

The 2025 Hazard **Information Profiles Update**

Dr. Helene Jacot Des Combes On behalf of the International Science Council

15 October 2025 | Beijing | IRDR Scientific Committee Meeting





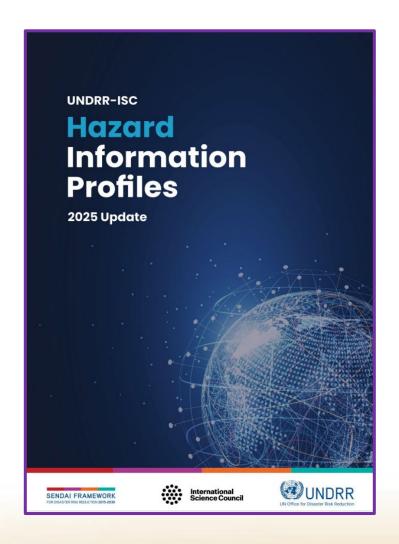


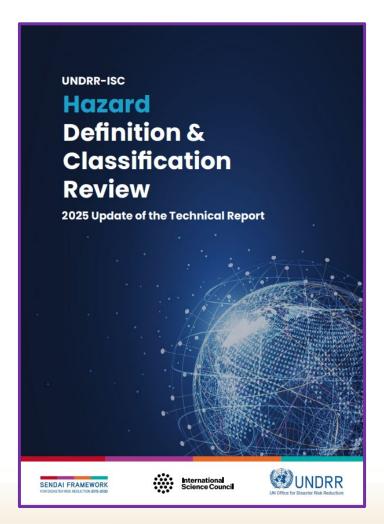






The two reports





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General Context & Objectives

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New identifiers, new classification, new hazards

3 EXAMPLES OF THE UPDATED HIPS

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4 CONCLUSIONS - NEXT STEPS

Next review, potential complementary work











WHY WERE THE HIPS UPDATED?













Why were the HIPs updated?

- Knowledge about hazards is constantly evolving and the HIPs need to reflect this updated information
- Additional information on the multi-hazard context was requested

- Some hazard groups needed to be reorganised to be more 'future proofed'
- Standardised and detailed structure was needed for machine actionability











WHAT'S NEW?

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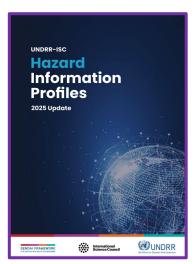








UNDRR-ISC Hazard Information Profiles 2025 update









What's New?

- Knowledge update to reflect this new developments on hazard science
- Information on the multi-hazard context was added
- Information on hazard monitoring was added

- New identifiers were established
- Some hazard groups were reorganised and chapeau HIPs created
- Clarified structure and specific coding for machine actionability





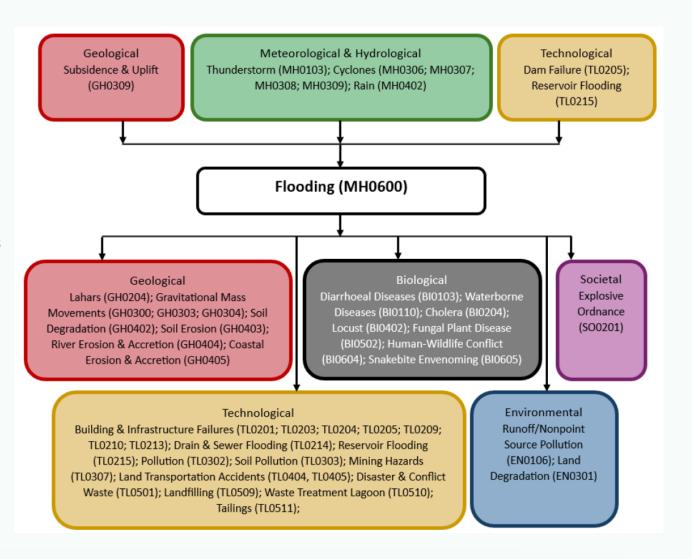




What's New?

The multi-hazard context section provides visual information on cascading relationships between hazards.

It is not comprehensive and is completed, when information is available, by text in the dedicated 'hazard drivers' and 'impacts' sections







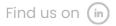






EXAMPLES OF THE UPDATED HIPS









мновоо / Meteorological & Hydrological / Water-re

Flooding

Definition

Flooding is (1) an overflowing by wal or other body of water; (2) an accum are not normally submerged; (3) a co (WMO and UNESCO, 2012).

Reference

WMO and UNESCO, 2012. Definition number 552 World Meteorological Organization (WMO) and Ut Organization (UNESCO). https://library.wmo.int/reaccessed 16 May 2025.

Annotations

Synonyms

Flood, Inundation, High Water

Additional scientific description

Whereas floods are defined in hydrology as a "(1) rise, usual which the water level recedes at a slower rate, (2) relatively h UNESCO, 2012), flooding represents the hazard associated of the water hody.

Flooding can include:

- Coastal Flood: Coastal flooding occurs from multiple riverine and flash floods near the coast, tides, sea-lev and high winds coinciding with high tides. The surge i pressure. In particular conditions, such as major estu combination of the shallowing of the seabed and retar
- Estuarine (Coastal) Flood: Estuarine flooding is flood winds coincident with high tides, thereby obstructing triverine flooding causes overflow near the estuary or (WMO, 2011). Therefore, it is challenging to identify a
- Flash Flood: A flash flood is a flood of short duration
- Fluvial (Riverine) Flooding: Overflowing by water of the 2012).
- Groundwater Flood: A groundwater flood is the emergon channels or the rising of groundwater into man-made level and groundwater flow are exceeded (BGS, 2010).
- Ice-Jam Flood including Debris: An ice-jam flood includence, below ice cover. It is broken ice in a river whice local floods (WMO, 2012).
- Ponding (Drainage) Flood: A ponding flood is a flood because it is falling faster than the drainage system (
- Snowmelt Flood: A snowmelt flood is a significant flooduring the winter (WMO, 2012).

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 Surface Water Flooding: Surface water flooding is the either runs off or infiltrates after the rain ends, not inc

Glacial Lake Outburst Flood: A 'glacial lake outburst amount of water retained in a glacial lake, irrespectiv

Metrics and numeric limits

Key flooding metrics, such as flood depth and flow velocity, a time, flooding duration, sediment load, contamination levels, 2022). However, these indicators and metrics may vary acro

- Coastal Flood: The extent and magnitude of coastal which is controlled by the topography of the coastal I al., 2017).
- Flash Flood: A flash flood is a flood that begins within
 a).

Key relevant UN convention(s) / multilateral treaty(ie Sendai Framework for Disaster Risk Reduction 2015-2030.

Examples of hazard drivers, impacts and risk managem

Hazard Drivers: Floods tend to be caused by a number of na pressure areas, thunderstorms, and tropical cyclones. The a geography and whether it is an urban area can affect the ma of a heavy rain event or far downstream away from the caus storm surges, tsunamis, ice jams and glacial lake outbursts, land use planning, etc. (Geoscience Australia, no date).

Impacts: More people are impacted by floods than by any of with developing countries most at risk. Almost 2 million peop devastating consequences, causing mortality and significant dangerous due to their speed and destructive power (UNDR

Health impacts from floods: The effects of flooding on health resulting from trauma and drowning to infectious diseases at outcomes are relatively easy to track, ascertaining the huma two-thirds of deaths associated with flooding are from drown electrocution, carbon monoxide poisoning and fire. Often, or 21131

Morbidity associated with floods is usually due to injuries, inf as delayed) (WHO, 2013). Hypothermia may also be a proble periods (WHO, no date). There may also be an increased ris exposure to flood waters and rain). Power cuts related to floo increasing the risk of water-borne diseases as well as affect (WHO, no date). Floods can potentially increase the transmir

The longer-term health effects associated with a flood are le destruction of homes, delayed recovery and water shortages

Economic impacts from floods: According to the updated WI Climate and Water Extremes, between 1970 and 2021 flood cyclones, with US\$1.3 trillion in economic losses attributed to extremes over the 51-year period (WMO, 2022). Flooding canetworks and agricultural activities, and damaging property a example, the event known as "The Great Flood of 2019" feight impacting areas along the Missouri River. The flood caused agriculture, with the prolonged nature of the event disrupting acres. Various industries in the region experienced disruptio other shipping routes (Sun et al., 2022).

Multi-hazard Context: The figure below summarizes commor should be used with caution and not be solely relied upon in have been included. Note that hazardous events occurring to or be otherwise related to each other. Specific examples of m sections above.



Geological
Lahars (GH0204): Gravitational Mass
Movements (GH0300; GH0303; GH0304); Soil
Degradation (GH0402); Soil Erosion (GH0403);
Biber Erosion A Accretion (GH040414: Castal

Erosion & Accretion (GH0405)

Building & Infrastructure Failures (TUDDI); TUD TUD210; TUD213); Drain & Sewer Flooding (TI (TUD213); Palution (TUD302); Soil Poliution (TUD307); Land Transportation Accidents (TUD40 Waste (TUD501); Landfilling (TUD509); Waste TuD509; TuD

Monitoring: The section above and the table below offer an or forecasting within a national early warning system (EWS). Sir current and specific information regarding EWS should be ob responsible for disaster management.

Which institution(s) produce(s) Disaster Risk Data/Information?	Meteorological s flooding. Hydrological sen conditions to ass Oceanographic a flooding risks. Geophysical age subsidence that Health authoritis waterborne dise Engineers and in such as levees, d Land use and urt regulations, and Energy and utilit facilities, and co Researchers and
	Researchers and forecasting, clim Environmental o mitigation soluti
How is the Hazard Observed/Monitored/Forecast?	Flooding is monitored
	rainfall, water levels, a
	alongside climate patte
	Computer models sime
	combining real-time of
	communities, emerger
	lives.

Risk Management: Climate variability and change is giving riland use, ecosystem degradation and increased population paggrayating flood-related impacts (UNDRR, no date; WMO,

Integrated Flood Management (IFM) encourages "an integral integrates land and water resources development in a river b 2009.

An example of an initiative promoting an IFM approach is the initiative between the World Meteorological Organization (WI the concept of IFM to maximize net benefits from the use of provides tools and publications to support flood management

Aside from risk management, there are several measures th

- "Integrate flood risk assessment into urban planning
- Avoid building on flood-prone land.
- Develop new building codes to reinforce flood resista
- Create more space for rivers, floodplains and wetland
- Ensure health of coastal reefs and mangrove plantat
- Maintain early warning systems, backed up by regula
 Have an evacuation plan for those at risk, including the
- Catalyze finance and insurance schemes to protect.
- Protect and evacuate animals" (UNDRR, no date).

References

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45 OP2023 EN #page=18viewer=picture&o=bookmark&n=0&q= Accessed 16 May 2025.

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Coordinating agency or organisation

World Meteorological Organization (WMO).

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Contents



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MH0705 / METEOROL

Definition

References

UNDRR-ISC Hazard

Space De

Space debris

elements ther

nonfunctional

Committee on the

Coordination Comr

https://www.iadc-h

United Nations Off

Committee on the

https://www.unoos

Orbital Debris. Space li

Additional scientific

Space debris results fro

Release durin

Accidental bre

Accidental col

Intentional des

Post-mission

Metrics and numeric

No official metrics have

national space agencie

In a recent report public

Outer Space Affairs inc

remaining in orbit. Of the

debris. The total mass

the total mass and rock

The Space Debris Office

on space debris. The C

40,500 space

1,100,000 spa

130 million sp

Space debris also exte

anthropogenic origin, s

longer working. These

puts astronauts and ed

Earth orbit.

long-lived deb

Annotations

Tsunami

Definition

Tsunami, a Ja to a series of such as earth

Reference

IOC, 2019, Tsunan Series, 85, Fourth https://unesdoc.une 385a5d5897f0 Acc

Annotations

Synonyms

Not found.

Additional scientific

A tsunami may also be landslides, and coastal reach enormous dimen waves with a typical pe water, inundating low-h cause great damage. T

The Intergovernmental (IOC, 2019):

- Travel time: Time
- Arrival time: Time
- Inundation or Inun perpendicularly to
- Inundation (maxin is measured for e
- · Inundation area: A
- Inundation height level at the time o the local topograp
- · Inundation line: In dead vegetation is
- Leading wave: Fir sea level, and in o observed.
- · Mean height Ave
- Run-up
- Difference betw the tsunami. In

ET0206 / EXTRATER

Definition

converse.

References

BI0104 / BIOLOGICAL

CH0100 / CHEMICAL

atmosphere.

essential or to

depending or

importance a

actinoids, and

(elemental, ca

can overlap o

elements, her

contaminants

this documen

FAO and UNEP. 20

https://doi.org/10.4

Annotations

GHS classification

2021a).

Reference

Sea-level char of sea level, bo annual, or long change in the I sheets), chang conditions), ch gravitational ar 2019).

Reference

IPCC, 2019, Annexe in a Changing Clima Poloczanska, E., Mi (eds)]. Intergovernm 19 November 2024.

Annotations

Synonyms

Not identified.

Additional scientific de Global sea level measur (Rovere et al., 2016). GI of barystatic sea-level ch

changes caused by char those due to salinity are redistribution of ocean m Global mean sea level re

> The rate of sea-level rise 3.7 mm [3.2 to 4.2 mm] y

> The IPCC projects globa likely range; SSP5-8.5) I differ regionally due to fa

Sea-level rise is expecte event could occur annua every five years (Taherk

It is virtually certain that under SSP5-8.5 (IPCC, 1

Heavy N Foodborn

Definition

Definition Foodborne dis Heavy metals stage of the fo weights or oc from several for the term used soil or air, as w concentration encompass a ecosystems v a). heavy metals significance a mg/kg, and so

Reference

WHO, no date a. Fo topics/foodborne-dis

Annotations

Synonyms

Foodborne illnesses. Foo

Additional scientific de

Over 200 diseases are o such as heavy metals. T healthcare systems, lost burden of disease and n

The contamination of for can result from several f storage and processing

Foodborne disease haza toxins and other harmful

Foodborne illnesses are entering the body throug cancer (WHO, 2024). M: listed below

Bacteria:

 Salmonella, Ca that affect million nausea, vomitir eggs, poultry ar

TL0201 / TECHNOLO

Building

Definition

Building colla causing a bui (adapted fron

Reference

US Department of Administration. htt Accessed 16 Febru

Annotations

Synonyms

Catastrophic building f

Additional scientific

All types of public and earthquakes, explosior damage to the structure in, understood as the p building or a large part (Kokot & Solomos, 201

Six types of progressive collapses. Each type o from the failure of a cor

Progressive structural initial local failure in a r al., 2007).

Metrics and numeric

The United Nations Ed building codes (UNES)

Many countries have st Building Codes and Sw

Various other metrics in Seismic vulnerability in

Key relevant UN com The 1954 Hague Conv

in times of peace, requ failure of a structure ar

The International Labor

The Sendai Framework prevent new and reduc disruption of basic serv soo301 / SOCIETAL / Behavioural

Violence

Definition

Violence is a social phenomenon that involves forceful acts or behaviour that are intended to cause harm. The injury or damage inflicted by violence to an individual or collective group may be physical, psychological, sexual, or deprivation, or combined. Violence is both intentional and forceful (Adapted from Jacquette, 2013).

References

Jacquette, D., 2013, Violence as intentionally inflicting forceful harm, Revue internationale de philosophie, (3), pp.293-322.

Annotations

Synonyms

Not identified

Additional scientific description

The World Health Organization categorizes violence as: self-directed, interpersonal and collective. All three categories of violence can have a societal impact whether directly or indirectly (WHO, 2002). According to Galtung (1969, 1996), violence can also be direct, structural, and cultural. There are several forms and typologies of violence. These are characterized here on the basis of the motives, target groups and tactics of violence:

Violence can either be targeted or indiscriminate, motivated by certain aims, including political, religious, social, economic, ethnic, racial, or gender-based, or unintentional and can be initiated with the aim to directly or indirectly inflict harm, injury or death (Krug et al., 2002). Violence has been explicitly identified as a significant public health problem (Rutherford et al., 2007)

Motives: Political violence is defined as hostile, aggressive or violent acts motivated by political objectives or a desire to directly or indirectly affect political change or change in governance. As a phenomenon, political violence may include a range of political acts from riots, coups, rebellions, uprisings and terrorism to violent acts committed by state and non-state actors, including pogroms, ethnic cleansing, and genocide (Kalyvas, 2013; Balcells, 2015). However, everyone has the right to peaceful assembly, as enshrined by the Universal Declaration of Human Rights (Art. 20(1)) and the International Covenant on Civil and Political Rights (Art. 21), which imposes a corresponding obligation on States parties to respect and ensure its exercise, without discrimination (General Comment No. 37 (2020)).

While radicalization, by definition, does not involve the use of violence, it refers to a process, often a multidimensional, complex and long-term process, by which individuals are introduced to extremist ideologies that motivate them to defy and challenge the status quo. This often leads to the eventual adoption of violence. Violent extremism refers to "the willingness to use or support the use of violence" or terror as an appropriate means to achieve ideological, social or political objectives (Elshimi, 2018;

Religious violence refers to violent acts committed by either state or non-state actors and motivated by religious convictions, ideologies or belief systems. Religious violence is closely associated with radicalism and religious extremism and refers to acts ranging from inciting violence against particular religious groups, discrimination or segregating certain religious groups, persecution, genocide, random physical aggression, gang or mob violence and defaming or injuring verbal abuse or violence (Clarke, 2011).

Ethnic or racial violence refers to violence between different groups of people on the basis of ethnic or racial differences or differences in culture, religion or language motivated by ethnic or racial diversity. Violent acts motivated by ethnic or racial differences take many forms, ranging from segregation and institutionalized discrimination to genocide, ethnic cleansing,

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GH0309 / GEOLOGICA

Subsidence

Subsidence is

BGS, 2020. Subsid

www.bas.ac.uk/aeol

EN0402 / ENVIRONME

Sea Leve

Definition

Annotations

Synonyms

Uplift, Subsidence, Grou

Additional scientific d

Subsidence and uplift or such as mining or tunne fluctuations and moisture tend to be regional or glo changes to surface loadi accretion), water loading temporal and spatial sca result from displacement

displacements that deve Earth's surface. Surface or more distributed defor Ground-level rise is com

converge (USGS, 2015) relative motion of the cru Earth's surface. Surface although less dramatic, i

Volcanic uplift and subsi unrest at volcanoes, gro centre of uplift to move (calderas show very long years (Acocella, 2019). was observed in the hou retreat of the shoreline (a and 1982-1984 which cu

unrest in 1982-1984 (Ac Erosional/depositional-is (erosion/deposition). Cha

as well as important sea In the marine coastal en exacerbate regional sub-

to ocean water heights a

Synonyms

Heavy metals, Metallic



CONCLUSIONS - NEXT STEPS











Conclusions

- The update involved more than 200 authors and 130 reviewers
- Users were involved in the update and review processes

Next Steps

- Next update cycle to be organised in a couple of years
- Development of machine actionability
- Extension of the work to the other components of risk



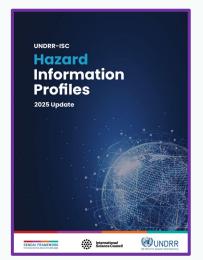














All this work would not have been possible without the invaluable commitment and contributions to the UNDRR-ISC HIPs by:

- Steering Group members,
- · Technological Group members,
- User, Multi-Hazard Context and Machine Actionability Group members,
- Additional Contributors to the HIPs, and
- Reviewers of the HIPs





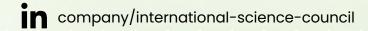












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