



UNITED NATIONS
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International Tsunami Disaster Prevention Association

Disaster Risk Reduction and Sustainable Development Goals

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SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



➤ Transforming our world

➤ No one will be left behind

2030 Agenda for Sustainable Development

➤ Unanimously adopted by the United Nations General Assembly in September 2015.

- +Paris Agreement and Sendai Framework for DRR
- “silo approach” ↔ multi-entry / a lot of check points



➤ 17 Goals (Development Goals = SDGs)

- Poverty; hunger; health; education; gender; water and sanitation; energy; economy and employment; industry, infrastructure and innovation; equity; urban; consumption; climate; marine resources; terrestrial ecosystem; peace and justice; and global partnership
- 169 Targets and 232 Indicators
- Balancing economy, society, and environment



SDGs and DRM (1)



11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by **disasters**, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

11.5.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population

11.5.2 Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters



SDGs and DRM (2)



11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic **disaster** risk management at all levels

11.b.1 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030

11.b.2 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies



Development aid and DRM

Frequent disaster

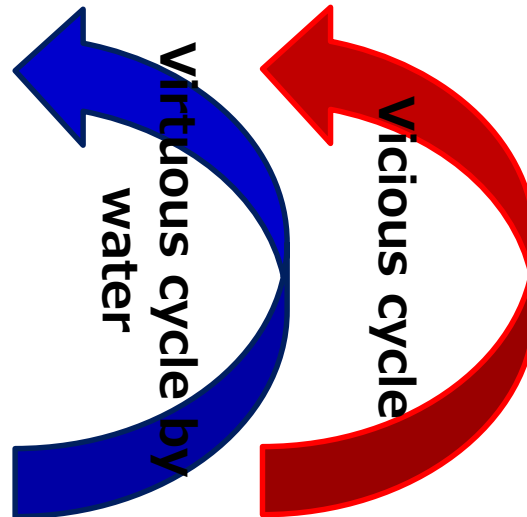
**Better life,
Higher education**

Low productivity,
few excess

Manifold poverty

**Productive,
high growth**

**High rate of
mortality**



**Poverty,
low growth**

Daily risk

Investment for
infrastructure

**Insufficient
investment**

Vulnerability

**Prosperity,
Enough Excess**

SDGs and DRM (3)

1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and **disasters**.

1.5.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population

1.5.2 Direct economic loss attributed to disasters in relation to global GDP

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural **disasters** in all countries.

13.1.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population

13.1.2 Number of countries that adopt and implement national disaster risk reduction strategies in line with the SFDRR 2015-2030

13.1.3 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies



SDGs and DRR → Risk-informed development

SDGs and DRM (4)

2 ZERO HUNGER



2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other **disasters** and that progressively improve land and soil quality.

2.4.1 Proportion of agricultural area under productive and sustainable agriculture





"Disasters cost hundreds of billions of dollars, hitting the poorest countries disproportionately and pushing millions into poverty. We must tackle disaster risks and leave a more resilient planet to future generations."

António Guterres,
United Nations Secretary-General



#IDDR2018
#ResilienceForAll

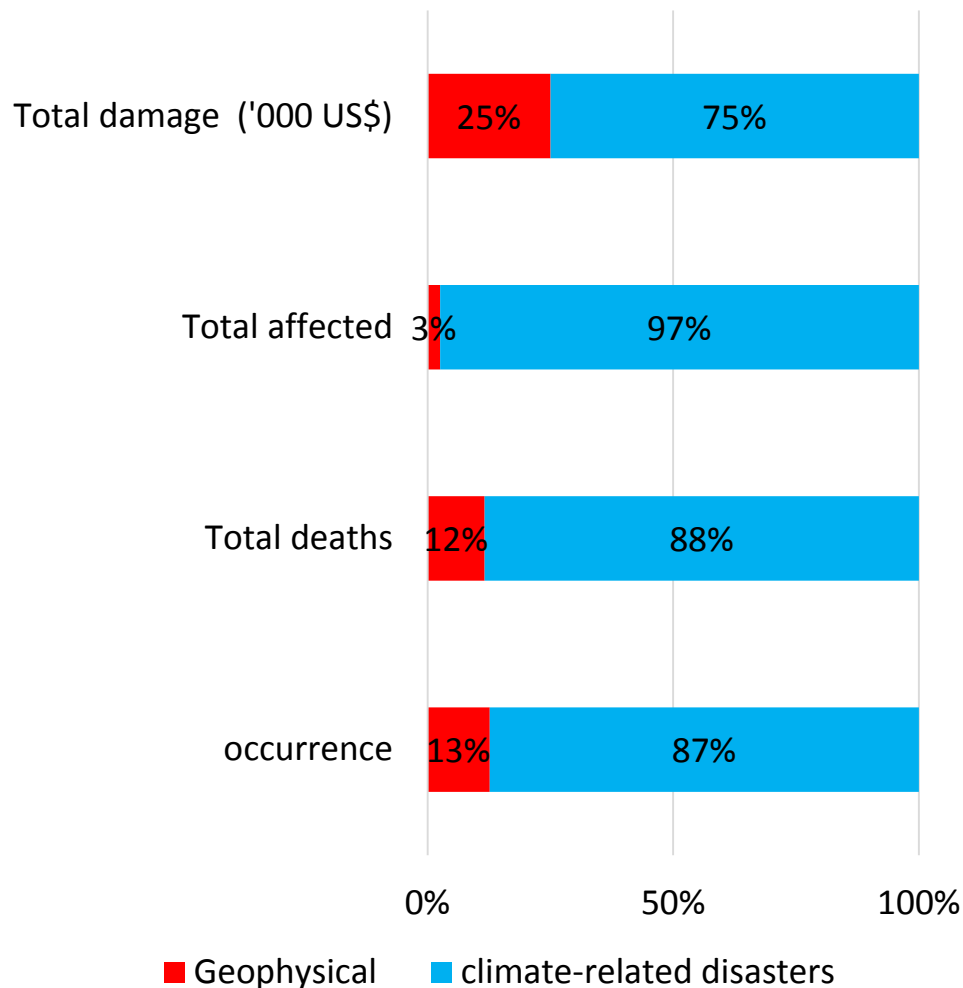


SDGs and DRR → Risk-informed development

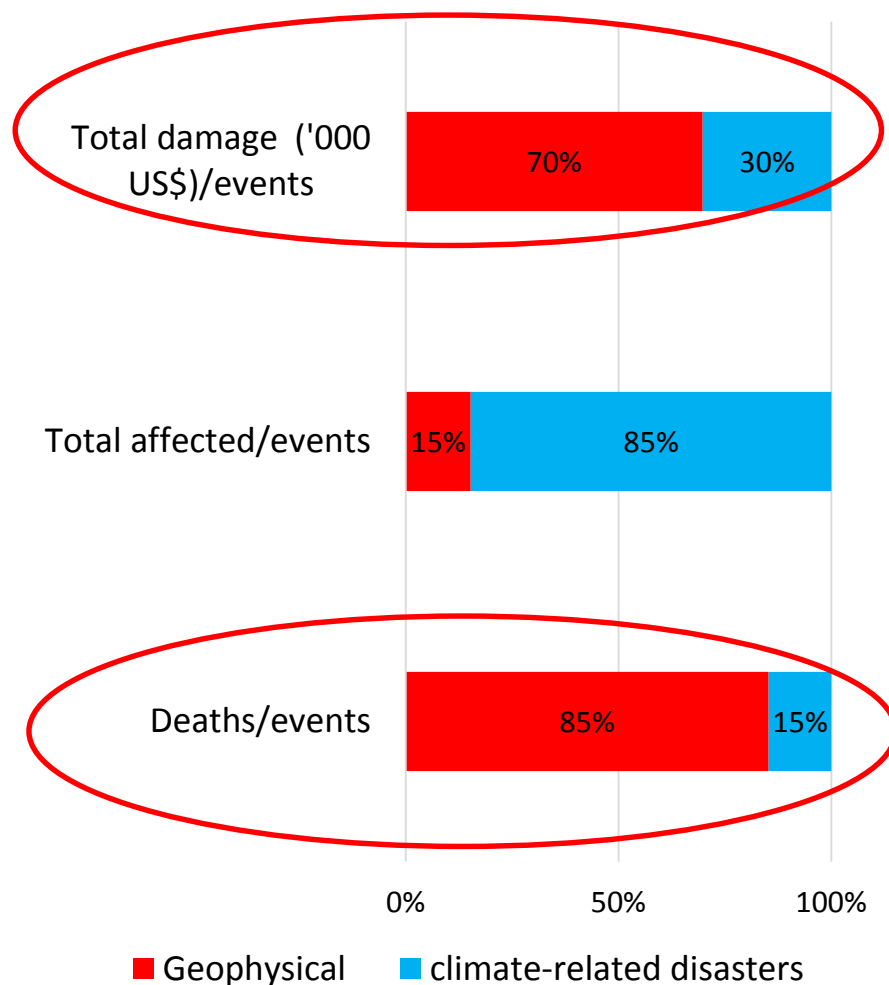
Global overview of disaster impacts

→ Geophysical disasters are deadliest and costliest

Disaster statistics 1900-July 2018



Intensity (Impacts/event)



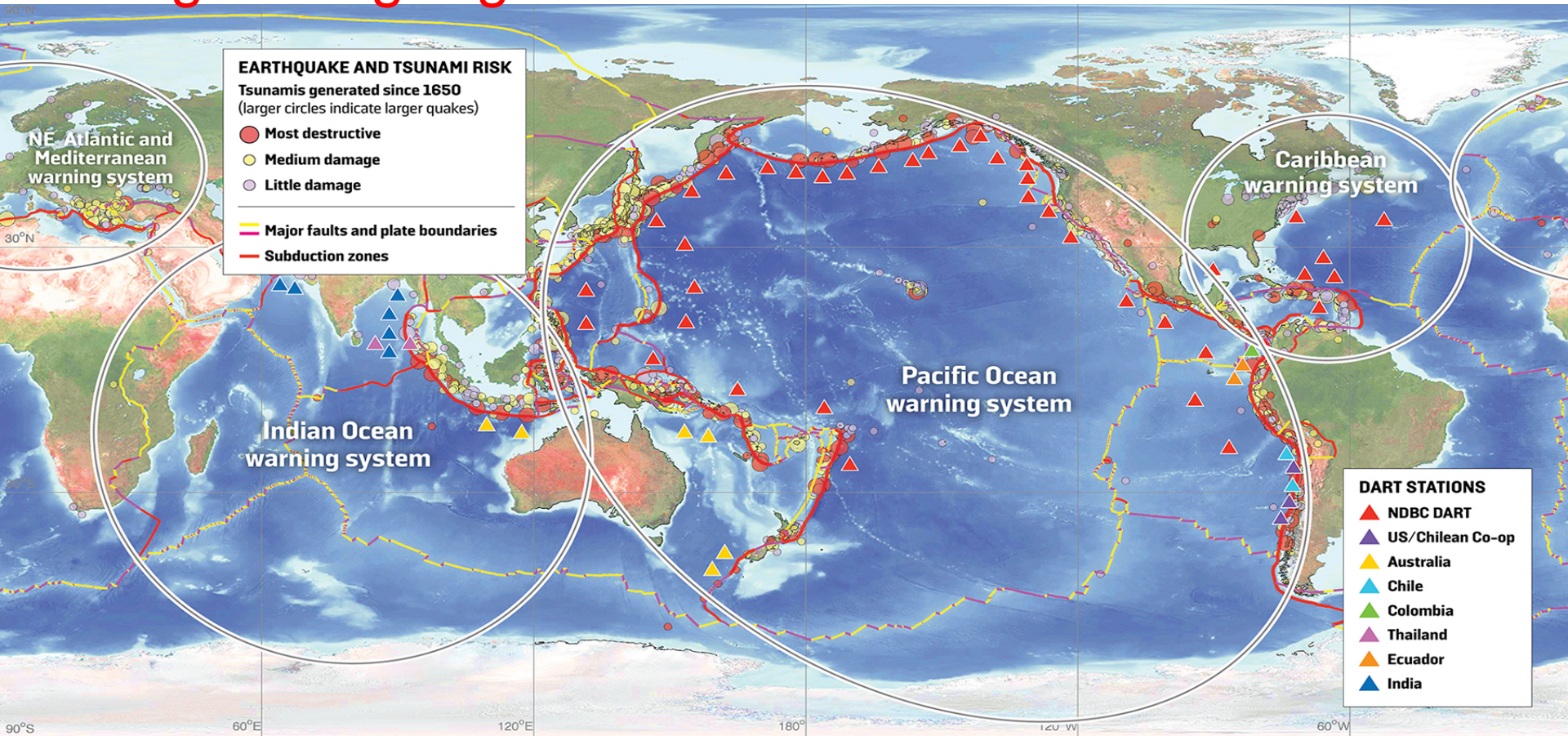


Increasing complexities of disasters → SFDRR

Priority 1 (Risk knowledge and information)

- **Types:** Biological, Environmental, Geological/geophysical, hydrometeorological, technological hazard (UNISDR) + social
- **Cases**
 - Natural and technological hazard: The 2011 Japan tsunami (earthquake, tsunami, nuclear crisis).
 - The twin earthquake-tsunami-soil liquefaction: Palu (Sulawesi) Indonesia, 28 September 2018
 - Climate and geophysical disasters: Indonesia, the Philippines
 - Biological and Environmental hazard: Ebola crisis during drought in Africa
 - Socio-natural hazards: Drought and conflict in Africa,
 - Technological + environmental hazard: oil spills in ocean

Are we ready for the next big tsunami? → The need for strengthening regional collaboration



Tsunami Trouble Spots and Monitoring Systems

A global map locating historical tsunamis since 1650 and the deep-ocean assessment of tsunamis (DART) stations operated by eight entities as of July. Ovals indicate four major regional tsunami warning systems that together comprise the global system.

SOURCE: EVOLUTION OF TSUNAMI WARNING SYSTEMS AND PRODUCTS BY EDDIE BERNARD AND VASILY TITOV, PUBLISHED IN 2015 IN PHILOSOPHICAL TRANSACTIONS, A MATHEMATICAL, PHYSICAL, AND ENGINEERING SCIENCES JOURNAL OF THE LONDON-BASED ROYAL SOCIETY

Are we ready
for the next
big tsunami?

Regional
collaboration

Pacific Tsunami Warning and Mitigation System:

In the Pacific Ocean, as well as the Caribbean Sea to some extent, NOAA takes the lead, according to Arcas. The Pacific Tsunami Warning Center in Honolulu, established in 1949 after the 1946 Aleutian Island earthquake and tsunami, analyzes data and sends tsunami warnings to national centers and authorities, as well as regional centers, including those in Japan, China, New Zealand, Australia, Chile, Peru, and Colombia.

Indian Ocean Tsunami Warning and Mitigation System: The Indian Ocean system [encompasses](#) 25 seismographic stations and eight [DART buoys](#) owned and operated by Australia, India, and Thailand, which relay data to 26 national information centers (as of 2015), as well as the U.S. warning center in Hawaii and the Japan Meteorological Agency.

Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions: With 48 countries and territories participating

The Palu tsunami : The need for ‘End- to-end and people- centred’ EWS

- Lack of public’s disaster preparedness
- Uncertainty of the technology and system of TEWS
- The need for regional disaster management reforms and strengthening local government capacity





Key messages

- SDGs and DRR → Risk-informed (risk-premised) development
- Global overview of disaster impacts → Geophysical disasters are deadliest and costliest
- Technical and societal influence of TEWS
→ Understanding broader context of vulnerability
- Increasing complexities of disasters
→ SFDRR Priority 1 (Risk knowledge and information)
- Are we ready for the next big tsunami?
→ The need for strengthening regional collaboration
- The need for 'End-to-end and people-centred' EWS
→ SFDRR Priority 4 (Disaster preparedness)