

Teaching material

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	



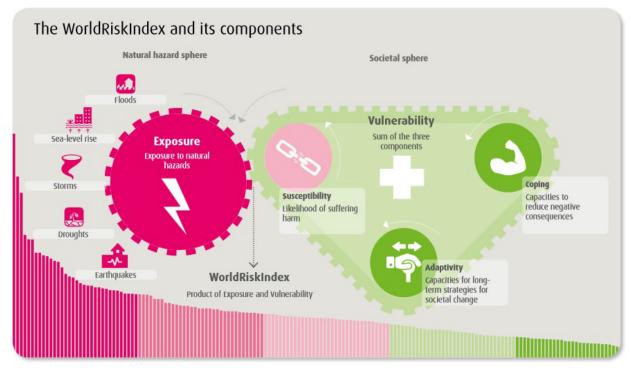


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2) Explain the word "Vulnerability" by this figure and the information text.

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/up-loads/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).





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036- 3.15 1.16- 5.45 5.46- 7.13	1.07 - 9.53 9.54 - 11.70 11.71 - 14.50	70.97 - 52.01 32.02 - 40.77	8.26-17.16 17.06-23.81	2.15-51.90 53.91-67.73	11.55-7160 23.61-33.84
		32.02 - 40.77	17.06 - 23.81	53 91 - 67 73	23 61 - 23 84
5.46 - 7.13	11 /1 - 14 50			where i we done	42.01 22.04
	11.1.1.1.14.00	40./6-40.60	20.02 - 28.00	67.74 - 76.73	3335-4182
7.14 - 10.43	14.51 17.73	48.61 63.00	J2.81 45.42	76.74 84.10	41.85 54.77
10.44 50.28	17.74 - 86.46	63.01 - 76.47	46,49 - 70.00	84,10 - 92,28	54.78 - 72.52
					2 40
	10.44 50.28				

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: WorldRiskIndex = exposure x 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:

Vulnerability = $1/3 \times (susceptibility + (1 - coping) + (1 - adaptation))$

- 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





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