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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

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.

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.

Source: EMDAT: OFDA/CRED International Disaster Database, Université catholique de Louvain – Brussels – Belgium
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,..
Recent Disasters in Iran

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Flood (Golestan, Mazandaran, Fars and ...)</td>
<td>2019</td>
</tr>
<tr>
<td>Earthquake (Kermanshah)</td>
<td>Nov 2018</td>
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<tr>
<td>Earthquake (Kerman)</td>
<td>Nov 2018</td>
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<td>Flood (Gillan)</td>
<td>June 2018</td>
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<tr>
<td>Earthquake (Kerman)</td>
<td>Nov 2017</td>
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<tr>
<td>Earthquake (Kermanshah)</td>
<td>Nov 2017</td>
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<tr>
<td>Flood (Azerbaijan)</td>
<td>April 2017</td>
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<td>Earthquake (Fariman)</td>
<td>April 2017</td>
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<tr>
<td>Flash Floods</td>
<td>July 2015</td>
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<tr>
<td>Earthquake</td>
<td>Nov 2013</td>
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<tr>
<td>Iran/Pakistan: Earthquake</td>
<td>Apr 2013</td>
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<tr>
<td>Earthquake</td>
<td>Apr 2013</td>
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<tr>
<td>Earthquake</td>
<td>Aug 2012</td>
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<tr>
<td>Earthquakes</td>
<td>Dec 2010</td>
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<tr>
<td>Earthquake</td>
<td>Jul 2010</td>
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<tr>
<td>Earthquakes</td>
<td>Jan 2010</td>
</tr>
<tr>
<td>Influenza A (H1N1) Pandemic</td>
<td>Apr 2009</td>
</tr>
<tr>
<td>Earthquake</td>
<td>Sep 2008</td>
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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?
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
Vulnerability = \frac{(E \times S)}{R}

Factors affecting vulnerability:

- Exposure
- Susceptibility
- Resilience
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

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

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 the 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.
ISLAMIC REPUBLIC OF IRAN
Situation Overview: Floods
As of 18 April 2019

Key Figures

- 12 million affected people
- 2 million people in need
- 366,000 people displaced
- 78 deaths
- 1,137 injured
- 4.7 billion USD losses

Houses Destroyed/Damaged by Province

- 65k houses destroyed
- 114k houses damaged

Map showing the distribution of destroyed and damaged houses across provinces in Iran, with indicators for the number of destroyed houses per province.
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)