

International semester ,crisis & disaster management'

Welcome to our Disaster Risk Management Training

Volker Stillig

27 February 2024

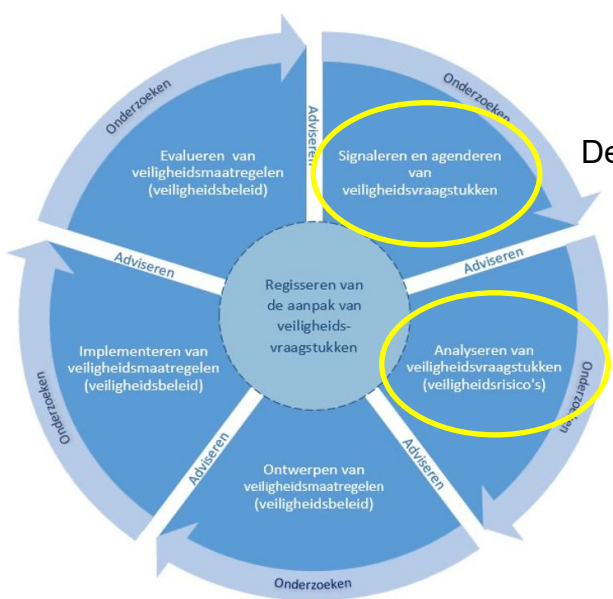


[HTTP://DRMKC.JRC.EC.EUROPA.EU](http://drmkc.jrc.ec.europa.eu)

This week

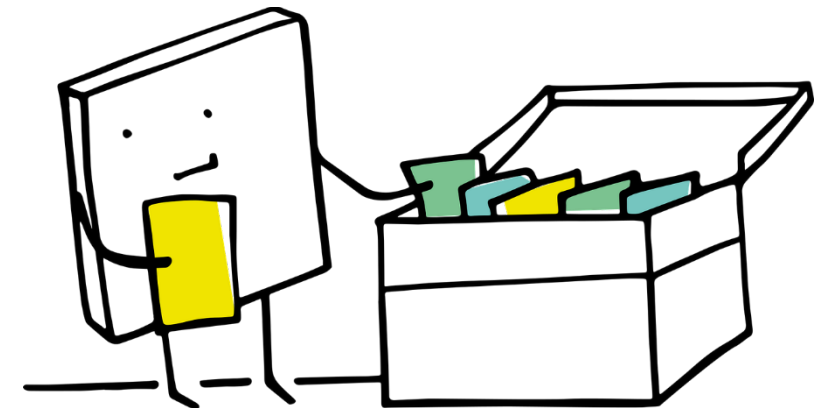
With the DRM training we would like to provide (future) disaster risk management professionals with international, state of the art, evidence based knowledge about disaster risk management which should contribute to the quality of disaster risk management practices.

Main objective of the course is that students understand the main concepts of disaster risk management, from understanding the risk to communication and management; also take into account possible future challenges.



Detecting and putting safety issues on the agenda

Analysing safety issues





FASTTRACK



WORLDWIDE



INNOVATION



European countries and the whole community dealing with disasters

Disaster Risk Management Knowledge Centre Facts&Figures 2023



Partnership



CONRIS
3rd Disaster Risk Management Training
8 seminars
150 participants

Union Civil Protection Knowledge Network

Union Civil Protection Knowledge Network
88 collaborating organizations
from **32 countries**



Steering Group
bringing together **12 policy DGs**

7th DRMKC Annual Seminar
in the framework of the
Union Civil Protection Knowledge Network
120 participants in presence
around **190 online**



Knowledge



DRMKC Flash News
4 editions within one year
2 780 openings per newsletter
2 375 users subscribed

UCPM Newsletters
4 editions within one year
2 157 openings per newsletter
1 601 users subscribed



3 Community of Practice meetings
for a total of **91 participants** from
13 Directorate Generals/Agencies

32 events organized/co-organized by DRMKC

45 DRM science publications
(Q1, Q2, Q3 of 2023, Q4 under preparation)



GCRI (Global Conflict Risk Index)
62 online participants
to the September training
of the revamped Science4Peace portal



Tools&Services



DRMKC website
visits more than doubled
since 2022
11 352 returning visits
62 376 visits
197 177 views
89 400 downloads



Risk Data Hub

5634 visits 8 times more than 2022

Release of the API (November)
300 requests:
190 for the documentation
110 to access the data



INFORM
SHARING CRISIS ANALYSIS

More than **1 900 downloads per month** (almost 65 downloads per day), **40% increase** compared to the last year

used by **122 different National Authorities** and
2 583 other bodies



Science4Peace



Since the relaunch of the new portal in September,
the daily visits are doubled



CONRIS Network









Cooperation Network for Risk, Safety & Security Studies

CONRIS is a network of universities with accredited degree programs in risk, safety & security management. CONRIS aims at increasing safety and security in Europe through collaboration in education and research.

[▶ Play Introduction](#)



Day	Tue 27 February	Wednesday 28 February	Thursday 29 February	Friday 1 March
Topic	Understanding concepts of disaster risk reduction	Understanding the disaster risk	Communicating and managing disaster risks	Poster presentation
Morning session	 09.00 AM Welcome, organizational aspects <i>Volker Stillig, Hester Nijhof, Saxion UAS</i>	 09.00 AM Welcome, organizational aspects <i>Volker Stillig, Hester Nijhof, Saxion UAS</i>	 09.00 AM Welcome, organizational aspects <i>Volker Stillig, Hester Nijhof, Saxion UAS</i>	Online  09.00 PM Working on your group assignment <i>Project rooms, coaching by lecturers</i>
	 09.15 AM Introduction disaster risk management and disaster risk reduction concepts <i>Volker Stillig, Hester Nijhof, Saxion UAS</i>	 09.15 AM Hazards and their impact <i>James Douris, World Meteorological Organization</i>	 09.15 AM Coping and adaptive capacities to deal with disaster risks <i>Igor Milić, Velica Gorica UAS</i>	 10.30 AM – 14.00 AM Final poster presentation (online) <i>All (in groups)</i>
	 10.15 AM Break	 10.15 AM Break	 10.15 AM Break	
	 10.45 AM Introduction assignment ‘understanding your crisis type’ <i>Hester Nijhof, Saxion UAS</i>	 10.45 AM Risk drivers that foster hazards, their likelihood, exposure and/or vulnerability in the future <i>Prof. Dr. Clemens Gause, Hamburg Northern Business School</i>	 10.45 AM Public perception and communicating disaster risks <i>Yung-Fang Chen, Coventry University</i>	
	 11.15 AM Orientation on the assignment (including lunch break)	 12.00 AM Working on your group assignment <i>Project rooms, coaching by lecturers</i>	 12.00 PM Working on your group assignment <i>Project rooms, coaching by lecturers</i>	
Break				
Afternoon session	 01.00 PM Introduction international policy frameworks on disaster risk management <i>Zsuzsanna Gyenes & Ian Clark, Disaster Risk Management Knowledge Centre, Joint Research Centre EU</i>	 02.00 PM Societal Transformation: From Risk Management to Collapse of Societies <i>Juergen Weichselgartner, Berlin School of Economics and Law</i>	 02.00 PM Continue working on your group assignment and preparing poster presentation <i>Project rooms, coaching by lecturers</i>	 Submit final product and poster in blackboard
	 02.00 PM Start with group assignment <i>Project rooms, coaching by lecturers</i>	 03.15 PM Working on your group assignment <i>Project rooms, coaching by lecturers</i>	<div style="background-color: yellow; padding: 10px; font-size: 2em; font-weight: bold; color: blue;"> Disaster Risk Management Training = assignment #1 </div>	

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Guest lectures will help to understand disaster risk management.

But: You have to transfer and apply this knowledge to your specific crisis type.

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External participants

- Online lectures and online participation
- Hybrid lectures
- > 20 participants from all over the world

DRMKC - Disaster Risk Management Knowledge Centre

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Disaster Risk Management Training Online at Saxion University of Applied Sciences 2024



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[Detailed programme](#)

Intro

The Disaster Risk Management Knowledge Centre (DRMKC) and the Cooperation Network of Risk, Safety and Security studies (CONRIS) share a common goal: to provide (future) disaster risk management professionals with international, state of the art, evidence based knowledge about disaster risk management which should contribute to the quality of disaster risk management practices. The Disaster Risk Management Training is integrated part of study programme Safety&Security Studies, international semester 'crisis&disaster management'.

Main objective of the training is that students understand the main concepts of disaster risk management, from understanding the risk to communication and management; also take into account possible future challenges. The training consists of four training days. Next to (online) presentations and discussions about core principles of disaster risks management Saxion students will zoom in and apply the information to specific crisis types, e.g. extreme weather events. This will be done in group work. On the last day, the training will be concluded by poster presentations and an evaluation of the training.

The training takes place from 27 February – 1 March 2024 in Deventer (the Netherlands). All Saxion students attend the training course on location. For external students and professionals, it is possible to join the presentations online.

International semester ,crisis & disaster management'

Introduction disaster risk reduction

Volker Stillig

27 February 2024





Where was this photo taken?



**A woman walks through Greenwich
Park in London in July 2022**



- The summer of 2022 was the hottest in Europe for at least 500 years.
- Excess mortality in the months of June, July and August amounted to **107,000 people**.
- “Summer of the century” in 2003 claimed around 70,000 lives. Refrigerated tents had to be set up on the outskirts of Paris because the city's morgues were completely overcrowded.
- The record summer of 2003 has already been beaten four times since then. The hottest summers to date are now, in ascending order, 2010, 2018, 2021 and 2022.

Top 10 disasters in Europe ranked according to reported (a) deaths and (b) economic losses (1970–2019)

Table 7. Top 10 disasters in Europe ranked according to reported (a) deaths and (b) economic losses (1970–2019)

(a)	Disaster type	Year	Country	Deaths
1	Extreme temperature	2010	Russian Federation	55 736
2	Extreme temperature	2003	Italy	20 089
3	Extreme temperature	2003	France	19 490
4	Extreme temperature	2003	Spain	15 090
5	Extreme temperature	2003	Germany	9 355
6	Extreme temperature	2015	France	3 275
7	Extreme temperature	2003	Portugal	2 696
8	Extreme temperature	2006	France	1 388
9	Extreme temperature	2003	Belgium	1 175
10	Extreme temperature	2003	Switzerland	1 039
(b)	Disaster type	Year	Country	Economic losses (in US\$ billion)
1	Flood	2002	Germany	16.48
2	Flood	1994	Italy	16.03
3	Flood	2013	Germany	13.86
4	Storm	1999	France	12.27
5	Flood	2000	Italy	11.87
6	Flood	1983	Spain	10.0
7	Drought	1990	Spain	8.81
8	Flood	2000	United Kingdom	8.75
9	Storm	2007	Germany	6.78
10	Storm	1990	United Kingdom	6.65

Colombia: Drought and Wild Fires - Jan 2024

On 27 January 2024, by Decree No. 037, the Government of Colombia declared a National Disaster Situation for a period of 12 months, due to the impact of the "El Niño" phenomenon, which is a climate variability phenomenon that occurs every two to seven years...

Marshall Islands: Storm Surge - Jan 2024

On the night of 22 January 2024, a significant water and wave-related event occurred due to a potent winter storm system in the far northern Pacific. This event primarily impacted the Marshall Islands, particularly the Roi Namur Islet in the northern sector...

Alert and Ongoing Disasters



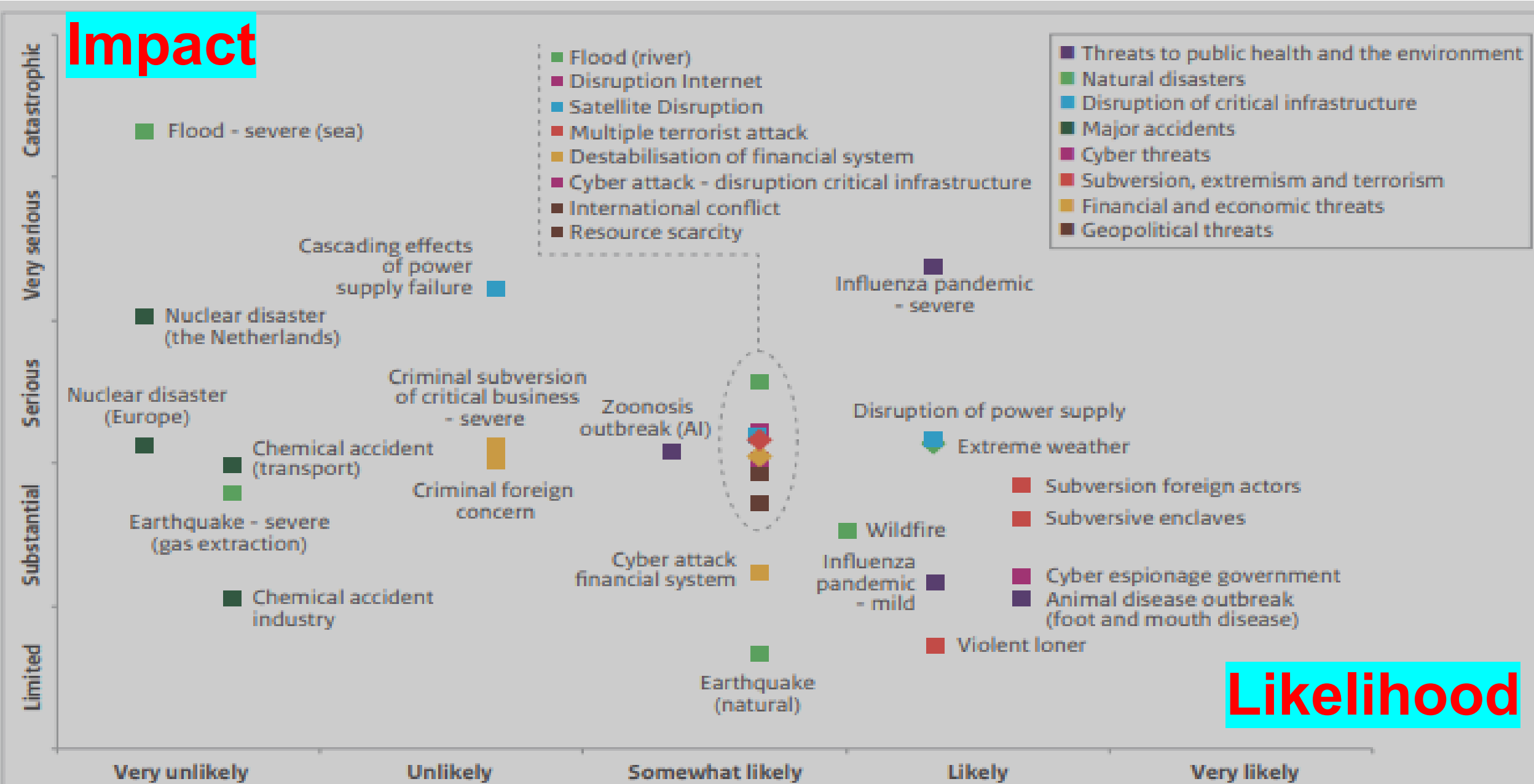
Ecuador: Floods - Feb 2024

Heavy rainfall has been affecting northern and western Ecuador, in particular Esmeraldas, Manabí and Los Rios Provinces since 30 January, causing floods that have resulted in population displacement and damage. According to the WHO/PAHO, the Ecuadorian...

Zambia: Cholera Outbreak - Oct 2023

A cholera outbreak which was first reported in October 2023 has seen a dramatic increase in transmission since mid-December. The country has now recorded a cumulative 8,276 cases and 333 deaths, with 446 new cases and 23 deaths in the past 24 hours according...

Figure 12.1 Risk diagram including the scenarios which serve as illustrations of the threat-related themes.



Source: National Risk Profile 2016, p. 182



- National security interests
- Intersecting themes
- Threats to national security

We really need to understand 'disaster risk'...

Impact

Likelihood

Hazard

Disaster
Crisis

Exposure

Vulnerability

Coping capacities

Disaster risk reduction

Risk drivers

Adaptive capacities

Build back better

Sendai framework for disaster risk reduction 2015-2030



How did the concept of disaster risk reduction develop?

1970s

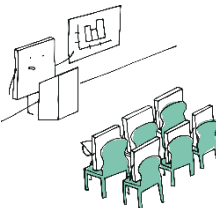
- Actual and potential consequences of natural hazards were becoming so severe, and were of such a scale, that much greater emphasis on **pre-disaster planning and prevention** was imperative
- Development of a **methodology for risk and vulnerability analysis**

1980s / 1990s

- **Technocratic paradigm: disaster as a geophysical phenomenon**. The physical hazard as the main trigger in the explanations of the disaster.
- Causes of the disaster were somehow **external to the organization of society**.
- 1990s: International Decade for Natural Disaster Reduction: Focus on raising public (governmental) awareness – to move away from **fatalism** and to actively reduce disaster losses and impacts.

1994 / 2000s

- “**Disasters are socio-ecological processes par excellence**”. This means that they are the result of social, environmental, cultural, political, economic, physical, and technological processes, as well as individual choices, which, in their interaction with a hazard, produce damage.



Sendai Framework 2015-2030

...in 2015 adopted by UN Member States at the 3rd UN World Conference on Disaster Risk Reduction in Sendai City, Japan.

The Framework aims to achieve 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 over the next 15 years.



Sendai framework - priorities for action

There is a need for focused action within and across sectors by States at local, national, regional and global levels.

Priority 1: Understanding disaster risk

Disaster risk management needs to be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment.

Priority 2: Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is vital to the management of disaster risk reduction in all sectors and ensuring the coherence of national and local frameworks of laws, regulations and public policies.

Priority 3: Investing in disaster risk prevention and reduction

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.

Priority 4: Enhancing disaster preparedness for effective response

Disaster preparedness needs to be strengthened for more effective response and ensure capacities are in place for effective recovery.

Understanding disaster risk

RISK KNOWLEDGE



Probability of a certain intensity of a hazard at a specific location

HAZARD

Property, people, assets and infrastructure located in hazard-prone areas

EXPOSURE

RISK

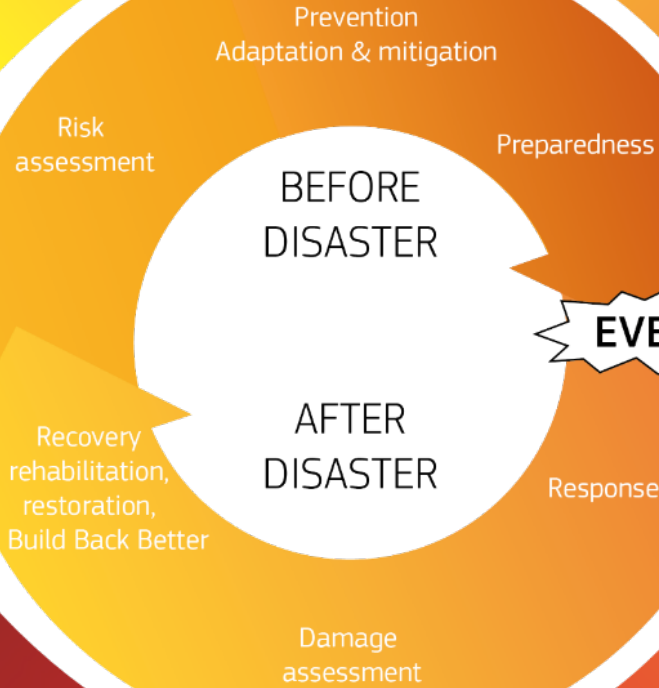
Resistance. Conditions determined by physical, social, economical and other factors which increase/decreases vulnerability to the impact of a hazard

VULNERABILITY
susceptibility, lack of coping/adaptive capacities



**LESSONS
LEARNT**

RISK MANAGEMENT



CM

Hazard

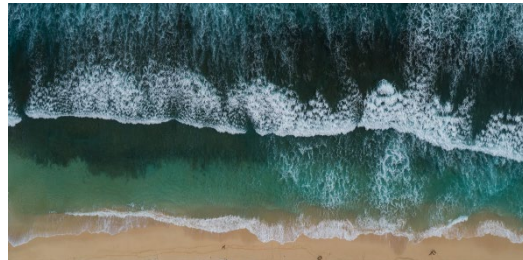


Hazard vs. disaster / crisis

Hazard: 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.

Source: UNDRR open-ended intergovernmental expert working group on indicators and terminology, <https://www.undrr.org/terminology>

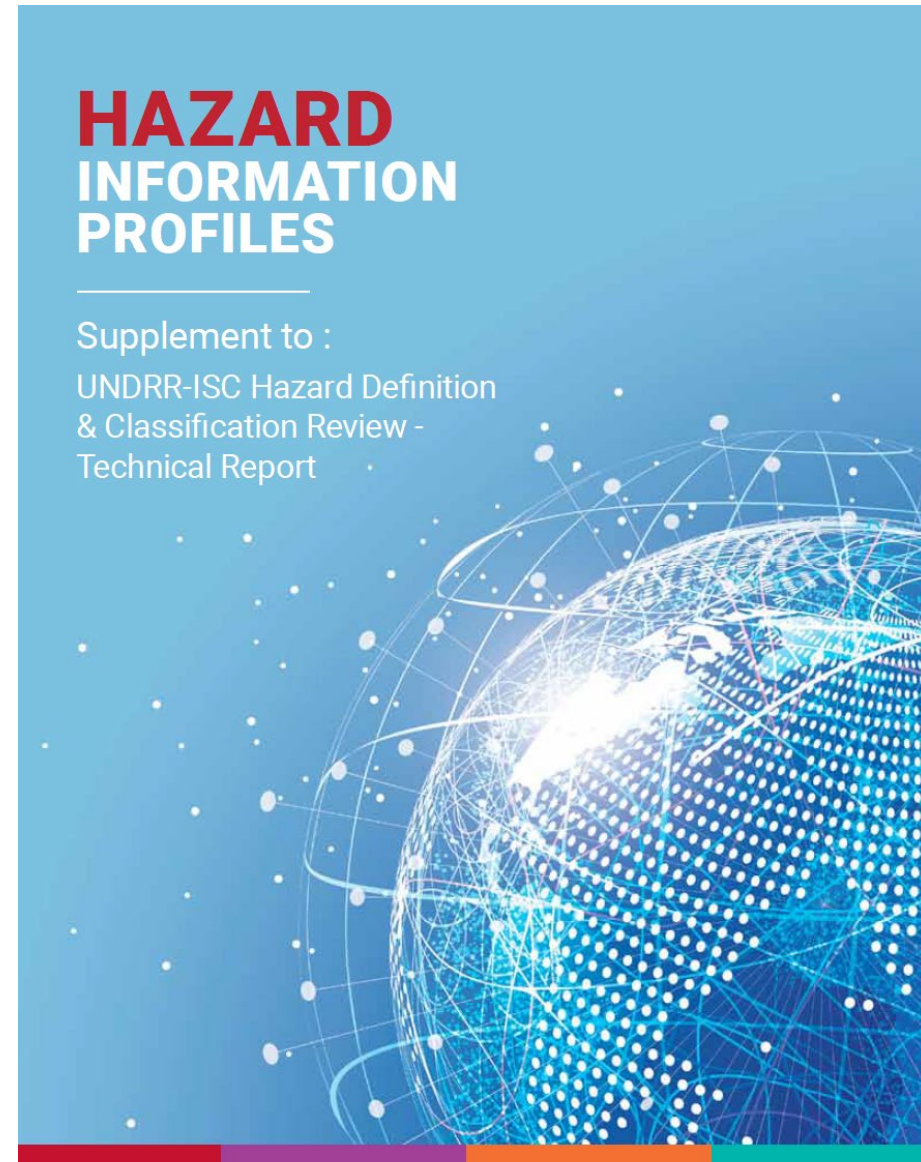
Hazard vs. disaster/crisis



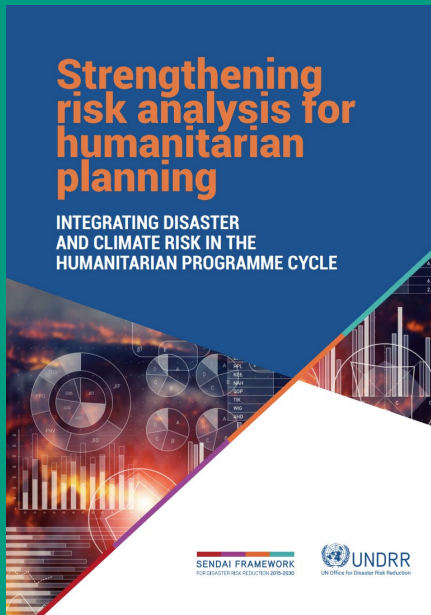
Interesting!

The [Hazards Information Profiles](#) and the [Technical report](#) provide an important resource to support the implementation of disaster risk reduction and risk-informed investment, aligned with the Sendai Framework for Disaster Risk Reduction 2015–2030.

Overview of more than 300 hazard information profiles



How do we measure hazards?



Download: <https://www.undrr.org/media/83715/download?startDownload=true>

Example of likelihood assessment

Hazard/shock type	Hazard/shock identified	What makes it likely?	What makes it less likely?	Likelihood assessment
Meteorological / wind-related	Hurricane	<ul style="list-style-type: none"> • Six hurricanes of category 3 over the past five years. • 14 hurricanes category 1 or 2 in the past 10 years. • No hurricane last year. 		Very likely - 5
Geo-hazard/ seismogenic	Earthquake		Not an area deemed at risk. Absence of tectonic movement for the last 10,000 years.	Very unlikely -1
Meteorological / precipitation-related	Drought	<ul style="list-style-type: none"> • Two major drought periods over the past 10 years. • Rise in temperatures recorded. 	• Reforestation efforts.	Moderately likely - 3
Hydrological / flood	Floods	• 10 major floods over the past two years.	• Upgrade of the drainage infrastructure.	Likely -4

The images below show the paths of the two typhoons. Haiyan resulted in a disaster because it hit populated areas at its highest strength. This demonstrates that disasters are not natural, but rather a combination of different natural and non-natural factors.

Exposure



The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas.
UNDRR Terminology, 2017

Typhoon Lekima

Typhoon Haiyan/Yolanda



Vulnerability

Vulnerability

The characteristics 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.

UNDRR Terminology, 2017

<https://www.preventionweb.net/understanding-disaster-risk/component-risk/vulnerability>



Vulnerability relates to a number of factors

Physical factors

e.g. poor design and construction of buildings, unregulated land use planning, etc.
(> housing standards in earthquake areas)

Social factors

e.g. poverty and inequality, social exclusion and discrimination by gender, social status, disability and age (amongst other factors), lack of medical services, etc.
(> Elderly individuals particularly susceptible to the effects of extreme temperatures)

Economic factors

e.g. the uninsured informal sector, unemployment, vulnerable rural livelihoods, dependence on single industries, globalisation of business and supply chains, etc.
(> Recover less quickly due to bad personal economic circumstances)

Environmental factors

e.g. poor environmental management, overconsumption of natural resources, decline of risk regulating ecosystem services, climate change, etc.
(> Air pollution pose significant health risks)

Not everyone who is exposed is vulnerable...

- Disaster risk not only depends on the severity of **hazard** or the number of people or assets **exposed**, but that it is also a reflection of the **susceptibility** of people and economic assets to suffer loss and damage.
- Vulnerable groups find it hardest to reconstruct their livelihoods following a disaster, and this in turn makes them more vulnerable to the effects of subsequent hazard events.
- At the same time, it is possible to be exposed but not be or less susceptible to natural hazards.

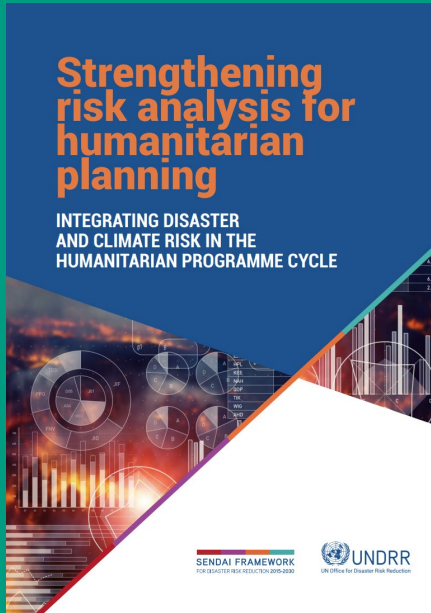


Example

- Hurricanes commonly batter the coastlines of Caribbean islands – where many wealthy populations establish their second and third homes.
- Wealthy populations, like others who live near the coast, clearly have a degree of exposure. But, as they have enough resources, they may build houses that are more resilient to storms and thus be less vulnerable.
- Also, they can recover more quickly or afford to leave the island before the storm hits.
- They and their housing would be considered highly exposed – but due to their resources, they would not be considered particularly vulnerable.



Measuring the impact

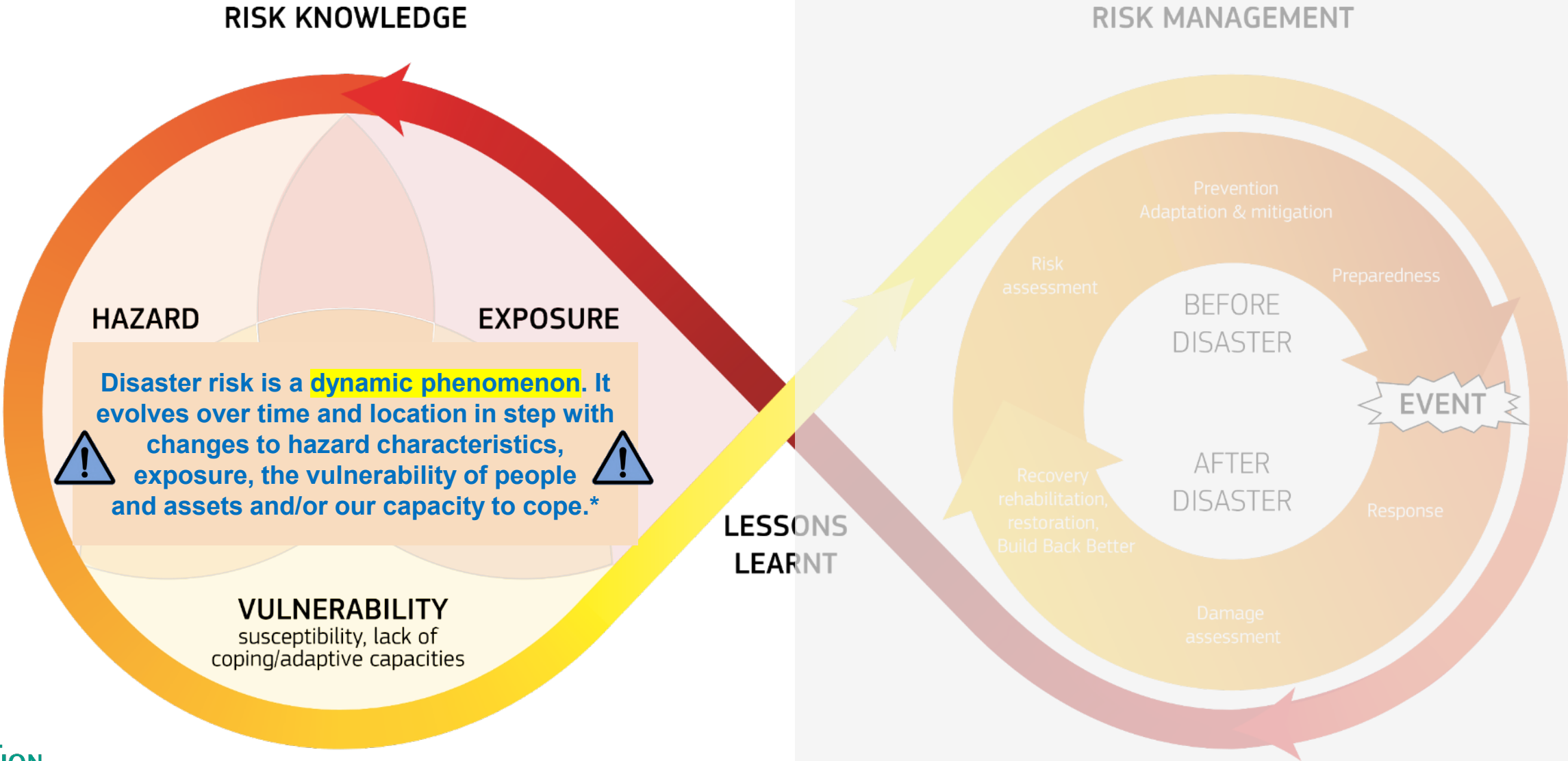


Download: <https://www.undrr.org/media/83715/download?startDownload=true>

Figure 17. Example of impact assessment

Shocks/hazard	Impact	Vulnerability	Capacity	Impact assessment
Hurricane	<p>Past category 3 hurricanes destroyed at least 60 per cent of the town, leading to a high number of casualties and more than 970,000 people affected.</p> <p>High disruptions of water, electricity and telecommunication systems.</p> <p>High population density in coastal areas.</p>	<p>Reconstructions from last hurricane still underway.</p> <p>High levels of people with disability and chronic illnesses in the coastal areas.</p> <p>Higher levels of dengue and malaria cases than usual already recorded.</p>	<p>Low investment in preparedness measures.</p> <p>Recent flooding in the area already left households' coping capacities depleted.</p>	Critical - 5
Earthquake	Not in an area deemed at risk.			Negligible - 1 No impact foreseen.
Drought	The worst drought led to a 40 per cent decline in agricultural production.	More pronounced in the south-west part of the country where 100,000 people mostly rely on farming and agriculture-	No functioning social safety-net system.	Severe - 4

Understanding disaster risk



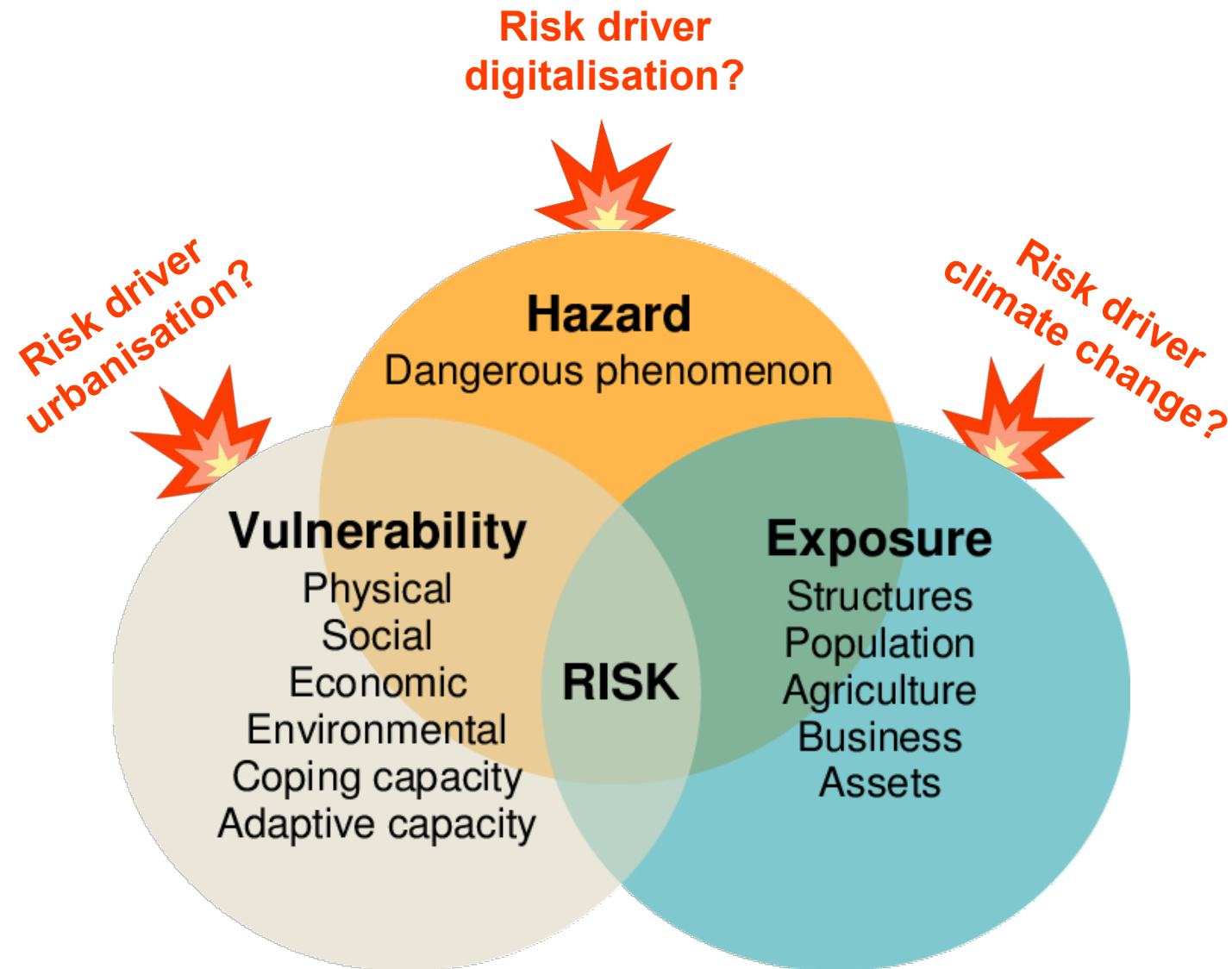
*) Source: Overview of natural and man-made disaster risks the European Union may face 2020

Source: European Commission / I. Clark (personal communication, February 2022)

Disaster risk is a dynamic phenomenon

Processes or conditions [...] that influence the level of disaster risk by increasing levels of exposure and vulnerability or reducing capacity.

Source: UNDRR open-ended intergovernmental expert working group on indicators and terminology, <https://www.undrr.org/terminology>



**What is the difference
between a crisis and a
disaster?**



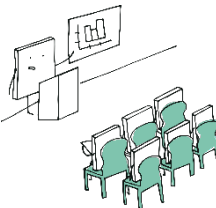
Definitions

Disaster (since 1980's): A serious accident or other incident whereby the lives and the health of many people, the environment or significant material interests have been harmed or are threatened to a serious degree.

Coordinated deployment of services or organizations from various disciplines is required to remove the threat or to limit the harmful consequences.

Crisis (since 2004): A situation in which a vital interest of society is affected or is at risk of being affected.

Source: Safety regions act and Dutch National Manual on Crisis Management



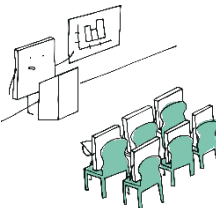
Definitions

Disaster management: the entirety of measures and facilities, including preparation for them, which the municipal authority or the management board of a security region takes with regard to a disaster, the prevention of a disaster and limiting the consequences of a disaster.

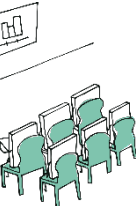
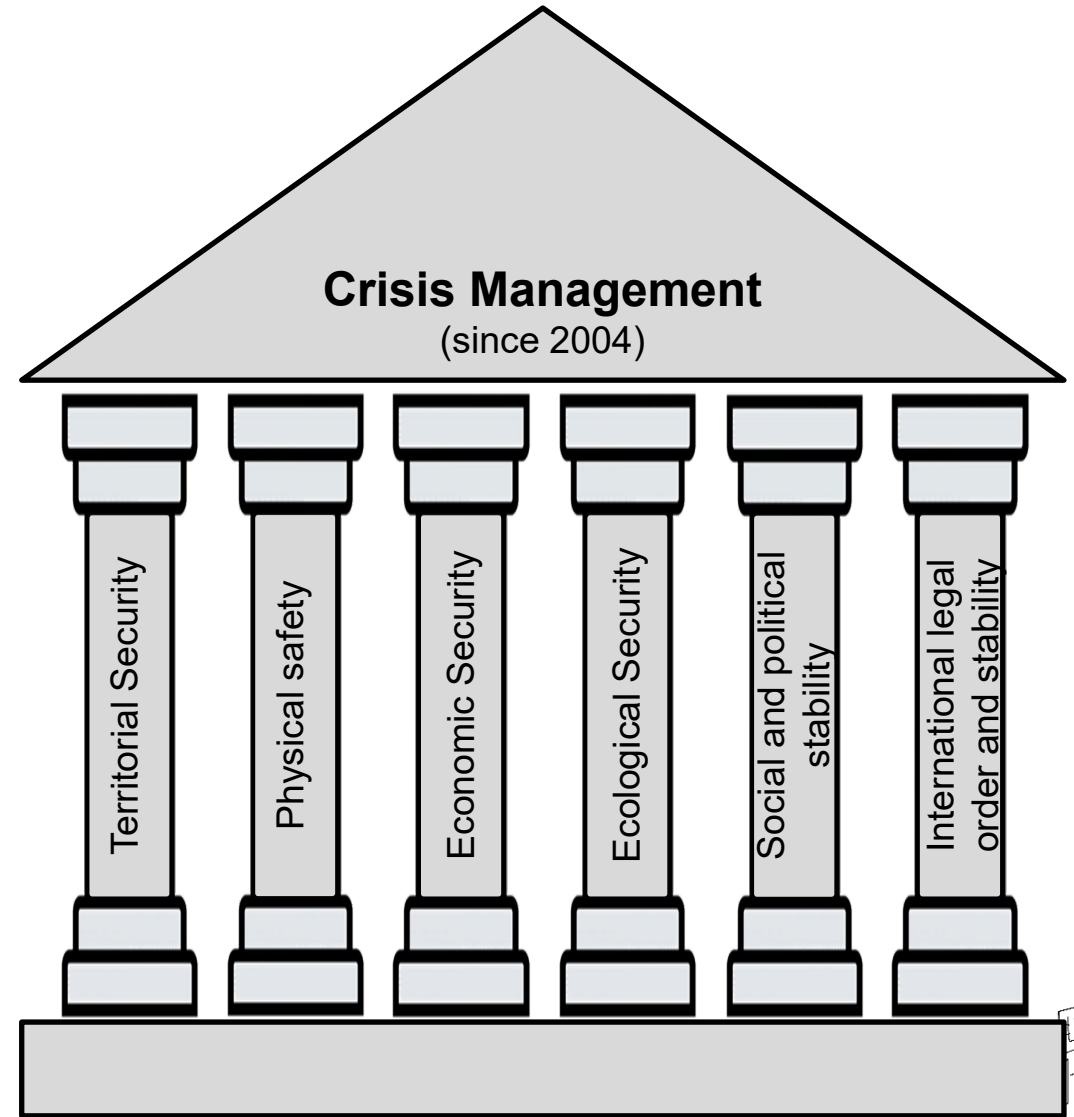
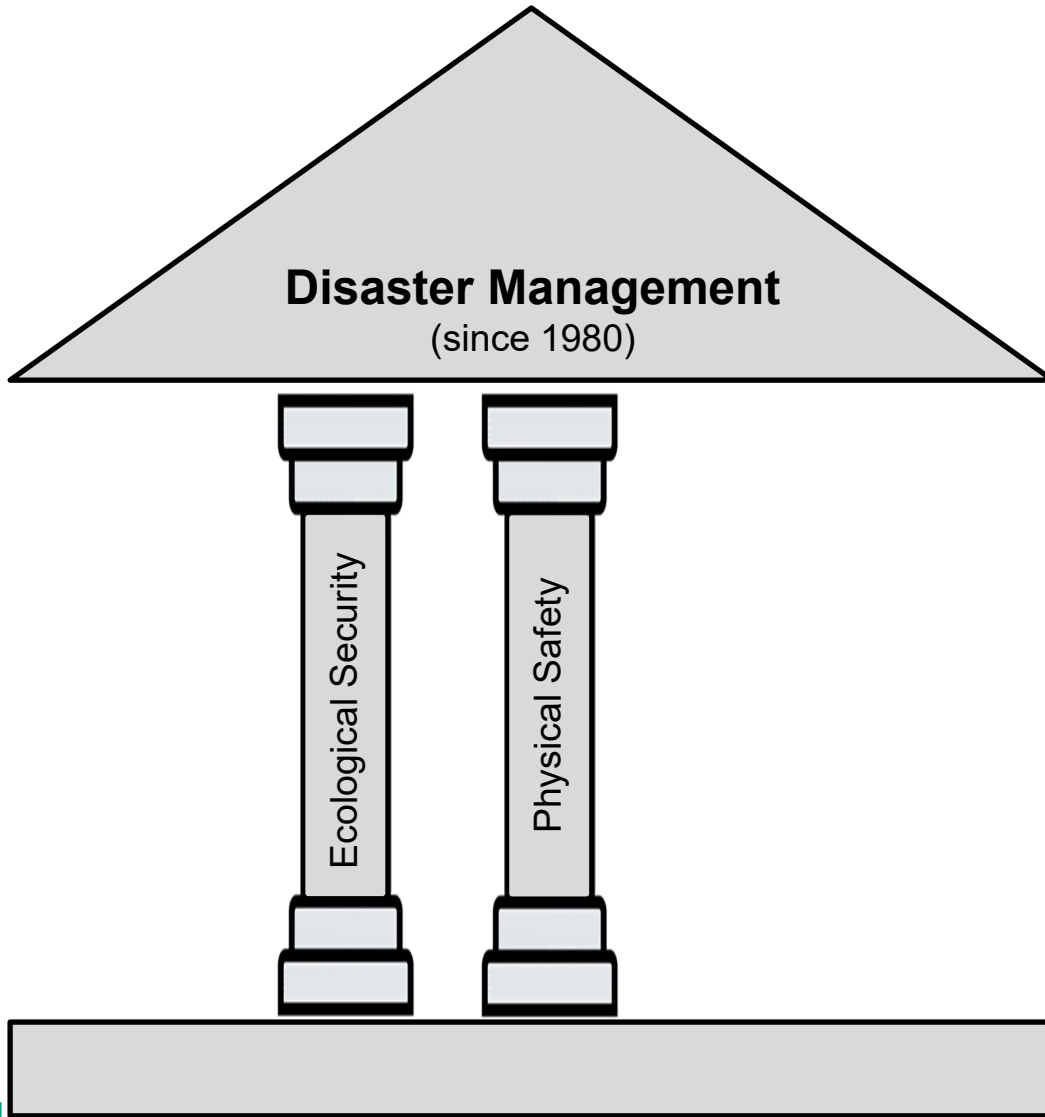
(Source: Dutch Safety Region Act)

Crisis management: crisis management entails the full spectrum of measures taken and provisions made by central government in cooperation with relevant public and private partners for coordination and decision-making in situations in which national security is (or may be) at risk or which have (or may have) serious consequences for society.

(Source: National handbook on decision-making in crisis situations)



Definitions and vital interests



Crisis

- Origin / source diffuse and often unclear
- Long-term, unknown periods, often complex and interconnected, often slow development
- Top down approach, often (inter)national involvement and public-private cooperation
- Administrative and political involvements

Disaster

- Often sudden incident, clear transition from normal to abnormal, often one single incident
- Physical characteristics (earthquake, accident, explosion, fire, storm, ...) in combination with social aspects (impact on people)
- Direct impact, short-term, direct responses necessary to reduce damage
- Bottom up, protocol and procedures, experience, training and exercises (OTO)
- Classical partners for 'classical disasters' (fire brigade, ambulance services, police, municipalities, water boards, army)

