

Hazards and disaster risks

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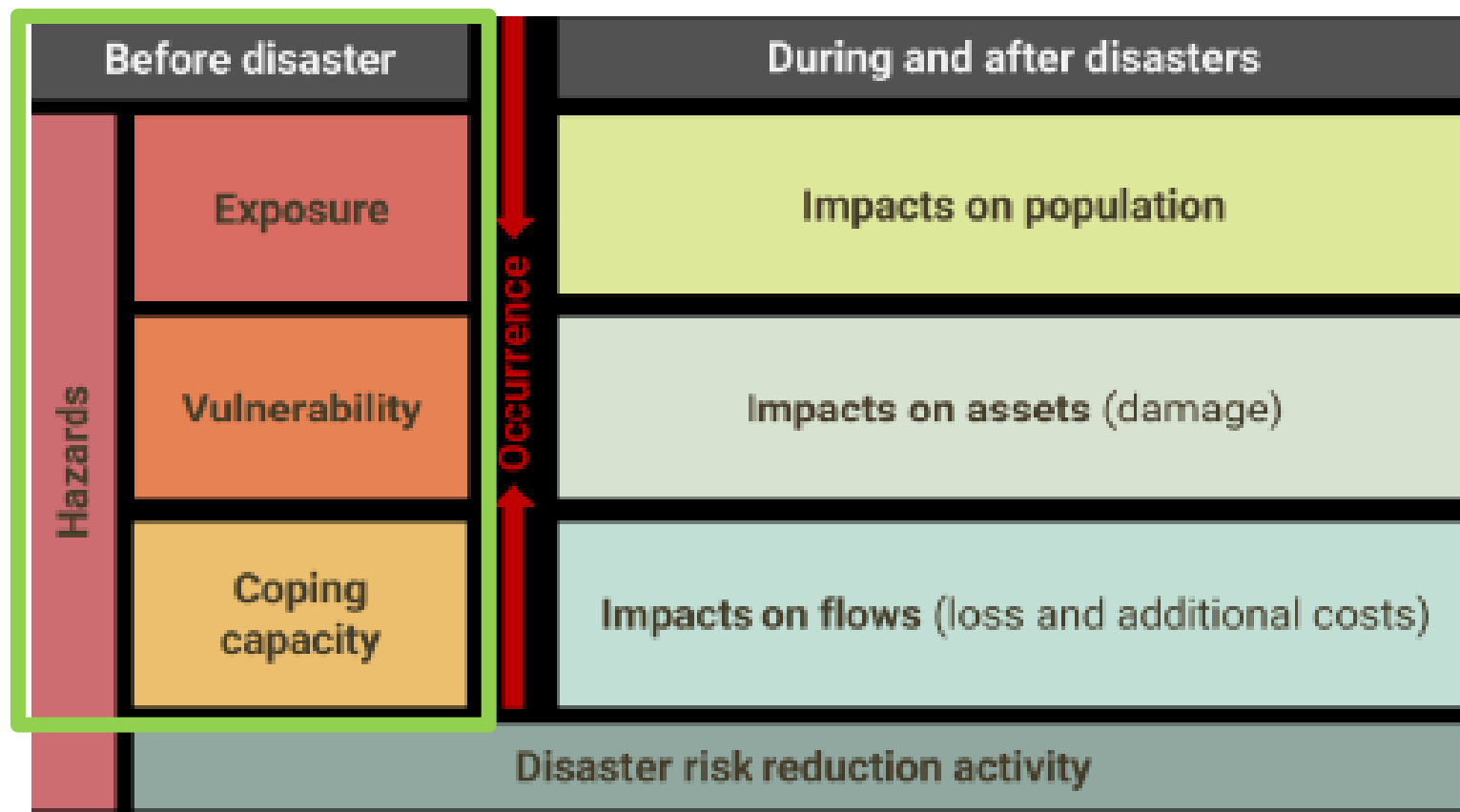
United Nations Statistical Institute for Asia and the Pacific

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Components of disaster related statistics

The proposed update:



Let's start with some definitions

A **hazard** is a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.

- * Natural (e.g., earthquake)
- * Human-induced (anthropogenic; e.g., Oil spill)
- * Or a combination of natural and human induced (e.g., soil erosion)

Sometimes we can have **multi-hazards** which are:

- (1) the selection of multiple major hazards that the country faces, and
- (2) the specific contexts where hazardous events may occur simultaneously, cascadingly or cumulatively over time, and taking into account the potential interrelated effects.

Classifying hazards

At the global level: **Hazard Information Profiles (HIPs)**

You may have national classifications as well.

UNDRR-ISC Hazard Information Profiles - 2025 Update

MH0501 / METEOROLOGICAL and HYDROLOGICAL / Temperature-related

Heatwave

Definition

A heatwave is a marked, unusual period of hot weather over a region persisting for at least two or three consecutive days and nights during the hot period of the year based on local climatological conditions, with thermal conditions recorded above given thresholds (WMO & WHO, 2015).

Reference

WMO and WHO, 2015. Heatwaves and Health: Guidance on Warning-System Development. World Meteorological Organization (WMO) and World Health Organization (WHO).
<https://www.who.int/publications/m/item/heatwaves-and-health-guidance-on-warning-system-development> Accessed 16 May 2025.

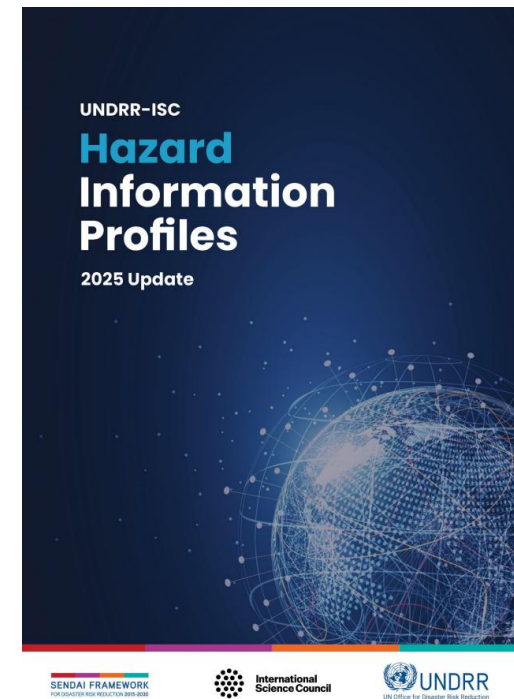
Annotations

Synonyms

Not identified.

Additional scientific description

Besides the World Meteorological Organization (WMO) also uses a definition that has practical utility in addressing human health impacts. It defines heatwaves as "periods of unusually hot and dry or hot and humid weather that have a subtle onset



Classifying hazards



Some additional definitions

Exposure describes the situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas.

Statistics that inform exposure:

- * Population
- * Fixed assets and infrastructure, inventories, environmental assets etc
- * Employment, income etc. that are generated in the exposed area



Base map → Hazard area → Exposure area

Some additional definitions

Vulnerability reflects the conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

One example of vulnerability statistics is level of poverty in an area exposed to a particular hazard.

Can you provide one suggestion of a vulnerability statistic that would be important in your country?

Some additional definitions

Coping capacity is the ability of people, organizations and systems, using available skills and resources, to manage adverse conditions, risk or disasters.

Examples include:

- * Share of population covered by early warning systems
- * Population with emergency reserves of food and water

Defining disaster risk

Disaster risk is the potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

A standard risk formulation for a hazard or group of hazards:

Risk index = $f(\text{exposure}, \text{vulnerability}, \text{coping capacity})$

What can we say in general about the relationship between the variables above?

Time permitting (and for tomorrow recap), for an important hazard in your country, what data is already available and what data is needed to better understand risk based on the definition above?

Thank You!

