UK Health Security Agency

UNDRR
UN Office for Disaster Risk Reduction

International Science Council

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

World Health Organization

IRDR
Integrated Research on Disaster Risk

COMMITTEE ON DATA
CODATA
INTERNATIONAL SCIENCE COUNCIL

TRENDS
Thematic Research Network on Data and Statistics

IFEH

29 April 2023

UNDRR/ISC Hazard Information Profiles

Professor Virginia Murray

Head of Global Disaster Risk Reduction, UK Health Security Agency
Chair of the TWG for UNDRR / ISC for Hazard Definition and Classification Review technical report and the Hazard Information Profiles and on behalf our many authors and reviewers
Co-chair of the WHO Thematic Platform Health and Disaster Risk Management Research Network
Member of the WHO Collaborating Centre on Global Health Security
Member of CODATA international Science Council Executive Committee
Member of Integrated Research on Disaster Risk (IRDR) Scientific Committee
Co-Chair of IRDR Disaster Loss Data (DATA)

Sendai Framework for Disaster Risk Reduction 2015 - 2030

Sendai Framework for Disaster Risk Reduction 2015-2030

1 Global Outcome

13 Guiding Principles

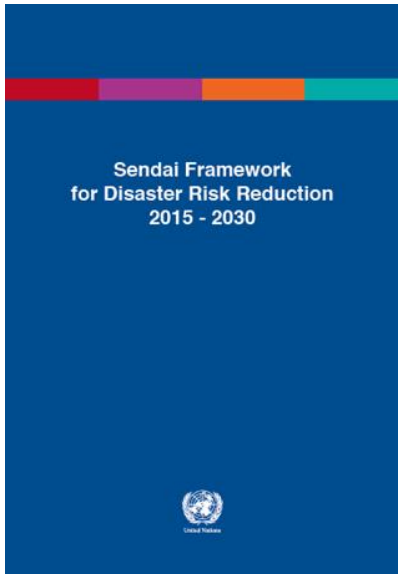
4 Priorities for Action at all levels

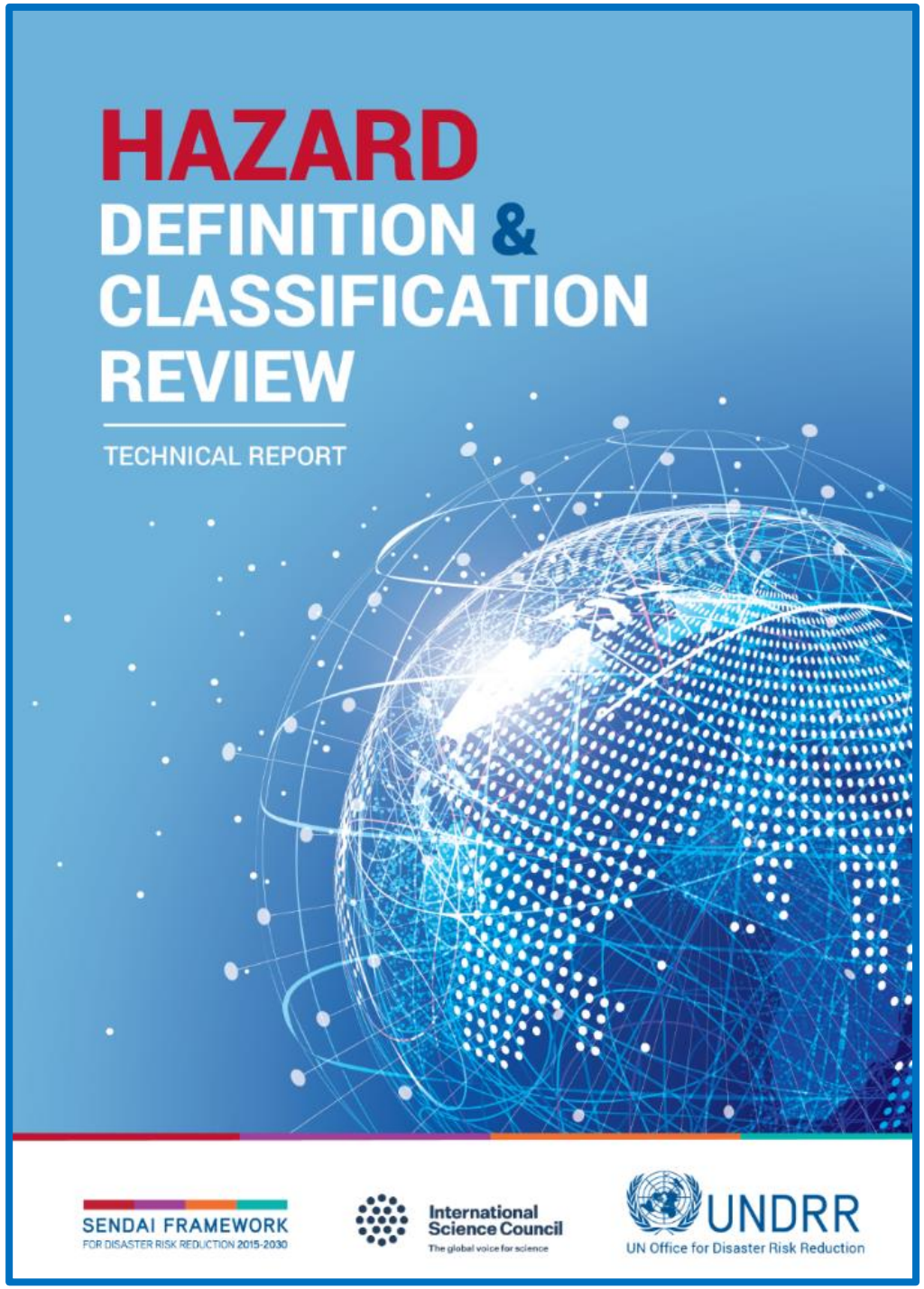
7 Global Targets

UNISDR

Sendai Framework for Disaster Risk Reduction 2015-2030

To strengthen technical and scientific capacity to capitalize on and consolidate existing knowledge and to develop and apply methodologies and models **to assess disaster risks, vulnerabilities and exposure to all hazards**; *(paragraph 24 j)*





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UNDRR / ISC Hazard Definition and Classification Review TECHNICAL REPORT July 2020

https://council.science/publications/hazards/
https://www.undrr.org/publications

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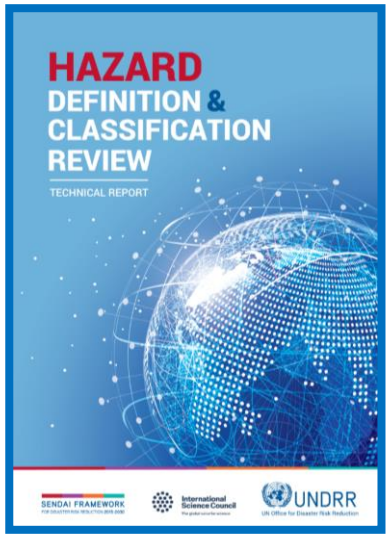

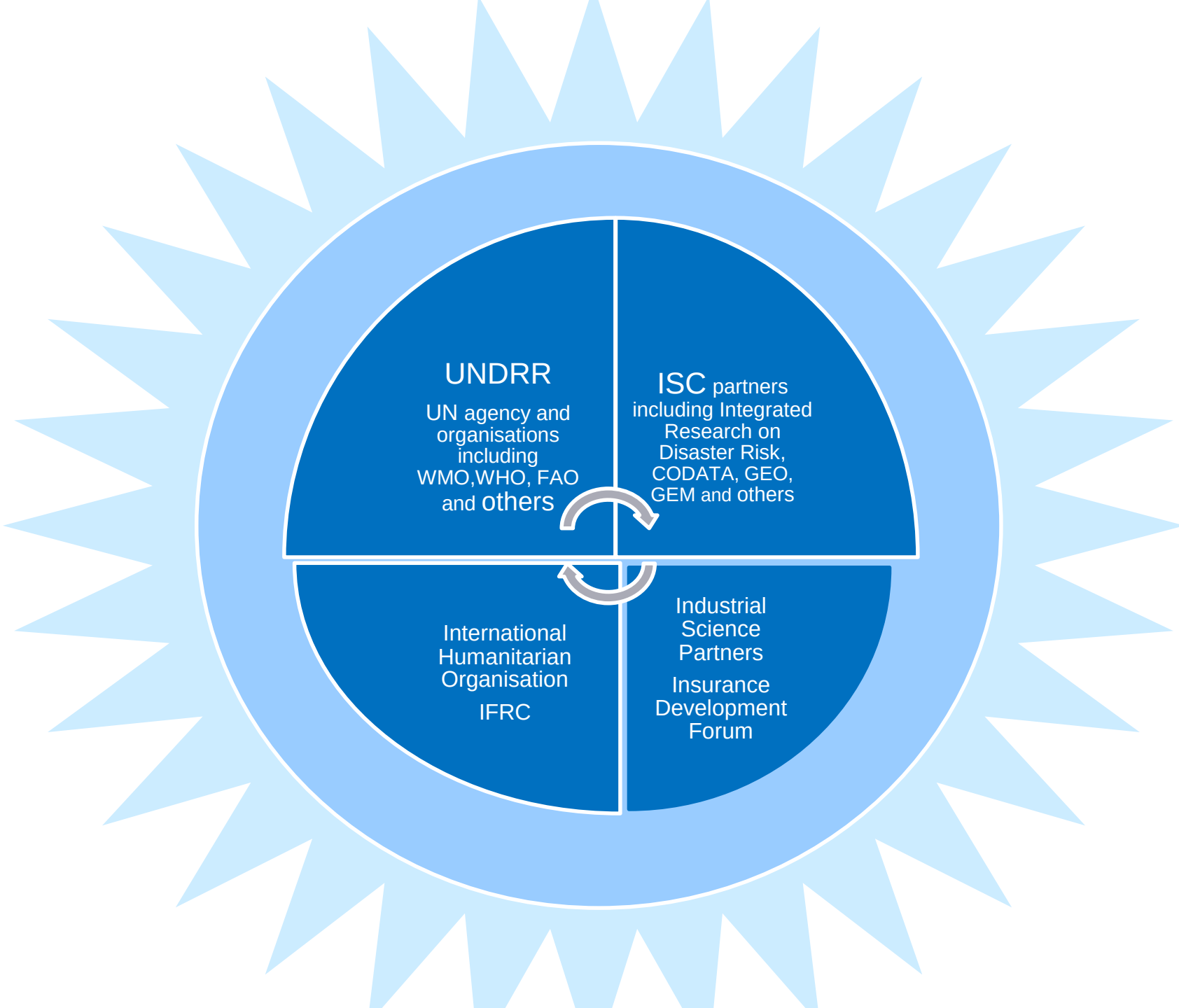

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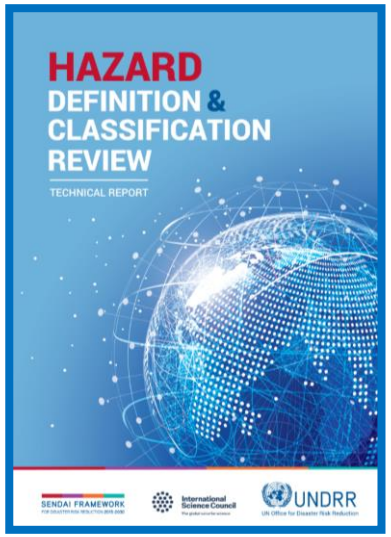

The Hazard Review and Classification project: the process

Expanded scope of hazards of the Sendai Framework

UNGA definition of hazard as a process, phenomenom, or human activity that may cause harm or damage

The data sources:

- Scientific hazard glossaries
- IRDR Peril Classification
- UN glossaries
- Sendai Monitor hazard list
- Survey of scientists on hazards relevant for Sendai
- Consultations of expert communities within the UN and scientific community

Inclusion criteria:

1. The hazard has the potential to impact on a community
2. Proactive and reactive measures are available
3. The hazard has measurable spatial and temporal components

Hazard list:

302 hazards across these hazard types: hydromet, extraterrestrial, geological, environmental, biological, chemical, technological and societal.

Recommendations:

1. Regular review and update
2. Facilitate the development of a multi-hazard information system
3. Standardise definitions across users and sectors
4. Engage policy-makers and scientists in evidence-based national risk assessment processes, disaster risk reduction and risk-informed sustainable development.
5. Conduct further work to operationalise parameters for exposure, vulnerability and capacity, building on the UNGA definitions
6. Address cascading and complex hazards and risks

Dialogue towards a more holistic and consistent approach to hazards identification and definition

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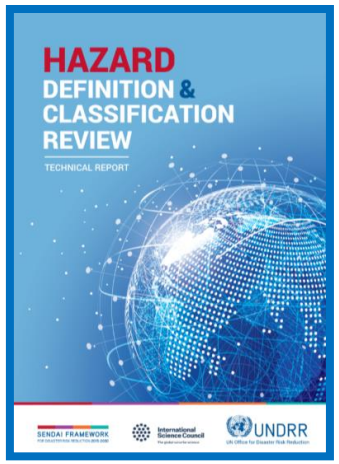
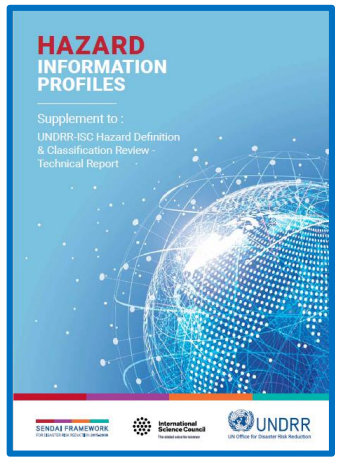
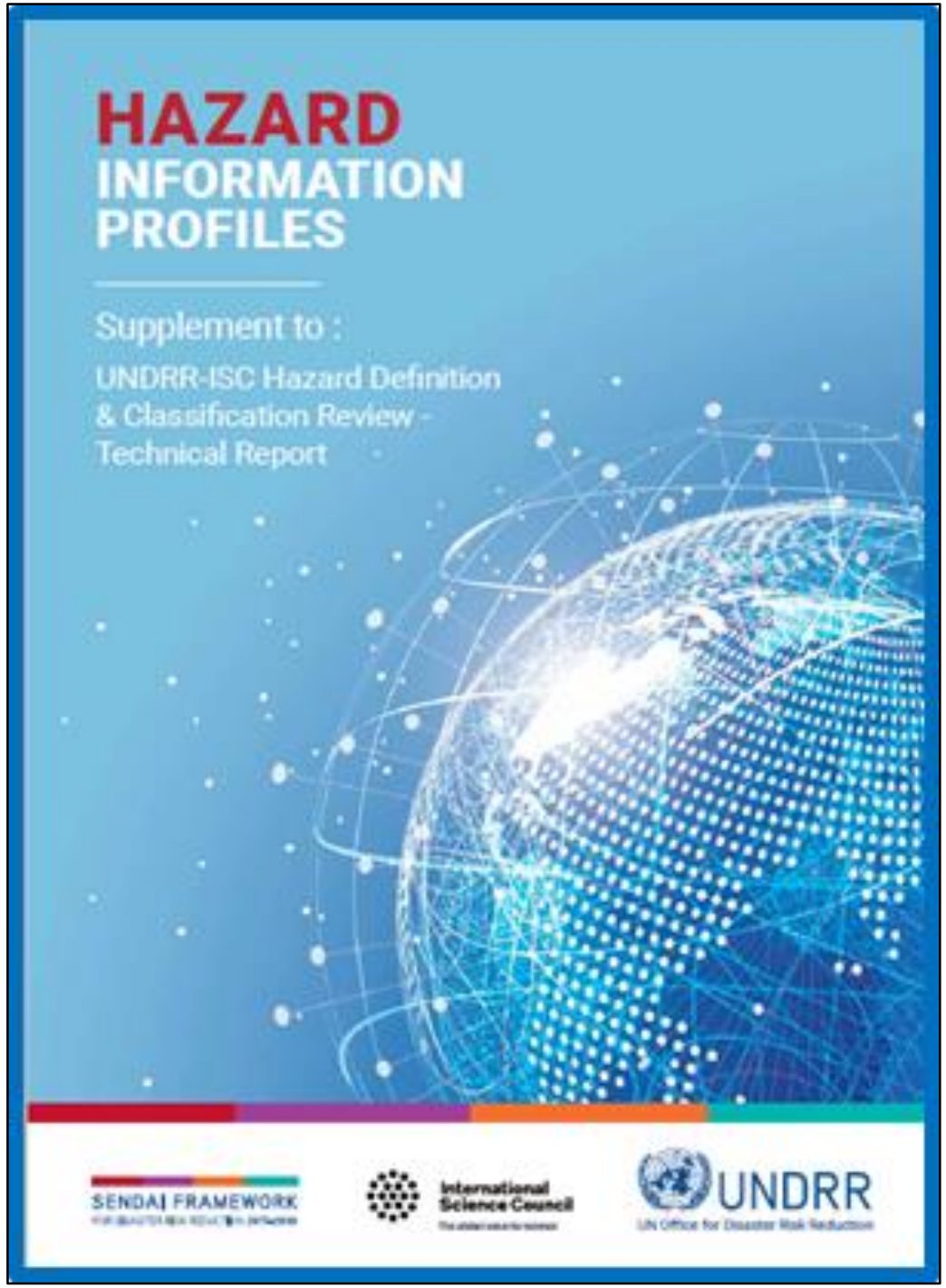




UNDRR / ISC Hazard Information Profiles



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International
Science Council

Hazard Information Profiles

Supplement to
UNDRR / ISC Hazard Definition and Classification Review
Technical Report
October 2021

https://council.science/wp-content/uploads/2020/06/Hazard-Information-Profiles-Supplement-to-UNDRR-ISC-Hazard-Definition-Classification-Review-Technical-Report-2021.pdf

https://www.undrr.org/publication/hazard-information-profiles-supplement-undrr-isc-hazard-definition-classification

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Number	HAZARD

Primary definition

Brief Definition of hazard: no more than 3 lines/2 sentences.
Sourced from the highest possible authority and be applicable to all parties and preferably a simple UN definition but also recognised as the highest level that UN member states can use and apply.
REFERENCE/ hyperlink/Web site

Scientific definition

Expanded scientific definition that is preferably measurable, modellable and statistically relevant
REFERENCE/ hyperlink/Web site

Metrics, numerical limits or defined guidelines

Any globally agreed metrics, numerical limits or guidelines defined
Should be globally agreed as a recognised standard, if it is only at a regional level than state this as a reference.
REFERENCE/ hyperlink/Web site

Key relevant UN Conventions and regional conventions / multilateral treaty

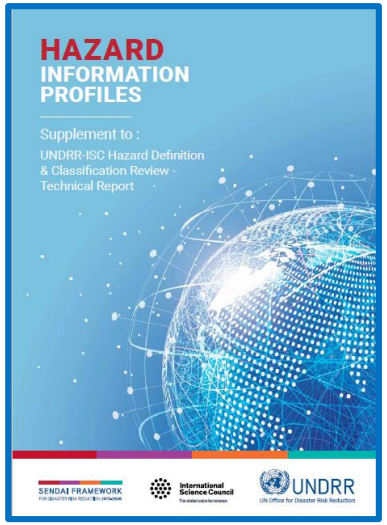
REFERENCE/ hyperlink/Web site

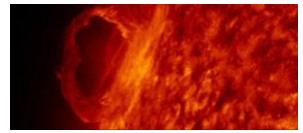
Any essential annotations

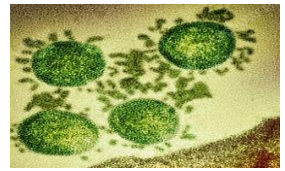
Such as drivers, outcomes and risk management
REFERENCE/ hyperlink/Web site

Ownership of Definition(s)

UN or Scientific Agency or Organisation who holds the updating responsibility for the Primary Definition



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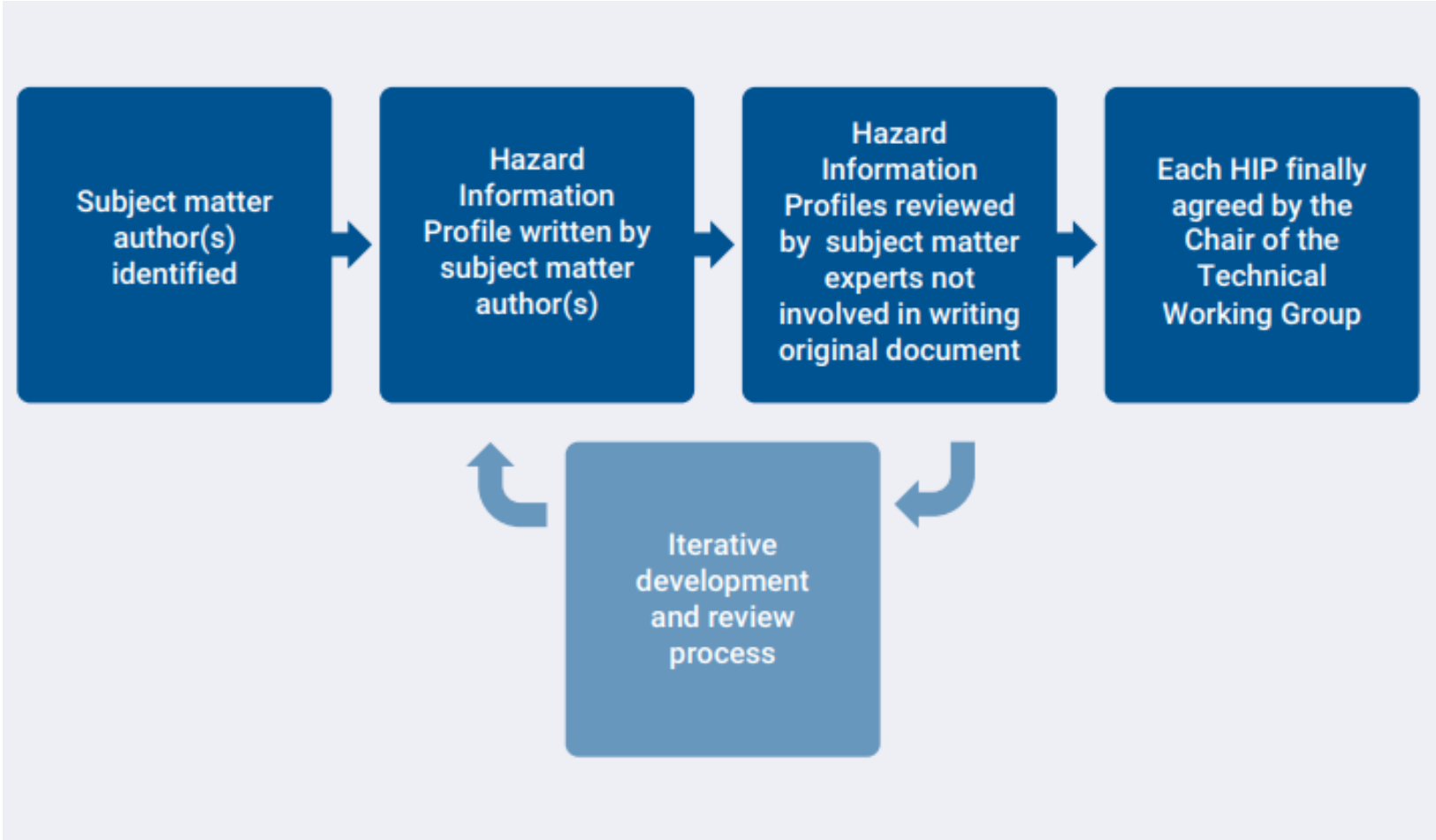

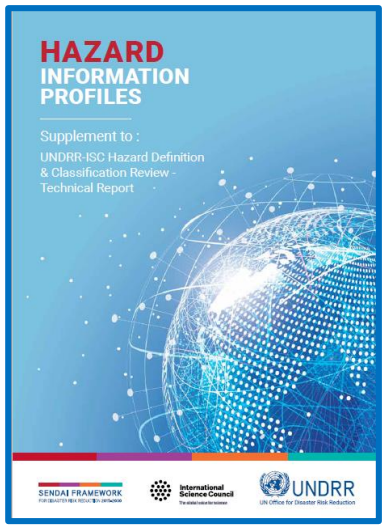

MH0035 / METEOROLOGICAL AND HYDROLOGICAL / Precipitation-Related

Drought

Definition

A drought is a period of abnormally dry weather characterised by a prolonged deficiency of precipitation below a certain threshold over a large area and a period longer than a month (WMO, 2020).

Reference

WMO, 2020. Guidelines on the Definition and Monitoring of Extreme Weather and Climate Events. World Meteorological Organization (WMO). Final version forthcoming. www.wmo.int/pages/prog/wcp/ccl/documents/GUIDELINESONTHEDEFINTIONANDMONITORINGOFEXTREMEWEATHERANDCLIMATEEVENTS_09032018.pdf Accessed 18 November 2019.

Annotations

Synonyms

Not identified.

Additional scientific description

Drought is described as conditions that are significantly drier than normal or otherwise limiting moisture availability to a potentially damaging extent (WMO and GWP, 2016) or as conditions where there had been a prolonged absence or marked deficiency of precipitation (WMO/UNESCO, 2012).

Whereas drought may be defined simply as the absence of water, it is a complex phenomenon which is monitored over a number of time scales and often defined according to need. It is a slow-onset phenomenon that gradually intensifies and can impact many sectors of the economy and the environment (Drought Observatory, no date).

Droughts can be characterised in terms of their severity, location, duration and timing. Droughts can arise from a range of hydrometeorological processes that supress precipitation and/or limit surface water or groundwater availability. There are various drought indicators and indices that provide options for identifying the severity, location, duration onset and cessation of such conditions. It is important to note that the impacts of drought can be as varied as the causes of drought. Droughts can adversely affect agriculture and food security, hydropower generation and industry, human and animal health, livelihood security, and personal security and access to education. Such impacts depend on the socio-economic contexts in which droughts occur, in terms of who or what is exposed to the droughts and the specific vulnerabilities of the exposed entities (WMO and GWP, 2016).

The drought community has defined several different types of drought that have can general or specific sector impacts (NOAA, no date b):

- *Meteorological drought*: Occurs when dry weather patterns dominate an area. It is defined usually on the basis of the degree of dryness and the duration of the dry period.
- *Hydrological drought*: Occurs when low water supply becomes evident and is associated with the effects of periods of precipitation shortfalls on surface or subsurface water supply.
- *Agricultural drought*: Occurs when agricultural production becomes affected. It focuses on precipitation shortages, differences between actual evapotranspiration, soil water deficits, reduced groundwater and so on.
- *Socioeconomic drought*: Relates the supply and demand of some economic goods with elements of meteorological, hydrological, and agricultural drought. It also occurs when the demand for an economic good exceeds supply as a result of a weather-related shortfall in water supply.

MH0035 / METEORC

Drought

Definition

A drought is
prolonged de
large area an

Reference

WMO, 2020. Guid
World Meteorolog
wcp/ccl/documer
OFEXTREMEWEA

Annotations

Synonyms

Not identified.

Additional scientific

Drought is described a
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ET0009 / EXTRATERR

Near-Eart

Definition

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astronomical u
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References

UN OOSA, no date.
Outer Space Affairs
October 2020.

Annotations

Synonyms

Not identified.

Additional scientific de

The definition above inclu
objects (NEOs) generally
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Metrics and numeric li

A near-Earth asteroid is s
Earth's orbit and it has a
date).

Key relevant UN conve

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to govern the exploration
date)). The Committee wa
related activities that cou
problems arising from th

Examples of drivers, ou

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for an international respo
detecting, tracking, and c
plans and protocols to as
responses. Currently, IAW

IAWN has proposed the f
Earth's atmosphere, and/
sphere, ionosphere, and t

- The probability that an
- The probable size, or at
- How far in the future th

GH0006 / GEOHAZARDS / Seismogenic (Earthquakes)

Tsunami (Earthquake Trigger)

Definition

Tsunami is the Japanese term meaning wave ('nami') in a harbour ('tsu'). It is a series of travelling waves of extremely long length and period, usually generated by disturbances associated with earthquakes occurring below or near the ocean floor (IOC, 2019).

Reference

IOC, 2019. Tsunami Glossary, 2019. Intergovernmental Oceanographic Commission (IOC), Technical Series, 85. Fourth Edition. IOC/2008/TS/85 rev.4. https://unesdoc.unesco.org/ark:/48223/pf0000188226?posInSet=1&queryId=aeb846ae-edfb-4d66-a03a-385a5d5897f0

Annotations

Synonyms

Not found.

Additional scientific description

A tsunami may also be referred to as a 'seismic sea wave' and, incorrectly, a 'tidal wave'. Volcanic eruptions, submarine landslides, and coastal rock falls can also generate tsunamis, as can a large meteorite impacting the ocean. These waves may reach enormous dimensions and travel across entire ocean basins with little loss of energy. They proceed as ordinary gravity waves with a typical period of between 10 and 60 minutes. Tsunamis steepen and increase in height on approaching shallow water, inundating low-lying areas, and where local submarine topography causes the waves to steepen, they may break and cause great damage (IOC, 2019).

Tsunami-like phenomena generated by meteorological or atmospheric disturbances are known as meteotsunami (UNESCO and IOC, 2019).

The Intergovernmental Oceanographic Commission (IOC) uses the following terms to assess the scale and impact of a tsunami (IOC, 2019):

Travel time: Time required for the first tsunami wave to propagate from its source to a given point on a coastline.

Arrival time: Time of the first maximum of the tsunami waves.

Inundation or Inundation-distance: The horizontal distance inland that a tsunami penetrates, generally measured perpendicularly to the shoreline.

Inundation (maximum): Maximum horizontal penetration of the tsunami from the shoreline. A maximum inundation is measured for each different coast or harbour affected by the tsunami.

Inundation area: Area flooded with water by the tsunami.

Inundation height: Elevation reached by seawater measured relative to a stated datum such as mean sea level or the sea level at the time of tsunami arrival, at a specified inundation distance. Inundation height is the sum of the flow depth and the local topographic height. Sometimes referred to as tsunami height.

Inundation line: Inland limit of wetting measured horizontally from the mean sea level line. The line between living and dead vegetation is sometimes used as a reference. In tsunami science, the landward limit of tsunami run-up.

BI0056 / BIOLOGICAL / Infectious Diseases (Human and Animal)

Monkeypox (Human)

Definition

Monkeypox is a viral zoonotic disease that has symptoms similar to those of smallpox (WHO, 2019).

Reference

WHO, 2019. Monkeypox. World Health Organization (WHO). www.who.int/news-room/fact-sheets/detail/monkeypox Accessed 13 December 2019.

Annotations

Synonym

Not identified.

Additional scientific description

Monkeypox is a viral zoonosis (a virus transmitted to humans from animals) with symptoms similar to those seen in the past in smallpox patients, although it is clinically less severe. It is caused by an orthopoxvirus, from the family of viruses which also caused human smallpox (WHO, 2018). With the eradication of smallpox in 1980 and subsequent cessation of smallpox vaccination, monkeypox has emerged as the most important orthopoxvirus. Monkeypox occurs in Central and West Africa, often in proximity to tropical rainforests (WHO, 2019a).

Monkeypox is mostly transmitted to people from various wild animals such as rodents and primates, with limited secondary spread through human-to-human transmission. Monkeypox is less contagious than smallpox but can be fatal in 1% to 10% of cases (WHO, 2018).

Common symptoms include fever, intense headache, lymphadenopathy, back pain, myalgia and weakness. Like in smallpox, rashes appear beginning on the face and spreading on the body, including to the palms of the hands and soles of the feet (WHO, 2018).

Human monkeypox was first identified in humans in 1970 in the Democratic Republic of the Congo (then known as Zaire) in a 9-year-old boy in a region where smallpox had been eliminated in 1968. Since then, most cases have been reported from rural, rainforest regions of the Congo Basin, particularly in the Democratic Republic of the Congo, where it is considered to be endemic (WHO, 2019a).

Since 1970, human cases of monkeypox have been reported from 11 African countries – Benin, Cameroon, the Central African Republic, the Democratic Republic of the Congo, Gabon, Ivory Coast, Liberia, Nigeria, the Republic of the Congo, Sierra Leone, and South Sudan. In 2017, Nigeria experienced the largest documented outbreak, 40 years after the last confirmed case. The true burden of monkeypox is not known. For example, in 1996–1997, a major monkeypox outbreak was suspected in the Democratic Republic of Congo but with a lower case fatality and a higher attack rate than usual. Some patient samples tested positive for varicella virus and some contained both varicella and monkeypox viruses. Concurrent outbreaks of chickenpox and monkeypox could explain a change in transmission dynamics in this case (WHO, 2019a).

The virus has been exported from Africa a few times. In spring 2003, monkeypox cases were confirmed in the USA. Most patients were reported to have had close contact with pet prairie dogs that were infected by African rodents that had been imported into the country from Ghana. Recently, monkeypox was carried to Israel in September 2018, to the UK in September 2018 and December 2019, and to Singapore in May 2019 by travellers from Nigeria who fell ill with monkeypox after arrival (WHO, 2019a).

Two distinct genetic clades of the virus have been identified – the Congo Basin and the West African clades – with the former found to be more virulent and transmissible. The geographic division between the two clades is thought to be in Cameroon as this is the only country where both monkeypox virus clades have been detected (WHO, 2019a).

SO0007 / SOCIETAL / Behavioural

Stampede or Crushing (Human)

Definition

Stampede or crushing is the surge of individuals in a crowd, in response to a perceived danger or loss of physical space. It often disrupts the orderly movement of crowds resulting in irrational and dangerous movement for self-protection leading to injuries and fatalities (Illiyas et al., 2013).

Reference

Illiyas, F., S. Mani, A. Pradeepkumar and K. Mohan, 2013. Human stampedes during religious festivals: a comparative review of mass gathering emergencies in India. International Journal of Disaster Risk Reduction, 5:10-18.

Annotations

Synonyms

Crush, Mass panic, Crowd disaster.

Additional scientific description

With population growth and a constant increase in human travels, mass gatherings are becoming more frequent and attract increasing numbers of participants (Johansson et al., 2012). Mass gatherings can be defined as a concentration of people at a specific location for a specific purpose over a set period of time, and which has the potential to strain the planning and response resources of the country or the community (WHO, 2015).

Mass gatherings are either spontaneous, such as at train stations during rush hour (Johansson et al., 2012) or are planned, such as at sport, cultural, religious, or political events (WHO, 2015). The Hajj pilgrimage in Saudi Arabia and the Kumbh Mela in India are the biggest regular mass gatherings globally, bringing millions of pilgrims together (Ahmed et al., 2006; Illiyas et al., 2013). Mass gatherings may affect health in different ways and crowd disasters may occur, including the collapse of infrastructure, fire incidents, terrorist attacks, violence riots, and human stampedes (Soomaroo and Murray, 2012; WHO, 2015; Still, 2019).

Stampedes are often described as the "disruption of the orderly movement of crowds...leading to injuries and fatalities" (Illiyas et al., 2013), often "in response to a perceived danger, loss of physical space", or "a will to attain something seen as gratifying" (Ngai et al., 2009; Burkle et al., 2011; Illiyas et al., 2013). They carry high mortality rates and are, besides heat-related illnesses, the most common cause of mortality in mass gatherings (Steffen et al., 2012; Still, 2019).

Most human stampede casualties result from traumatic asphyxia caused by external compression of the thorax and/or upper abdomen, resulting in complete or partial cessation of respiration. It has been reported that significant compression forces can be present with even moderate crowds; forces of up to 4500 N (1000 lb) can be generated by just six to seven people pushing in a single direction with forces large enough to bend steel railings (Ngai et al., 2009).

Although survivors of human stampedes and autopsy reports suggest traumatic asphyxia as the primary cause of death, other mechanisms have been considered, including myocardial infarction, direct crushing injury to intrathoracic or intraabdominal organs, head injury, and neck compression. All these mechanisms are possible; however, little actual supportive evidence exists. It has been concluded from autopsy findings that "people who succumb in these scenarios typically die (standing up) in a vertical position" due to compression force and "do not collapse to the floor until after the crowd density and pressure have been relieved. Compressive forces applied front to back or vice versa resulted in ventilatory failure, whereas those experiencing compressive forces from side to side were spared, presumably because chest expansion was not compromised to the same extent" (Ngai et al., 2009).

CH0007 / **CHEMICAL / Food Safety**

Levels of Contaminants in Food

Definition

A contaminant in food and feed is defined as any s
intentionally added to food or feed for food-produc
is present in such food or feed as a result of the pr
operations carried out in crop husbandry, animal h
veterinary medicine), manufacture, processing, pre
packing, packaging, transport or storage, or as a re
contamination. Note: The term includes toxins, suc
not include insect fragments, rodent hairs and othe
(FAO and WHO, 2019).

Reference

FAO and WHO, 2019. Codex Alimentarius Commission – Procedural
Food and Agriculture Organization of the United Nations (FAO) and W
(WHO). www.fao.org/3/ca2329en/CA2329EN.pdf

Key relevant UN convention/multilateral treaty

Joint Food and Agriculture Organization of the United Nations (FAO) and World Health Organization (WHO) Food Standards Programme Codex Alimentarius Commission.

Examples of drivers, outcomes and risk management

Drivers: Environmental, industrial and agricultural pollution, intensification of agricultural production, poor hygiene practices along the food chain, International trade.

Outcomes: Safe food, ensured public health, ensured fair practices in food trade.

Risk management: A national legislation and food control system, including food import control, export control, and national monitoring programmes.

Risk management measures: Science-based harmonised texts such as Codex standards, recommendations, guidelines, codes of practice, analytical monitoring, national and international monitoring networks, warning of consumers, retraction from the market.

Normative work to support ensuring safe levels of contaminants in food and feed: Relevant standard setting bodies and a selection of mechanisms, guidance, tools and other resources developed by the FAO, in collaboration with the WHO and a range of partners, aiming to advise and support the delivery of safe levels of contaminants in food and feed are as follows:

- The FAO Food Safety and Quality Programme and FAO Food Systems and Food Safety Division.
- Codex Alimentarius Commission.
- Codex Committee on Contaminants in Food.
- General Standard for Contaminants and Toxins in Food and Feed (CXS 193-1995).
- Joint FAO / WHO Expert Committee on Food Additives (JECFA).
- Risk Based Imported Food Control Manual.
- Food safety risk management: Evidence-informed policies and decisions, considering multiple factors.

Food Safety and Quality Programme: The FAO is a recognised leader in the development of global food safety initiatives and guidance translating these into country level action. The Food Safety and Quality Programme supports an integrated and multidisciplinary approach to food safety risk management through holistic and feasible 'food chain' solutions to specific food safety problems as laid out in its strategy for improving food safety globally (FAO, 2014). The foundations for this approach are based on science (FAO, no date).

The Food Systems and Food Safety Division of the FAO supports the strengthening of systems of food safety and quality control at national, regional and international levels. This involves (FAO, no date):

- Strengthening national food control regulatory capacities and global trade facilitation by providing leadership in supporting countries in the assessment and progressive improvement of food control systems, including food safety policy and food

TL0042 / **TECHNOLOGICAL / Waste**

Healthcare Risk Waste

Definition

Healthcare waste includes waste generated within healthcare facilities, research centres and laboratories related to medical procedures and medical equipment. It also includes waste originating from minor and scattered healthcare sources, including waste produced in the course of emergency medical treatment or health care undertaken in the home (e.g., home dialysis, self-administration of insulin, recuperative care) (WHO, 2014).

Reference

WHO, 2014. Safe management of wastes from health-care activities, 2nd Edition. World Health Organization (WHO). apps.who.int/iris/bitstream/handle/10665/85349/9789241548564_eng.pdf?sequence=1 Accessed 15 November 2019.

Annotations

Synonyms

Terminology varies across stakeholders: medical waste, clinical waste, regulated medical waste, hospital waste (Rutala and Mayhall, 1992).

Additional scientific description

The main sources of medical waste are hospitals, clinics, laboratories, blood banks and mortuaries. Whereas physician's offices, dental clinics, pharmacies, home-based health care and so on, generate healthcare waste but in smaller amounts (UNGA, 2011).

Metrics and numeric limits

Classification of healthcare waste (HCW) that can inform the metrics is shown below (Basel Convention and WHO, 2005):

Healthcare waste for the purpose of transboundary movements under the Basel Convention can be classified with the codes Y1 (Clinical wastes from medical care in hospitals, medical centres and clinics) or Y2 (Wastes from the production and preparation of pharmaceutical products, or Y3 (Wastes pharmaceuticals, drugs and medicines), among others.

Approximately 15% of healthcare waste is estimated to be hazardous and has a potential to cause disease or injury. About 85% of healthcare waste is general waste, and is non-hazardous and includes items such as paper, glass, plastic packaging material, and food that have not been in contact with patients. It is similar to domestic/household waste (WHO, 2018).

Key relevant UN convention / multilateral treaty

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989). At the time of writing, there were 187 parties to the Basel Convention (UN Treaty Collection, 2019).

Examples of drivers, outcomes and risk management

Drivers of this hazard include lack of awareness about the health hazards related to healthcare waste; inadequate training in proper waste management; absence of waste management and disposal systems; insufficient financial and human resources; and the low priority given to healthcare waste. Many countries either do not have appropriate regulations, or do not enforce them (WHO, 2018).

Healthcare waste may result in the following outcomes (WHO, 2018):

- Potentially harmful microorganisms can infect hospital patients, health workers and the general public.
- Release of drug-resistant microorganisms from healthcare facilities into the environment.
- Needle stick injury (e.g., a person who experiences one needle stick injury from a needle used on an infected source patient has risks of 30%, 1.8%, and 0.3% respectively of becoming infected with HBV, HCV and HIV).
- Radiation burns.
- Toxic exposure to pharmaceutical products, especially antibiotics and cytotoxic drugs released into the surrounding environment, and to substances such as mercury or dioxins, during the handling or incineration of healthcare wastes.
- Chemical burns arising in the context of disinfection, sterilisation or waste treatment activities.
- Air pollution arising from the release of particulate matter during medical waste incineration.
- Thermal injuries occurring in conjunction with open burning and the operation of medical waste incinerators.
- Indirect health risks (environmental impact) due to the release of pathogens and toxic pollutants into the environment.
- Inadequate incineration or the incineration of unsuitable health waste materials can result in the release of pollutants into the air and in the generation of ash residue. Incinerated materials containing or treated with chlorine can generate dioxins and furans, which are human carcinogens and have been associated with a range of adverse health effects. Incineration of heavy metals or materials with high metal content (especially lead, mercury and cadmium) can lead to the spread of toxic metals in the environment.
- Treatment of healthcare wastes with chemical disinfectants can result in the release of chemical substances into the environment if those substances are not handled, stored and disposed of in an environmentally sound manner.
- Disposal of untreated healthcare wastes in landfills can lead to the contamination of drinking water, surface waters, and groundwaters if the landfills are not properly constructed.

References

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Coordinating agency or organisation

World Health Organization.

Healthcare waste may result in the following outcomes (WHO, 2018):

- Potentially harmful microorganisms can infect hospital patients, health workers and the general public.
- Release of drug-resistant microorganisms from healthcare facilities into the environment.
- Needle stick injury (e.g., a person who experiences one needle stick injury from a needle used on an infected source patient has risks of 30%, 1.8%, and 0.3% respectively of becoming infected with HBV, HCV and HIV).
- Radiation burns.
- Toxic exposure to pharmaceutical products, especially antibiotics and cytotoxic drugs released into the surrounding environment, and to substances such as mercury or dioxins, during the handling or incineration of healthcare wastes.
- Chemical burns arising in the context of disinfection, sterilisation or waste treatment activities.
- Air pollution arising from the release of particulate matter during medical waste incineration.
- Thermal injuries occurring in conjunction with open burning and the operation of medical waste incinerators.
- Indirect health risks (environmental impact) due to the release of pathogens and toxic pollutants into the environment.
- Inadequate incineration or the incineration of unsuitable health waste materials can result in the release of pollutants into the air and in the generation of ash residue. Incinerated materials containing or treated with chlorine can generate dioxins and furans, which are human carcinogens and have been associated with a range of adverse health effects. Incineration of heavy metals or materials with high metal content (especially lead, mercury and cadmium) can lead to the spread of toxic metals in the environment.
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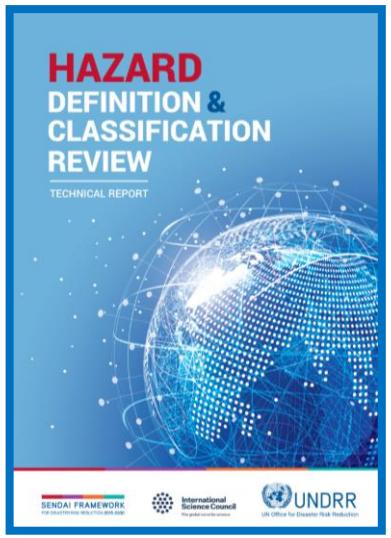

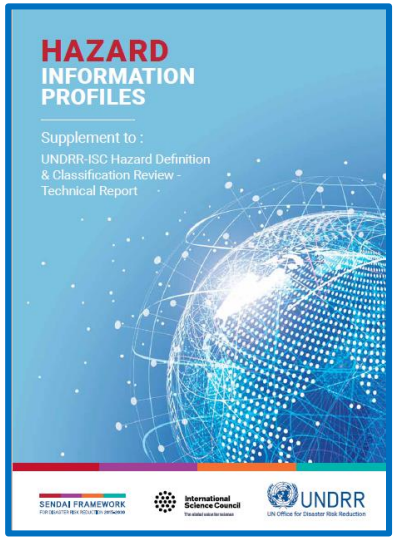

Recommendations

- **Use this hazard list to actively engage policymakers and scientists in evidence-based national risk assessment processes**, disaster risk reduction and risk-informed sustainable development, and other actions aimed at managing risks of emergencies and disasters
- **Address cascading and complex hazards and risks**
- Regular review and update and **maybe it is time for a Phase 2?**

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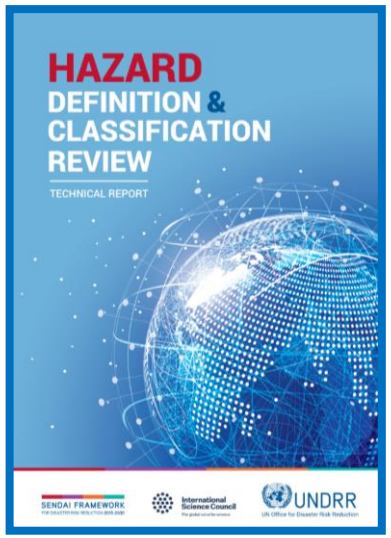
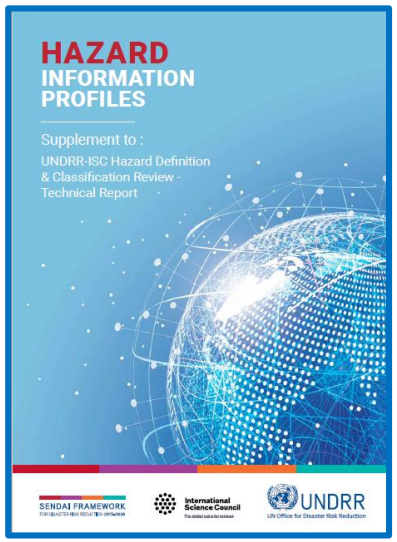


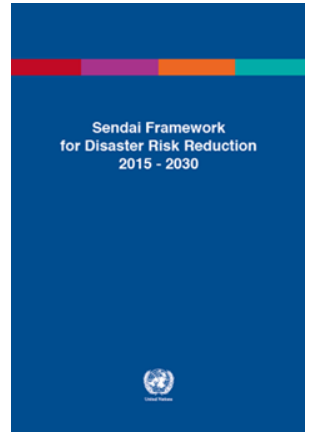


The UNDRR/ISC Hazard Definition and Classification Review Technical Report and Hazard Information Profiles support Sendai Framework for Disaster Risk Reduction 2015-2030, Sustainable Development Goals of Agenda 2030 and Paris Agreement on Climate Change

by providing a

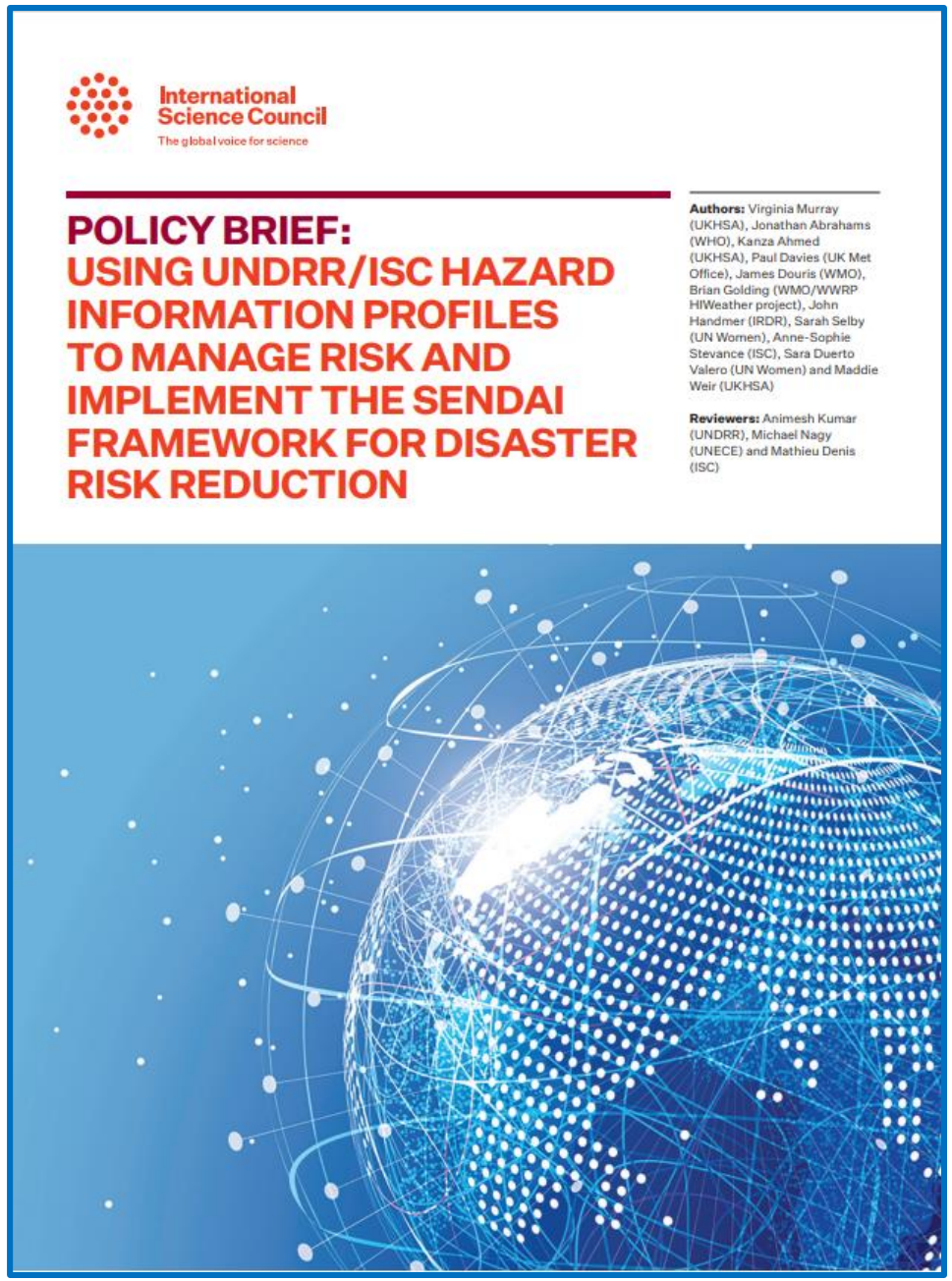
common set of hazard definitions

for monitoring and reviewing implementation



SUSTAINABLE DEVELOPMENT GOALS

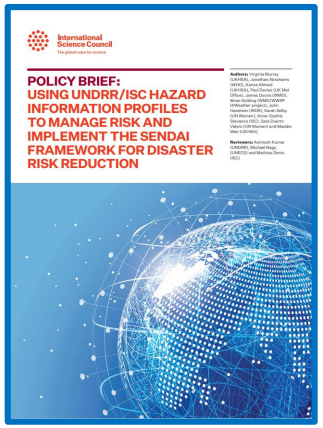
PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

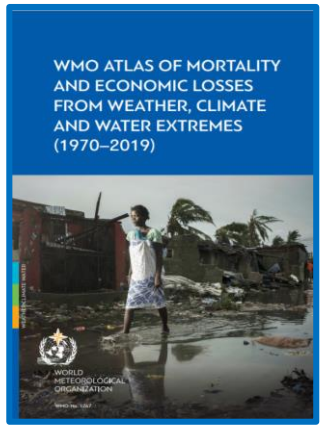


- Case Study: **UNDRR-WMO CENTRE OF EXCELLENCE FOR CLIMATE AND DISASTER RESILIENCE**
- Case Study: **World Meteorological Organization Cataloguing of Hazardous Events**
- Case Study: **United Nations Inter Agency Expert Group on Disaster Related Statistics**
- Case Study: **World Health Organization Framework for Health Emergency and Disaster Risk Management**

https://council.science/publications/policy-brief-hazards-informations-profiles-drr/

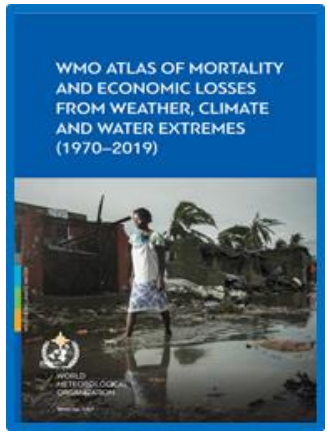
CASE STUDY: UNDRR-WMO CENTRE OF EXCELLENCE FOR CLIMATE AND DISASTER RESILIENCE

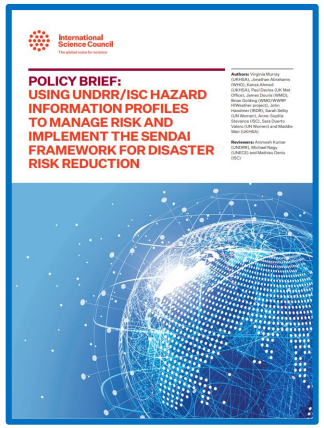




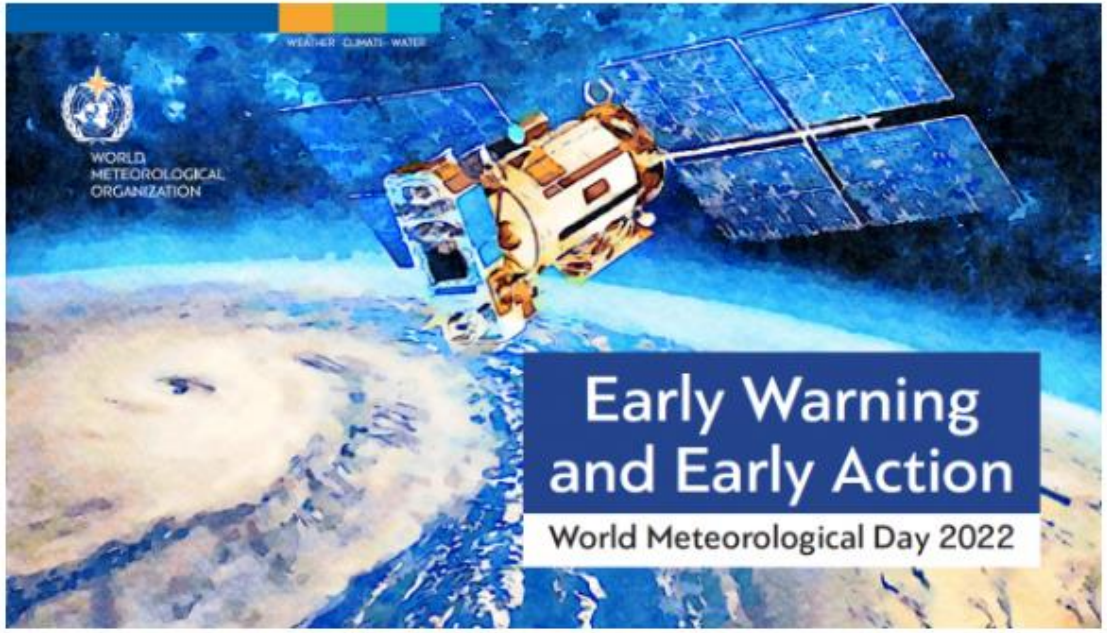
- This Centre of Excellence for Climate and Disaster Resilience was **established on 13 October 2021** – on the International Day for Disaster Risk Reduction.
- It convenes climate and disaster through **practical leadership on how to apply science to disaster risk services; joint research; policies; and capacity strengthening to achieve comprehensive disaster and climate risk management at the global, regional, nation and sub-national levels**. One goal of the centre is to increase understanding of climate and disaster risks in order to inform development and humanitarian action.
- The **UNDRR/ ISC hazard information profiles** will provide a basis for the standardization of hazard names and definitions, and will enable a more systematic understanding of hazards and their impacts.

CASE STUDY: WORLD METEOROLOGICAL ORGANIZATION (WMO) CATALOGUING OF HAZARDOUS EVENTS





- WMO is currently implementing a **new methodology for cataloguing hazardous events (WMO-CHE).** This will provide essential inputs for identifying, reducing and transferring risk, as well as for tracking global policy indicators such as the Sustainable Development Goals, the Paris Agreement and the Sendai Framework.
- Methodology uses **modern database methods that are hierarchy-free** (no tree structure to store data) and facilitates flexible analysis. It centres on uniquely identifying and recording hazardous meteorological, climate, water, and space weather events, and other related environmental phenomena.
- WMO will **use material developed in the UNDRR/ ISC hazard information profiles** to begin to identify hazardous events. This will help improve WMO's understanding of complex and cascading events, and trends in frequency, severity and distribution, and will enable the organization to **strengthen early warning systems.**



Early Warning systems must protect everyone within five years

Tags: WMO Disaster risk reduction Climate change Observations Forecast Disasters

23 Published **23 March 2022**

Press Release Number: 23032022

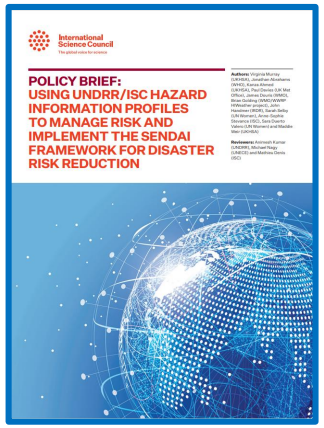
UN unveils ambitious target to adapt to climate change and more extreme weather

Within the next five years, everyone on Earth should be protected by early warning systems against increasingly extreme weather and climate change, according to an ambitious new United Nations target announced today.

Latest WMO News

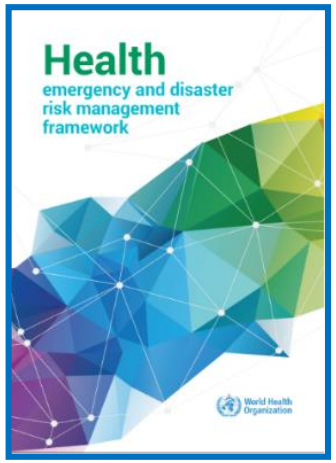
"Science for Climate Action" pavilion by WMO, IPCC and MERI Foundation at

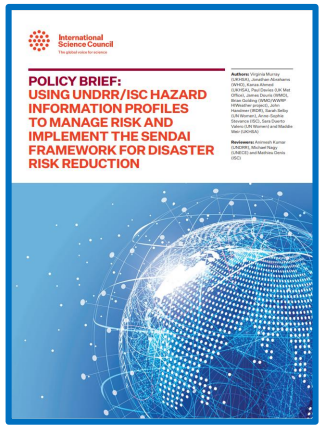
CASE STUDY: UNITED NATIONS INTERAGENCY EXPERT GROUP ON DISASTER RELATED STATISTICS



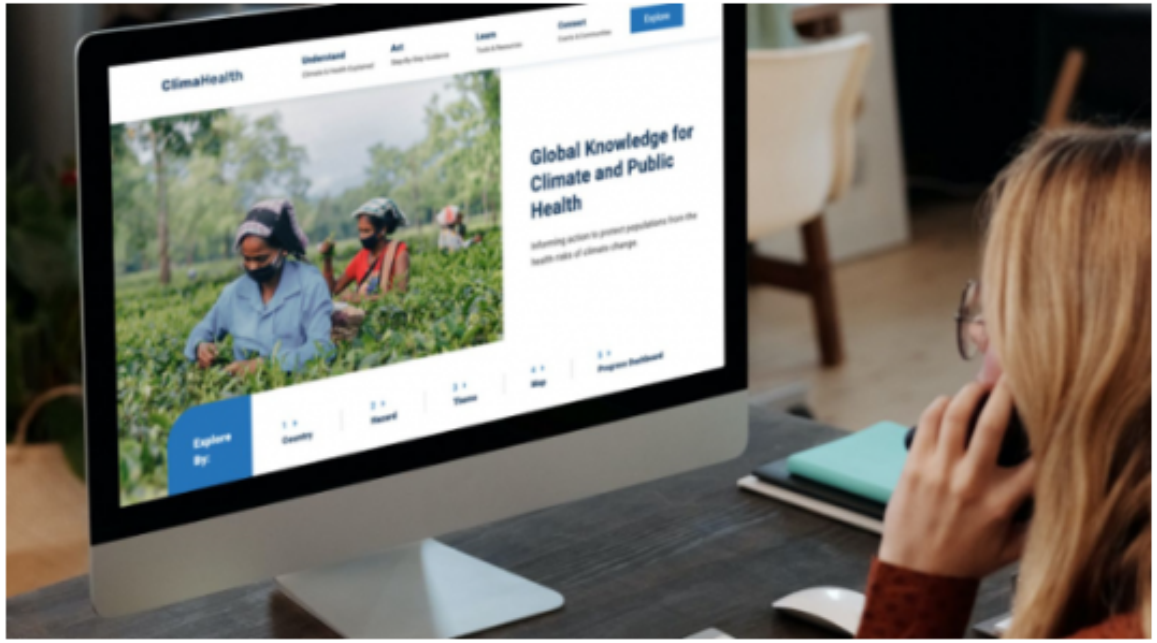
- The **United Nations Inter-Agency Expert Group on Disaster-related Statistics (IAEG-DRS)** was established under the aegis of the UN Statistical Commission. This commission is coordinating the development of a global framework on disaster related statistics, while also bringing together **national statistical and disaster management offices** in order to strengthen the data ecosystem and standards for disaster management in individual countries.
- IAEG-DRS uses **hazard definitions and classifications from the UNDRR/ISC hazard information profil**es to provide an important layer of data standardization that will recommend to governments the use of the reviewed classification system for monitoring and reporting in disaster risk reduction, and thus to gradually integrate it into databases and reporting systems.

CASE STUDY: WORLD HEALTH ORGANIZATION FRAMEWORK FOR HEALTH EMERGENCY AND DISASTER RISK MANAGEMENT





- Recognizing the wide range of hazards to which communities are exposed, the **World Health Organization (WHO) Health Emergency and Disaster Risk Management Framework** include the WHO classification of hazards.
- This classification was a key input for identifying the hazards to be included in the **UNDRR/ISC hazard definition and classification review**. The revision of WHO's classification of hazards now underway aligns with the UNDRR/ISC hazard information profiles.
- Both provide a common understanding of **how hazards affect public health and enable whole-of-society action** such as:
  - all-hazards risk assessment;
  - multi-hazard early warning systems;
  - critical infrastructure protection;
  - emergency preparedness and response; and
  - delivery of health services to save lives and reduce injuries, illnesses and other health impacts caused by emergencies and disasters.



WMO and WHO launch ClimaHealth portal

Tags: Climate change Public health Early Warnings

31 Published 31 October 2022

The first global knowledge platform dedicated to climate and health - ClimaHealth.info - has been launched by the World Meteorological Organization and World Health Organization Joint Office on climate

Latest WMO News

COP27 outcomes emphasize early

UNDRR DesInventar Sendai

SENDAI FRAMEWORK
FOR DISASTER RISK REDUCTION

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What is DesInventar Sendai? →

Basic methodology →

Disaster Hazards classification →

Definition of effects →

About loss data sources →

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Welcome to DesInventar Sendai !!!

Disaster loss data for Sustainable Development Goals and Sendai Framework Monitoring System

DesInventar Sendai available documents:

(EN) User Manual Analysis

(EN) Data Management

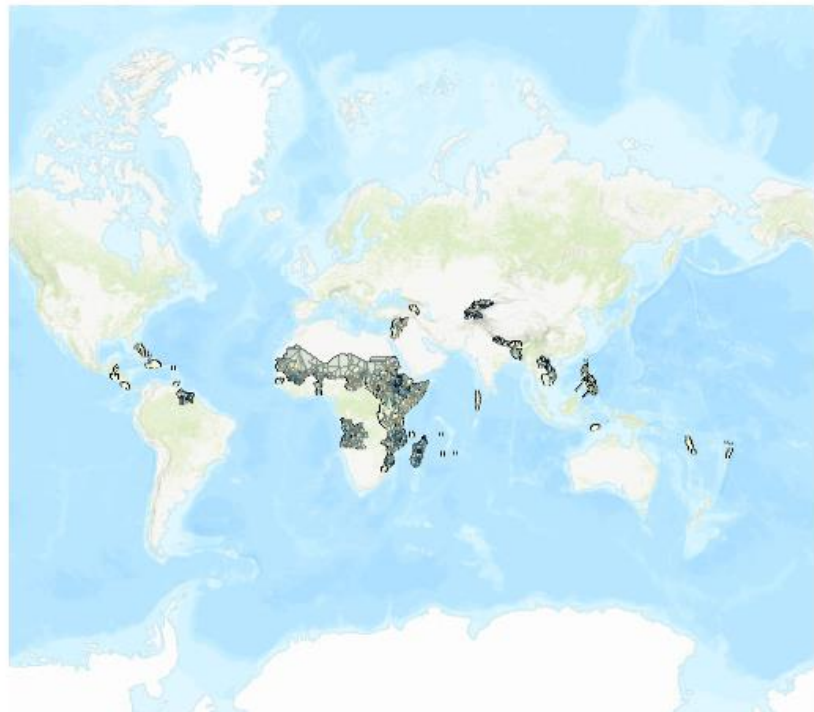
(FR) Guide de l'utilisateur

The DesInventar Sendai server software open-source and is free of charge for commercial and non-commercial use. I distributed under an "Apache-2" licens which is even less restrictive than GNU FreeBSD licenses.

Risk Information Exchange

HOME | ALL DATASET LISTINGS | COUNTRY PROFILES

RiX is a living repository of open-source global, regional and national risk data and information to improve risk knowledge, risk literacy and risk analytics. Contributing to country-led efforts to strengthen their national risk data ecosystems, including for early warning and disaster risk reduction, RiX was launched as a beta in 2022, with new features continuously added. As a multi-purpose platform, RiX seeks to harmonize risk information to facilitate risk analysis by government, UN, private, and other actors for risk-informed decision making and resilience building.



10000 km
4000 mi

Risk Information Exchange (undrr.org)

UNDRR United Nations Office for Disaster Risk Reduction

EN

HOME ABOUT UNDRR IMPLEMENTING THE SENDAI FRAMEWORK NEWS & EVENTS BUILDING RISK KNOWLEDGE

news ▸ Features

2023 delivery date for next generation disaster losses tracking system

FEATURES 2 December 2022

Source(s): UNDRR Bonn Office

“The adoption of a set of indicators to monitor the Sendai Framework and the Sustainable Development Goals, associated statistical methodologies, and **the launch of hazard classification and profile**s, are important elements to enhance the data standards to better track losses and damages”, said Prof. Virginia Murray, Head of Global Disaster Risk Reduction, UK Health Security Agency.

Next generation disaster losses tracking system | UNDRR

Default translation

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On

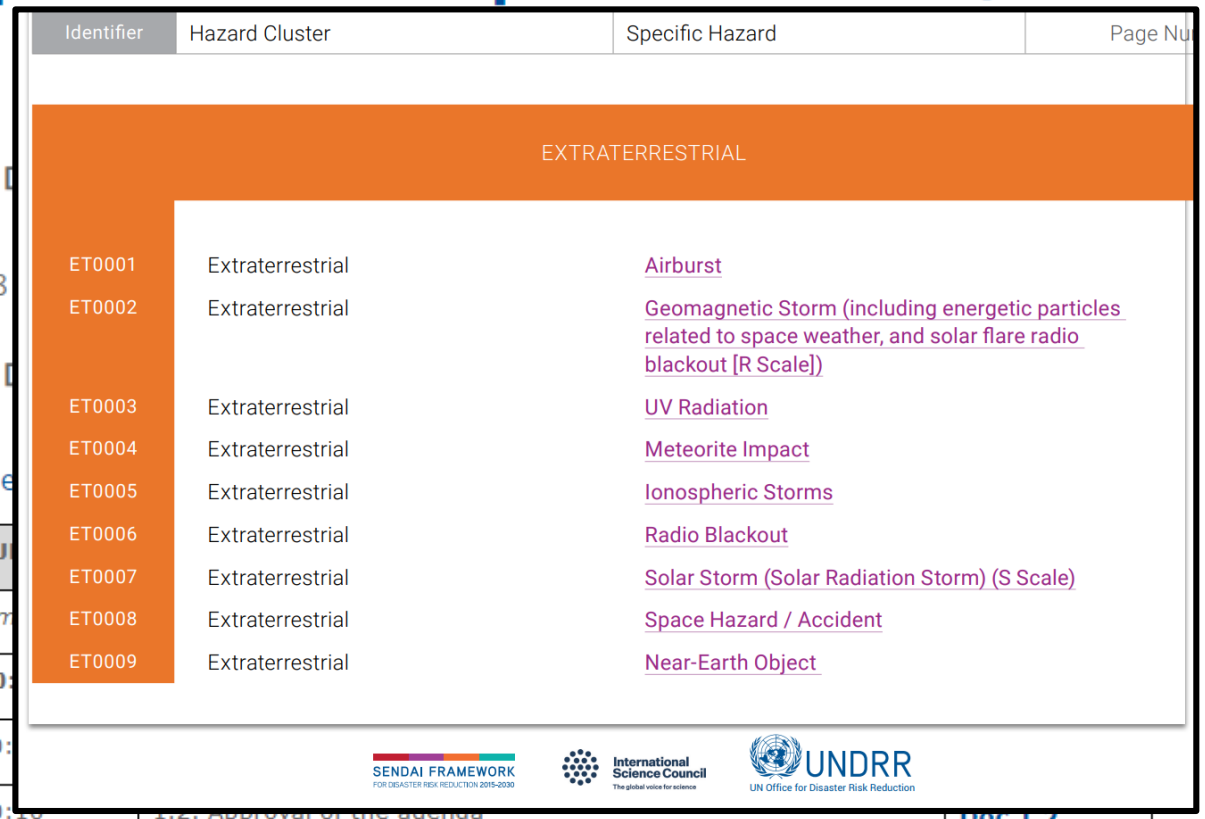
2nd Meeting of the Expert Team on Space Weather (7 - 8 March 2023)

START DATE
07 March 2023

END DATE
08 March 2023

LOCATION
online (MS Teams)

ACTIVITY AREAS (1)



Identifier	Hazard Cluster	Specific Hazard	Page Nu
	EXTRATERRESTRIAL		
ET0001	Extraterrestrial	Airburst	
ET0002	Extraterrestrial	Geomagnetic Storm (including energetic particles related to space weather, and solar flare radio blackout [R Scale])	
ET0003	Extraterrestrial	UV Radiation	
ET0004	Extraterrestrial	Meteorite Impact	
ET0005	Extraterrestrial	Ionospheric Storms	
ET0006	Extraterrestrial	Radio Blackout	
ET0007	Extraterrestrial	Solar Storm (Solar Radiation Storm) (S Scale)	
ET0008	Extraterrestrial	Space Hazard / Accident	
ET0009	Extraterrestrial	Near-Earth Object	

SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION 2015-2030 · International Science Council The global voice for science · UNDRR UN Office for Disaster Risk Reduction

UNDRR/ISC Hazard Information Profiles