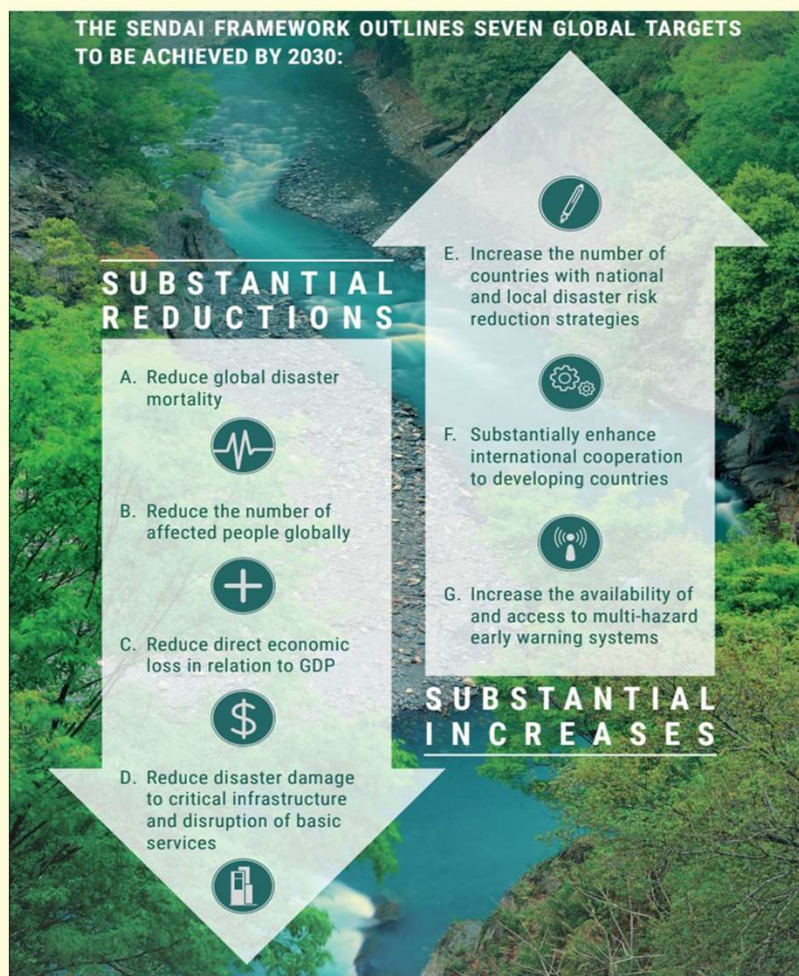


2. How Disaster Risk Reduction would be Addressed



2-1. Global Level

The Sendai Framework for Disaster Risk Reduction



The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework)

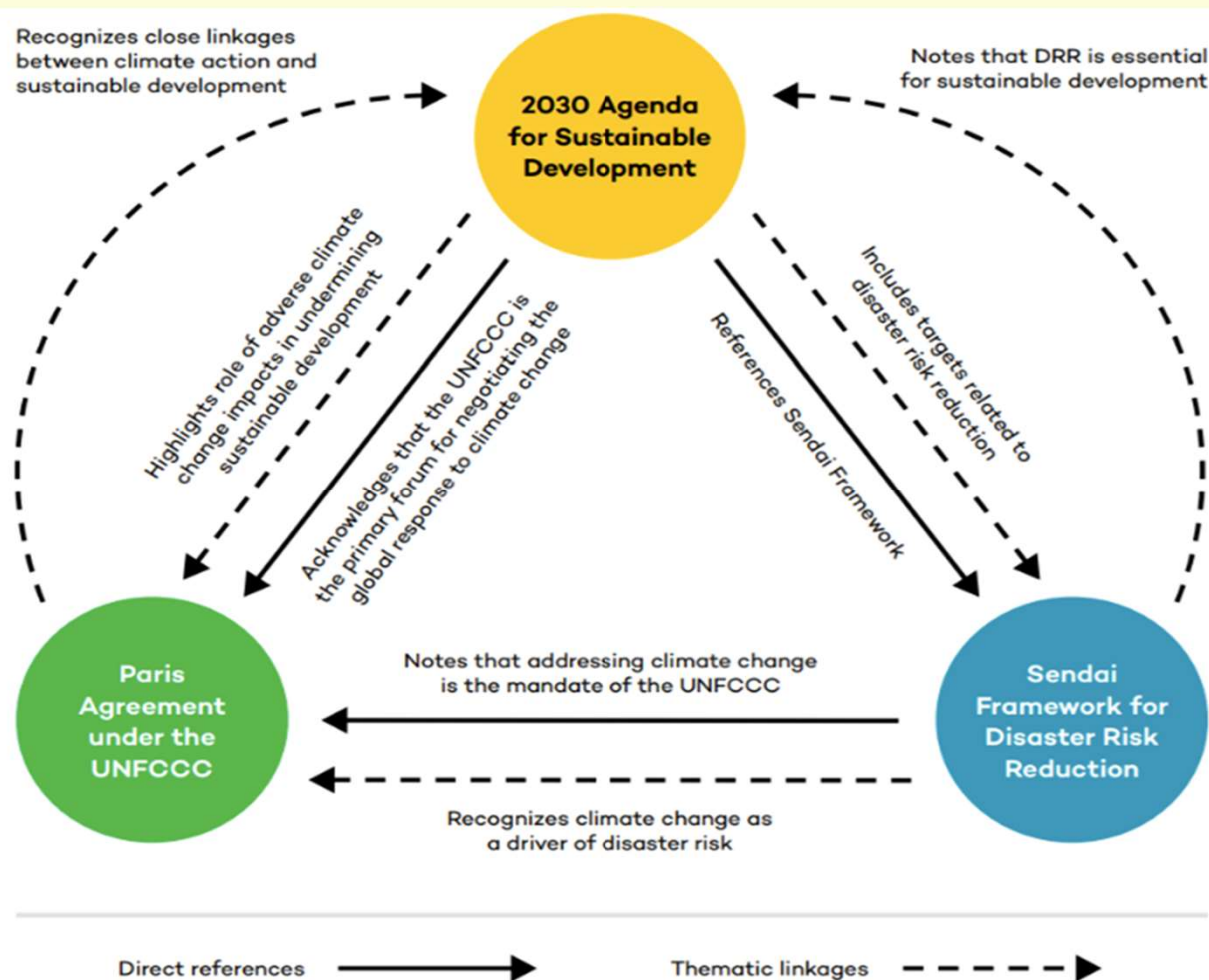
- First major agreement of the post-2015 development agenda and provides Member States with concrete actions to protect development gains from the risk of disaster
- Endorsed by the UN General Assembly following the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR), and advocates for:

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.



2-1. Global Level

DRR in Global Agendas



2-1. Global Level

Early Warning for All

The UN Global Early Warning Initiative for the Implementation of Climate Adaptation



Today I announce the United Nations will spearhead new action to ensure every person on Earth is protected by early warning systems within five years. I have asked the World Meteorological Organization to lead this effort and to present an action plan at the next UN climate conference, later this year in Egypt.



UN Secretary-General Antonio Guterres on World Meteorological Day 23 March 2022

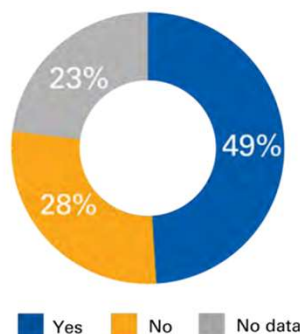
Source: Presentation of Petteri Taalas, Professor, Secretary-General, World Meteorological Organization (WMO), High-level Symposium on “Integrated Water Cycle Management in the post-COVID-19 era” at the 9th International Conference on Flood Management (ICFM9) in GRIPS, Tokyo, Japan on February 18th, 2023



2-1. Global Level

Current State of MHEWS Globally

- An enhanced data collection campaign (the **WMO Performance Monitoring System**) conducted since March 2022 shows that significant MHEWS gaps remain globally
- A **composite Early Warning Index** will be developed with Members and key partners in the months ahead.



Percentage of WMO Members reporting to have MHEWS

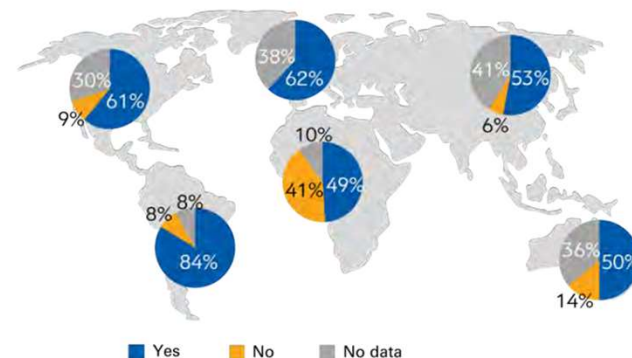
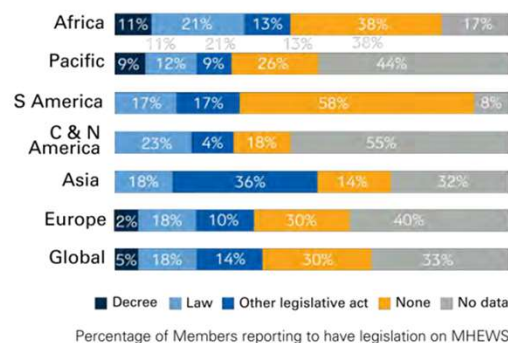


Figure 4: Percentage of countries reporting to have Standard Alerting Procedures (SAPs)



Percentage of Members reporting to have legislation on MHEWS

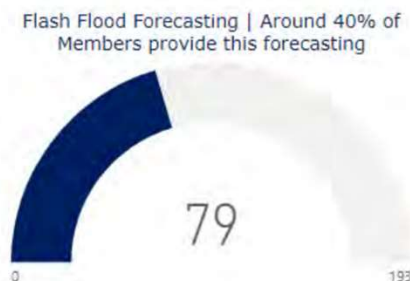
Ongoing data collection to coordinate with WMO data:
The **UNDRR Sendai Framework Monitoring System**, as part of Sendai Framework for Disaster Risk Reduction 2015-2030
Mid-Term Review

Source: Presentation of Petteri Taalas, Professor, Secretary-General, World Meteorological Organization (WMO), High-level Symposium on “Integrated Water Cycle Management in the post-COVID-19 era” at the 9th International Conference on Flood Management (ICFM9) in GRIPS, Tokyo, Japan on February 18th, 2023



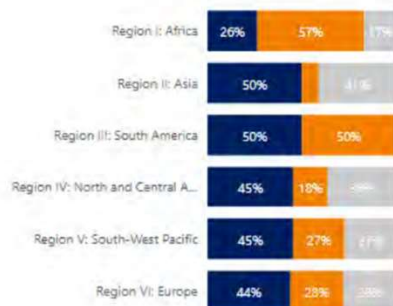
2-1. Global Level

Flood and Drought Forecasting: 193 WMO Members



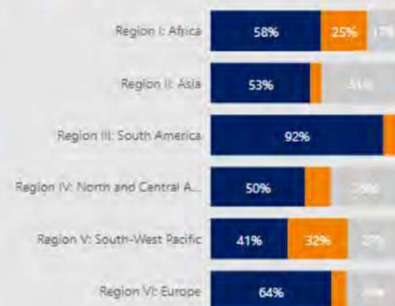
Flash Flood Forecasting | In Region I (Africa) the provision is lowest, applying only to a quarter of Members

● yes ● no ● answer not provided



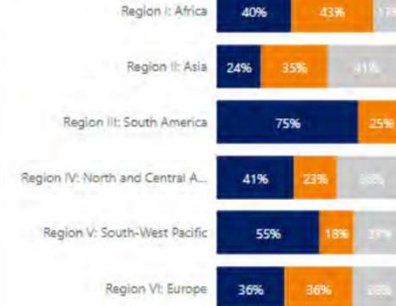
Riverine Flood Forecasting | Only in Region V (South-West Pacific) less than half of Members have it in place

● yes ● no ● answer not provided



Drought Forecasting | In Region II (Asia) only a quarter of members provide this

● yes ● no ● answer not provided



Source: Presentation of Petteri Taalas, Professor, Secretary-General, World Meteorological Organization (WMO), High-level Symposium on “Integrated Water Cycle Management in the post-COVID-19 era” at the 9th International Conference on Flood Management (ICFM9) in GRIPS, Tokyo, Japan on February 18th, 2023



2-2. Regional Level

High-level Experts and Leaders Panel on Water and Disasters (HELP)

Objectives:

- ✓ Raise awareness and promote concrete actions to address the issue of water and disasters

Global Position:

- ✓ Independent International Panel established by UN Secretary-General's Advisory Board on Water and Sanitation (UNSGAB) in 2007

Chair: Dr. Han Seung-soo, Former Prime Minister of Republic of Korea



Dr. Han Seung-soo
Chair of HELP

Members (20):

- ✓ Ministers of Namibia (AMCOW President), Indonesia, Japan, Netherlands, and U.S.A.; Commissioner of European Union
- ✓ Heads of International Orgs of WMO, UNESCO, UNISDR, WB, ADB, KOICA, JICA, ESCAP, and OECD,
- ✓ Heads of Civil Society: GWP, WWC, NARBO, PSI, and BIT

Advisors (10)

- ✓ ICHARM, Sichuan U, Deltares, Zurich Insurance, GWP, JWA, Japan, Korea, Myanmar, and the Netherlands,

Secretariat: GRIPS in collaboration with UNCRD



2-2. Regional Level

Signing Partnership Agreement between HELP/GRIPS and UNCRD/DESA

Symposium Organizers: HELP/GRIPS, UNCRD/DESA, ICOMOS
in International Symposium on Water and Culture

- Hosts: Dr. Han Seung-soo, Chair of HELP, Mr. Akihiko Tanaka, President of GRIPS and Mr. Kazushige Endo, Director of UNCRD
- Signing Ceremony between GRIPS and DESA for hosting UNCRD Tokyo Satellite Office
- Message by Mr. Lie Zhenmin, UN-USG and Head of DESA



Source: Presentations of Kenzo Hiroki, Professor, National Graduate Institute for Policy Studies (GRIPS), Japan; and Coordinator, High-level Experts and Leaders Panel on Water and Disasters (HELP) at UNCRD 50th Anniversary Commemorative Event Organized by UNCRD on 23 February 2022



2-3. National Level

Associated Programme on Flood Management (APFM)

Last 20 years, WMO promotes the concept of Integrated Flood Management (IFM)

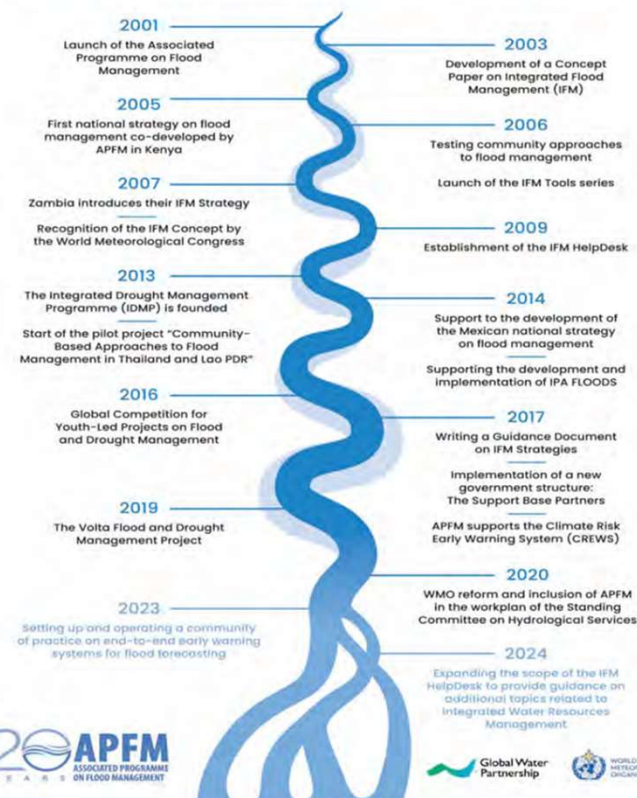


IFM integrates **land use** and **water resources** in a river basin, in accordance with Integrated Water Resources Management, with the objective of **maximizing net benefits** derived from the use of floodplains and **minimizing loss of life** due to flooding. IFM keeps in consideration environmental preservation, balancing development needs with **flood risk** towards **sustainable development**

<http://www.floodmanagement.info>



Milestones of the Associated Programme on Flood Management (APFM)



Source: Presentation of Petteri Taalas, Professor, Secretary-General, World Meteorological Organization (WMO), High-level Symposium on "Integrated Water Cycle Management in the post-COVID-19 era" at the 9th International Conference on Flood Management (ICFM9) in GRIPS, Tokyo, Japan on February 18th, 2023



2-3. National Level

IFM Capacity Building and Training

- Training of Specific topics and contact with experts :
 - Integrated flood management,
 - urban flood management,
 - community-based approaches
- Development of National Strategies that apply the IFM concept

**Training &
Capacity
Building**



WMO OMM <https://www.floodmanagement.info/get-help/capacity-building/>



**IFM for flood
hazard mapping,
Japan**



National strategy on IFM, Lao PDR

Source: Presentation of Petteri Taalas, Professor, Secretary-General, World Meteorological Organization (WMO), High-level Symposium on “Integrated Water Cycle Management in the post-COVID-19 era” at the 9th International Conference on Flood Management (ICFM9) in GRIPS, Tokyo, Japan on February 18th, 2023



2-4. Local Level

Making Cities Resilient 2030 (MCR2030)

- Unique cross-stakeholder initiative for improving local resilience through advocacy, sharing knowledge and experiences, establishing mutually reinforcing city-to-city learning networks, injecting technical expertise, connecting multiple layers of government and building partnerships.
- Through delivering a clear 3-stage roadmap to urban resilience, providing tools, access to knowledge and monitoring and reporting tools, MCR2030 supports cities on their journey to reduce risk and build resilience.
- MCR2030 aims to ensure cities become inclusive, safe, resilient and sustainable by 2030, contributing directly to the achievement of Sustainable Development Goal 11 (SDG11) “Make cities and human settlements inclusive, safe, resilient and sustainable”, and other global frameworks
- 331 Cities joined the initiative as of now.



3. Summary

1. The number of natural disasters has been increasing in recent years and their impact has been expanding. How to reduce disaster risk requires significant attention.
2. Effective disaster risk reduction requires joint efforts at the global, regional, national, and local levels.



Thank you very much for your attention.

Director, United Nations Centre for Regional Development
(UNCRD)

Kazushige Endo



United Nations Centre for Regional Development (UNCRD)