



Vulnerability: Dealing with flood events

Tasks:

- 1) Describe the different consequences of flood for Amsterdam and Vietnam. Write down the potential consequences .

Consequences of flood

Netherlands	Vietnam



2) Explain the word „Vulnerability” by this figure and the information text.

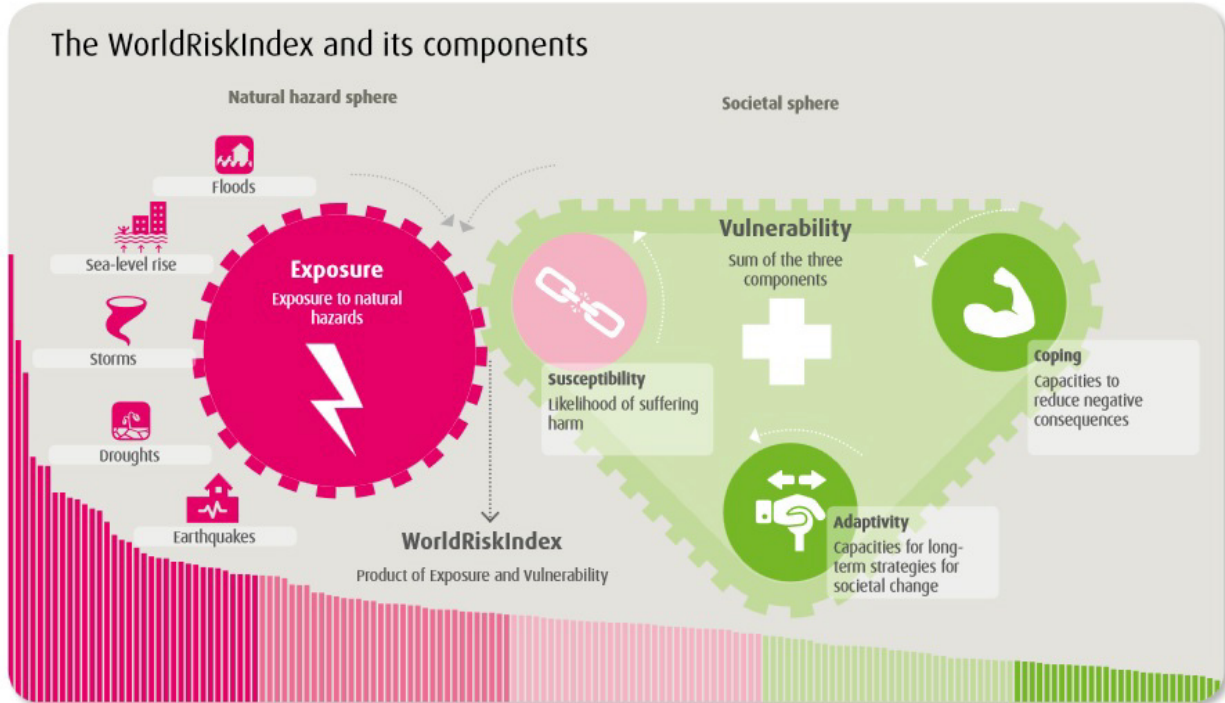


Figure 3: The WorldRiskIndex and its components

Figure 1: The WorldRiskIndex and its components (WorldRiskReport 2018; S.13. Online at: http://weltrisikobericht.de/wp-content/uploads/2019/03/190318_WRR_2018_EN_RZonline_1.pdf).

The risk of a natural disaster consists of exposure (hazard) and vulnerability. Exposure describes the average proportion of a population exposed to natural hazards (earthquakes, floods, cyclones, droughts and sea-level rise). Vulnerability indicates social circumstances (liability, opportunities of coping, opportunities of adaptation).



3) Compare the vulnerability of the Netherlands and Vietnam by using the structural data.

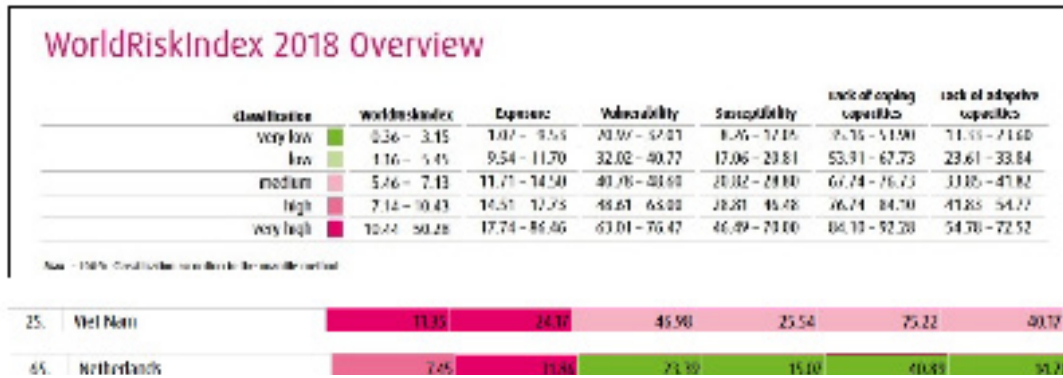


Figure 2: WorldRiskIndex - Vietnam & Netherlands in comparison (own assembly according to: WorldRiskReport 2018 (online at: http://weltrisikobericht.de/wp-content/uploads/2019/03/190318_WRR_2018_EN_RZonline_1.pdf).

Explanations:

1. The global risk index is calculated according to the following scheme:

$$\text{WorldRiskIndex} = \text{exposure} \times \text{vulnerability}$$
 2. exposure is calculated in relation to natural risks and the number of inhabitants of a country
 3. vulnerability is calculated according to the following scheme:

$$\text{Vulnerability} = 1/3 \times (\text{susceptibility} + (1 - \text{coping}) + (1 - \text{adaptation}))$$
 4. The indicators are further subdivided:
 - a. Vulnerability (public infrastructure, nutrition, poverty & dependency, economic power & income distribution)
 - b. Coping (government & authorities, medical care, material security)
 - c. Adaptation (education & research, equal participation, status of the environment & protection of the ecological system, investment)
- The classification bases on the quantile method, so that 20 percent of the countries were represented in each of the five classes.

Figure 3: explanations of the world risk index

