

Disaster and Social Vulnerability

Dr Hamid Reza Khankeh

Professor in emergency and disaster health

National Coordinator for Emergency & Disaster health

Head of department and research center for

Emergency and Disaster Health

University of Social Welfare and Rehabilitation Sciences (USWR).

Department of Clinical Science and Education, KI, Sweden, Stockholm

Scientific Board Member of IPT E.V Leipzig, Germany



ISNA PHOTO

Forouzan Fardouni



Natural disasters

2017



335
Reported
disasters



9,697
Dead
people



96 million
People
affected



334 billion
US\$ economic
damage

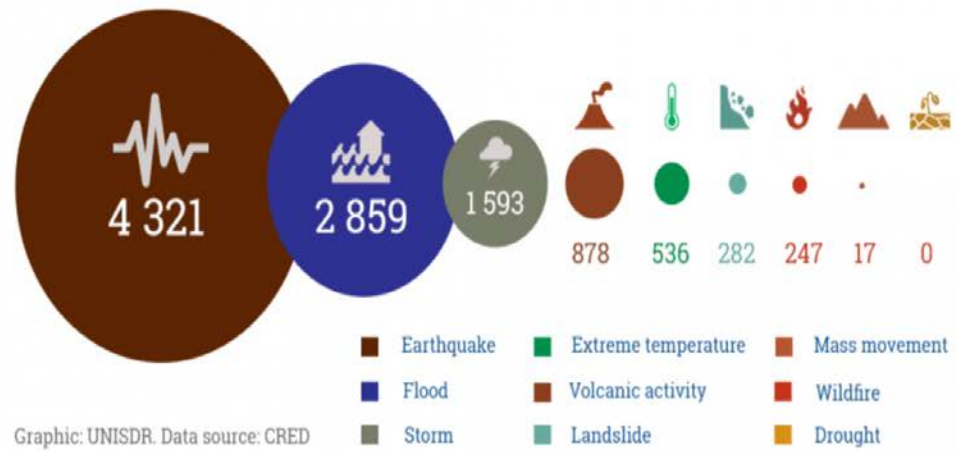
Lower mortality,
higher cost

2018: Extreme weather events affected 60 million people

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SOURCE(S): CENTRE FOR RESEARCH ON THE EPIDEMIOLOGY OF DISASTERS (CRED)
UNITED NATIONS OFFICE FOR DISASTER RISK REDUCTION (UNISDR)
UNIVERSITÉ CATHOLIQUE DE LOUVAIN (UCL)

Number of deaths per disaster type 2018



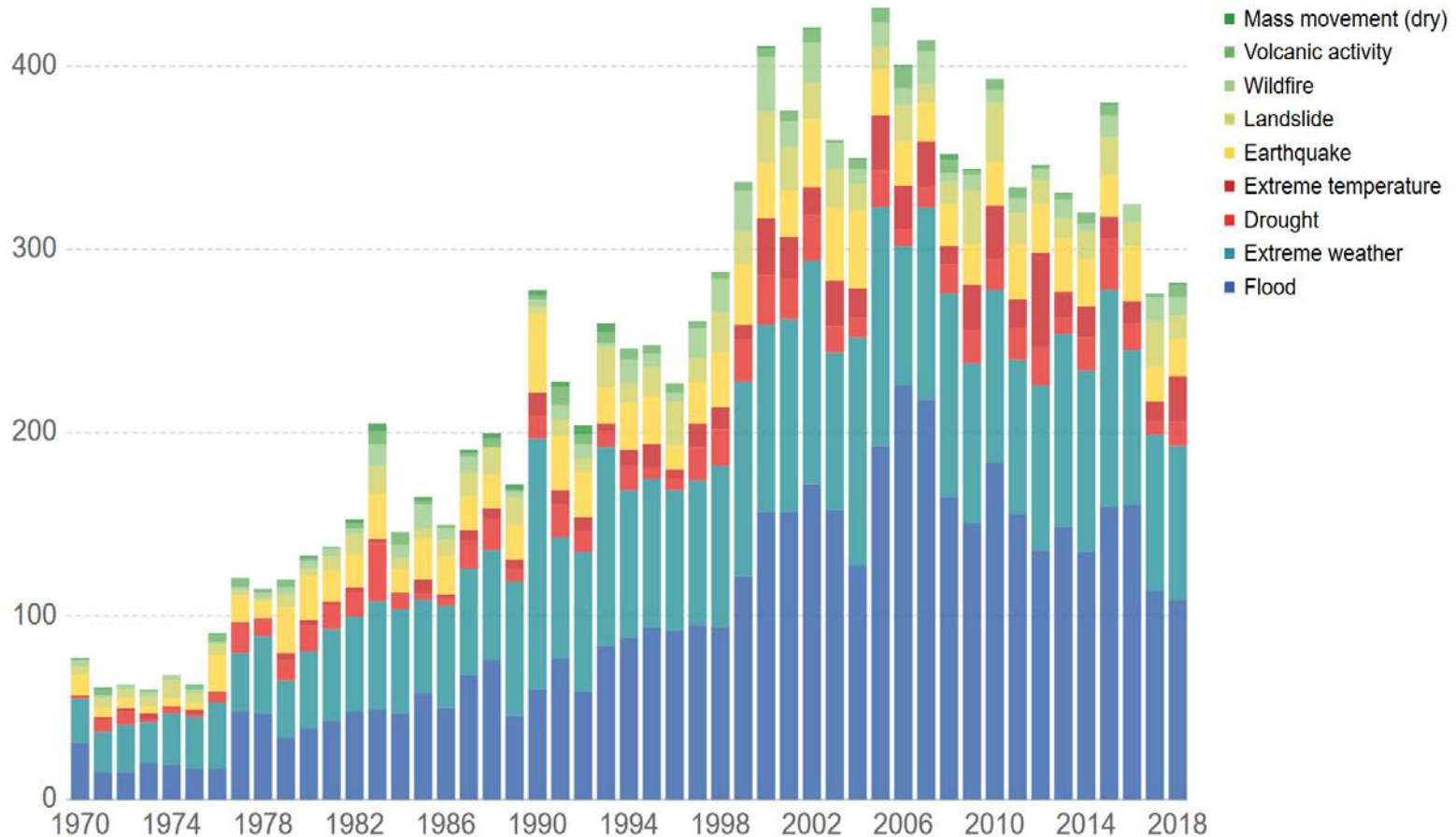
Graphic: UNISDR. Data source: CRED

Number of reported disasters by type

Global reported natural disasters by type

The annual reported number of natural disasters, categorised by type. This includes both weather and non-weather related disasters.

Our World
in Data



Source: EMDAT (2017): OFDA/CRED International Disaster Database, Université catholique de Louvain – Brussels – Belgium

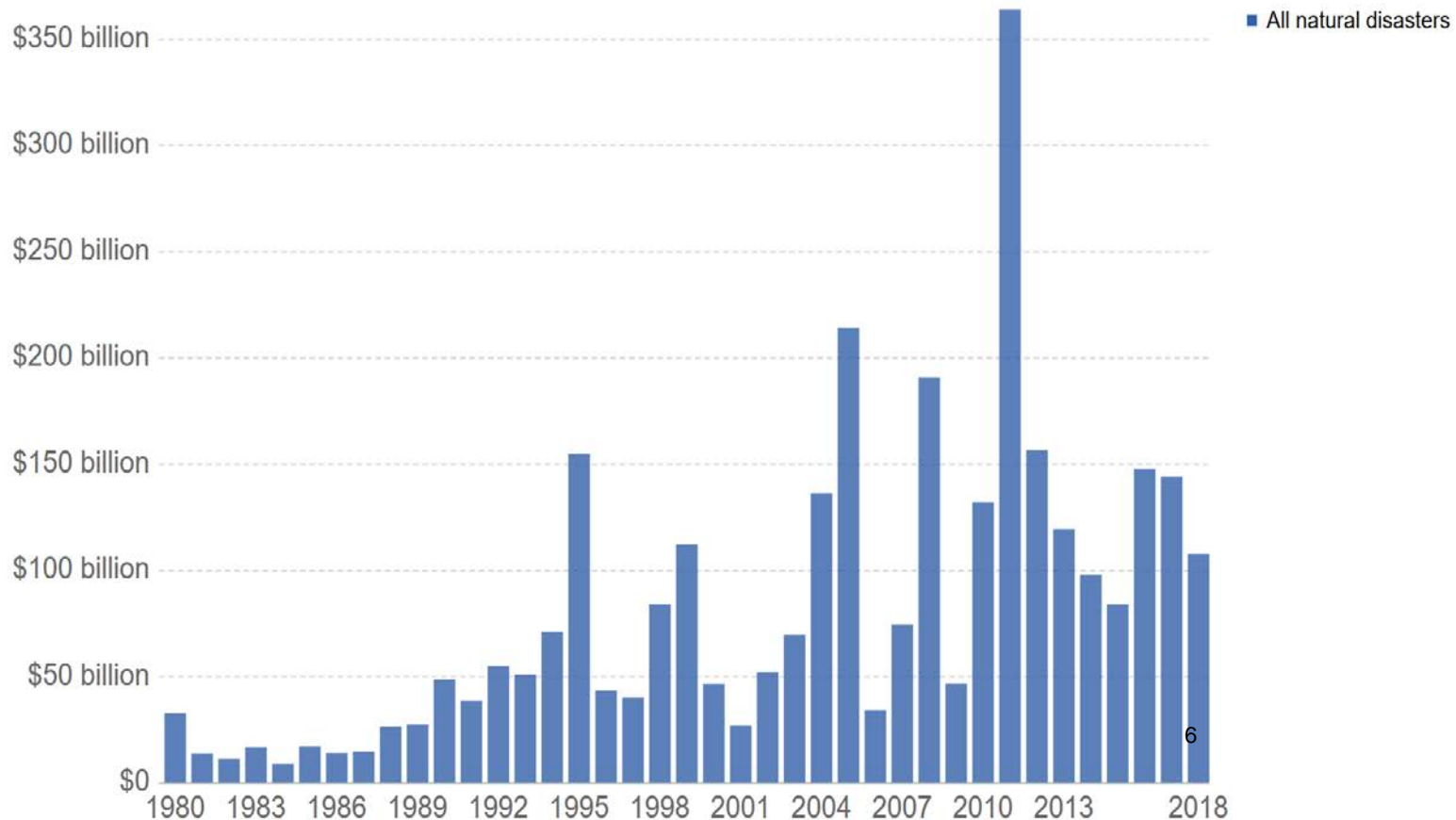
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Economic costs

Global damage costs from natural disasters

Total economic cost of damages as a result of global natural disasters in any given year, measured in current US\$. Includes those from drought, floods, extreme weather, extreme temperature, landslides, dry mass movements, wildfires, volcanic activity and earthquakes.

Our World
in Data



Source: EMDAT: OFDA/CRED International Disaster Database, Université catholique de Louvain – Brussels – Belgium

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Disaster in Iran

Iran is prone to different kinds of disaster and it ranks as one of the most disaster prone country in the world.

1. Natural

- ▶ Seismic hazards: Earthquake (Iran is crossed by several major fault lines that cover 97 percent of the country), land slide,..
- ▶ Climate/ weather related: Flood, Drought, forest fire,..

2. Manmade

- ▶ Transportation events (Road Traffic Injuries)

Vulnerabilities: physical, infrastructure, rapid urbanization, population density, **Social and cultural**, environmental degradation, deforestation,..

Iran and Disaster



Recent Disasters in Iran

Flood(Golestan, Mazandaran, Fars and ,...) 2019

Earthquake (Kermanshah)- Nov 2018

Earthquake (Kerman)- Nov 2018

Flood (Gillan) –June 2018

Earthquake (Kerman)- Nov 2017

Earthquake (Kermanshah)- Nov 2017

Flood (Azerbaijan) –April 2017

Earthquake(Fariman) – April 2017

Flash Floods - Jul 2015

Earthquake - Nov 2013

Iran/Pakistan: Earthquake - Apr 2013

Earthquake - Apr 2013

Earthquake - Aug 2012

Earthquakes - Dec 2010

Earthquake - Jul 2010

Earthquakes - Jan 2010

Influenza A (H1N1) Pandemic - Apr 2009

Earthquake - Sep 2008

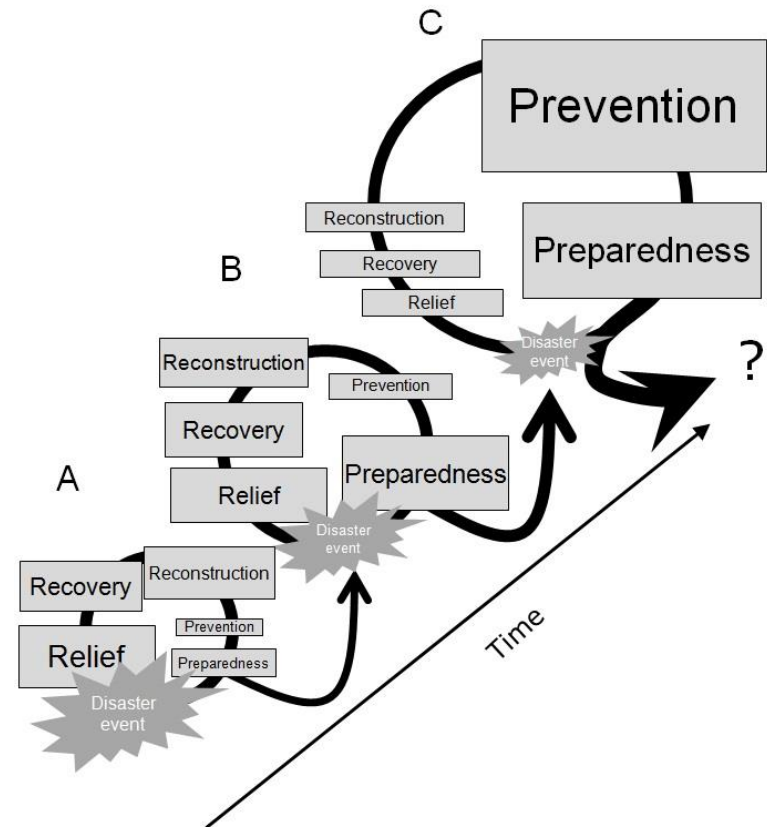
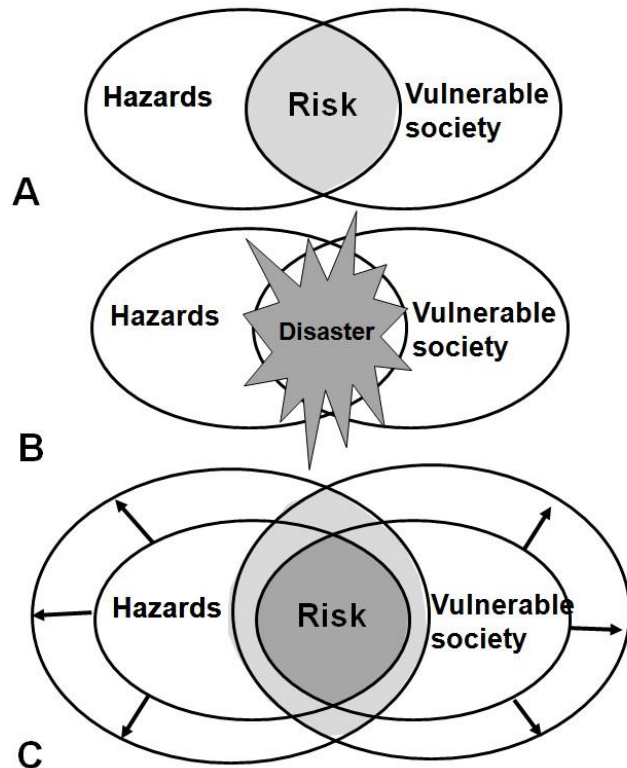
A Disaster is:

- A **serious disruption of the functioning of a community or a society** involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

Disasters are often described as a result of the combination of:

- the exposure to a hazard;
- the conditions of vulnerability that are present;
- and insufficient capacity or measures to reduce or cope with the potential negative consequences.

Disaster management Vs Disaster risk management spiral



What is the
meaning of
disaster for
human
being?



Punishments by the god(s)



Loss



Poverty



Suffering



and ????

Question

Is a disaster a set of physical impacts or a set of socially constructed perceptions?

If in a situation there is no destruction, but considerable social disruption, has occurred, is this situation a disaster or not?



"Studying Disaster: A Review of the Main Conceptual Tools,"

- **Disasters can be classified into three main paradigms, including:**
 1. The first is disaster as **a duplication of war** (catastrophe can be imputed to an external agent; human communities are entities that react globally against an aggression).
 2. The second is disaster as an expression of **social vulnerabilities** (disaster is the result of underlying community logic, of an inward and social process).
 3. The third is disaster as an entrance into a **state of uncertainty** (disaster is tightly tied into the impossibility of defining real or supposed dangers, especially after the upsetting of the mental frameworks we use to know and understand reality).

Disaster as social vulnerability

- A community pushed together by an external danger.
- Disaster as a social result and a consequence of sociostructural risk.
- As the result of the upsetting of human relations.
- **Disaster is social panic and social disorder and the reasons to be found within society and not from outward.**

Changing ideas about disasters

Three important phases:

Acts of God

Acts of Nature

Now Acts of Men &
Women



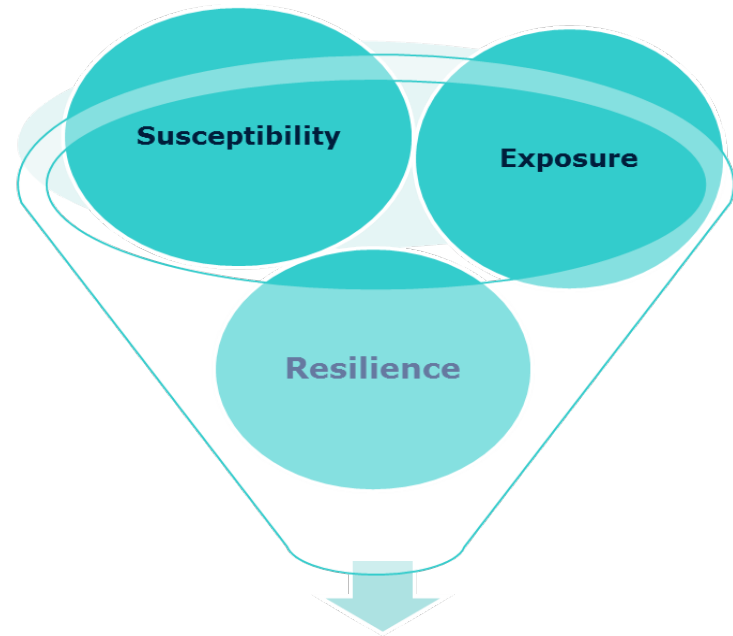
What is the meaning of vulnerability?

- Vulnerability is the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. (UNISDR, 2009).
- **Characteristics of Event**
- **Exposure(People, Property, Service, Environment, Livelihood)**
- **Susceptibility**
- **Resilience**

$$\text{Vulnerability} = (E \times S) / R$$

- Factors affecting vulnerability:

- Exposure
- Susceptibility
- Resilience



Vulnerability

Vulnerability

Different approaches

- Despite differences in the definition of the term “vulnerability,” there is two main point of views.
 1. The first group, treat vulnerability as **a pre-existing condition** that focuses on **potential exposure to hazards**(Cutter, 1996),
 2. Second groups suggest that not all individuals and groups, exposed to a hazard are equally vulnerable, as each person has their own unique characteristics. (Rygel, O’sullivan, & Yarnal, 2006)
- Studies that follow the second approach stress that vulnerability is multidimensional, and **socially constructed** (Cutter, 1996).

Social Vulnerability

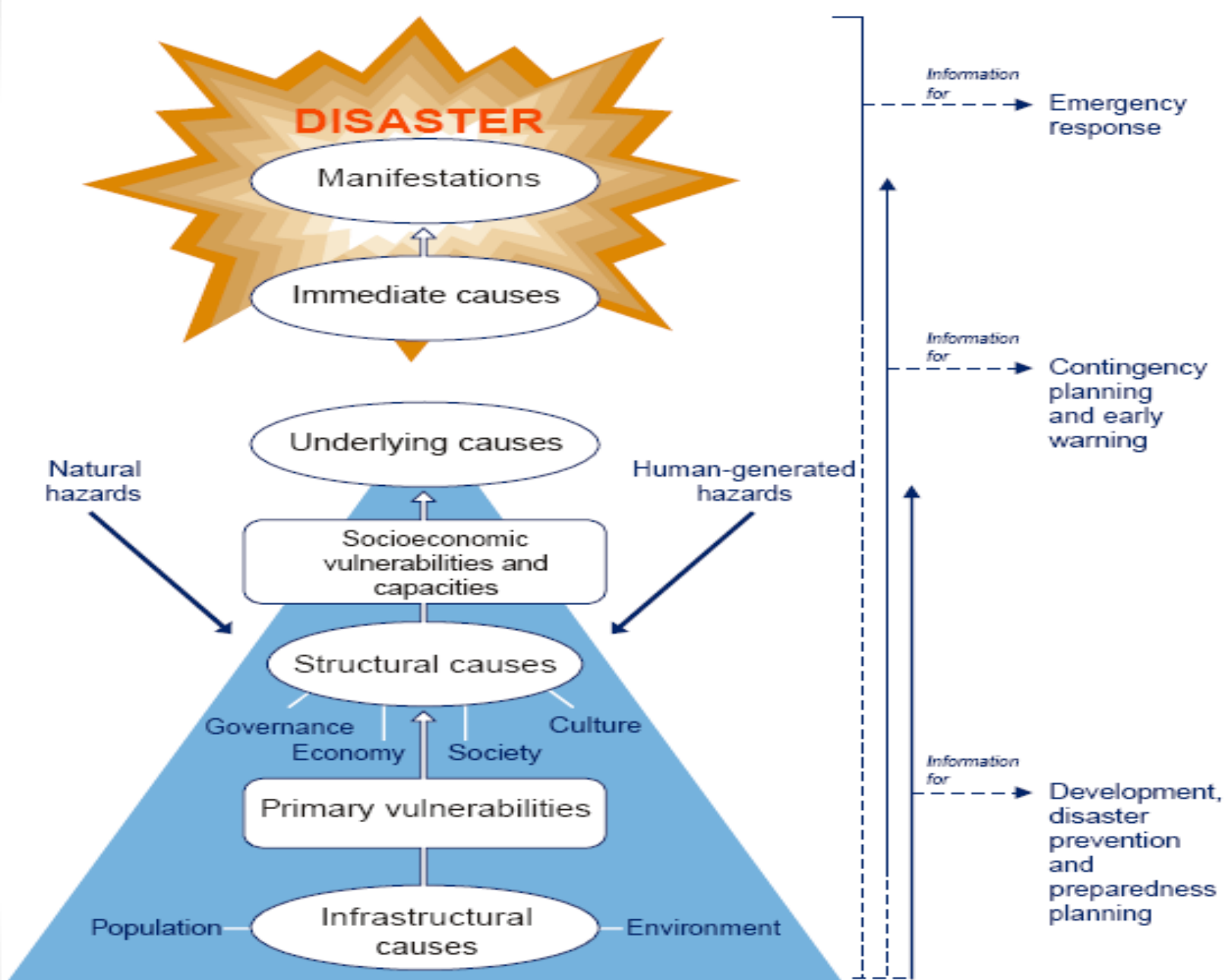
- **Social vulnerability is a product of social inequalities.**
- It is defined as the susceptibility of social groups to the impacts of hazards, as well as their resiliency, and the ability to recover from them. (Singh, Eghdami, & Singh, 2014)
- For most of the twentieth century, disaster management focused on the physical world, emphasizing infrastructure and technology.
- The concept of social vulnerability within the disaster management context was introduced in the 1970s when researchers recognized that vulnerability also involves socioeconomic factors that affect community resilience (Juntunen 2005).



The vulnerability factors

- ❑ **Poverty**
- ❑ **Extremes of age**
- ❑ **Gender**
- ❑ **Disability**
- ❑ **Lack of information, education and communication**
- ❑ **Lack of experience and process**
- ❑ **Inadequate healthcare**
- ❑ **Geographical location / isolation**
- ❑ **Inadequate social and organizational integration / coordination**
- ❑ **Inadequate preparedness and mitigation**
- ❑ **Ethnicity**
- ❑ **Inappropriate developmental policies**
- ❑ **Food insecurity**
- ❑ **Societal stratification**
- ❑ **Poor water and food quality**
- ❑ **Limited state & local resources**
- ❑ **Political perceptions**
- ❑ **Negative social interactions: administrative graft / corruption, competition**
- ❑ **Lack of social order**
- ❑ **High burden of illness and/or injuries**

From: Clack Z, Keim M, MacIntyre A, Yeskey K. Emergency Health and Risk Management in Sub-Saharan Africa. Prehospital and Disaster Medicine 2002; 17(2):59-66.



Final words

- There has been an increasing realisation that it is important **to know and reduce human vulnerability** to disasters in its many different forms.
- **Both the causes and the phenomenon of disasters are defined by social processes and structures.**
- **The social context should taken into account to understand “natural” disasters** (Hewitt 1983).
- Although different groups of a society may share a similar exposure to a natural hazard, the hazard has varying consequences for these groups, since they have diverging capacities and abilities to handle the impact of a hazard.

Final word

بنی آدم اعضای یکدیگرند
که در آفرینش ز یک گوهرند
چو عضوی به درد آورد روزگار
دگر عضوها را نماند قرار
تو کز محنت دیگران بی غمی
نشاید که نامت نهند آدمی

Human beings are members of a whole,
In creation of one essence and soul.
If one member is afflicted with pain,
Other members uneasy will remain.
If you've no sympathy for human pain,
The name of human you cannot retain!
(Saadi, translated by Dr. Aryanpoor)

Panel question

- How vulnerability of different groups of community can be reduced?



**Hope to have a safe and
developed world Free of
disaster risk**



2019 Iran floods

- From mid-March to April 2019, widespread flash flooding affected large parts of Iran, most severely in Golestan, Fars, Khuzestan, Lorestan, and other provinces.
- Iran has been hit by three major waves of rain and flooding over the course of two weeks which led to flooding in at least 26 of Iran's 31 provinces and at least 84 people died and 3285 injured nationwide as of 6 April.
- The first wave of rain began on 17 March, leading to flooding in two northern provinces, Golestan and Mazandaran with the former province receiving as much as 70 percent of its average annual rainfall in single day.
- Several large dams have been overflowed, particularly in Khuzestan and Golestan, therefore many villages and several cities have been evacuated.

2019 Iran floods

- About 1,900 cities and villages across country have been damaged by severe floods as well as hundreds of millions of dollars of damage to water and agriculture infrastructure.
- 78 roads were blocked and the reliability of 84 bridges was questioned.
More than 40 million people have been affected.
- The impact of the floods was heightened because of the Nowruz holiday; many Iranians were travelling, and many deaths occurred due to flash flooding on roads and highways.
- Around 12,000 km of roads were damaged by the flooding, about 36% of Iran's national road network.
- The floods caused at least \$4 billion (2019 USD) in damages, mostly due to losses in the agricultural industry.
- Further, according to Red Crescent, two million people are in need of humanitarian aid due to the devastating floods.

Social Vulnerability

- **Social vulnerability has its root in gender, class, race, culture, nationality, age, and variety of factors can influence it such as;**
- Lack of access to resources such as information, knowledge, and technology,
- Limited access to political power, Social capital, social networks and connections,
- Beliefs and customs,
- Building stock,
- Type and density of infrastructure
- Structures and lifelines
- Age, frail and physically limited individuals. (Rygel et al., 2006)