



- Vulnerability - Do we mean the same thing?

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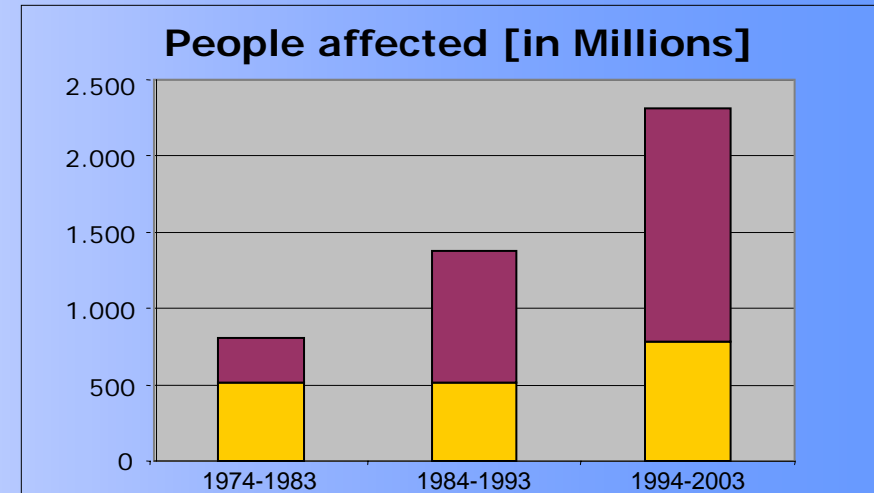
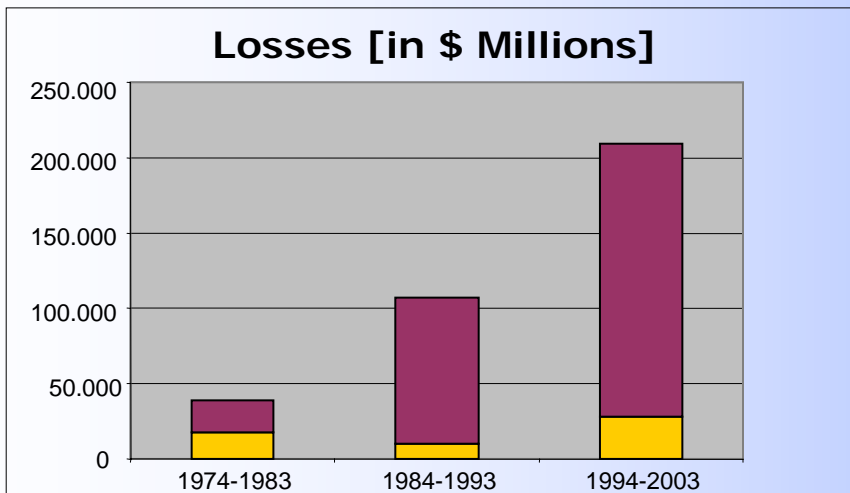
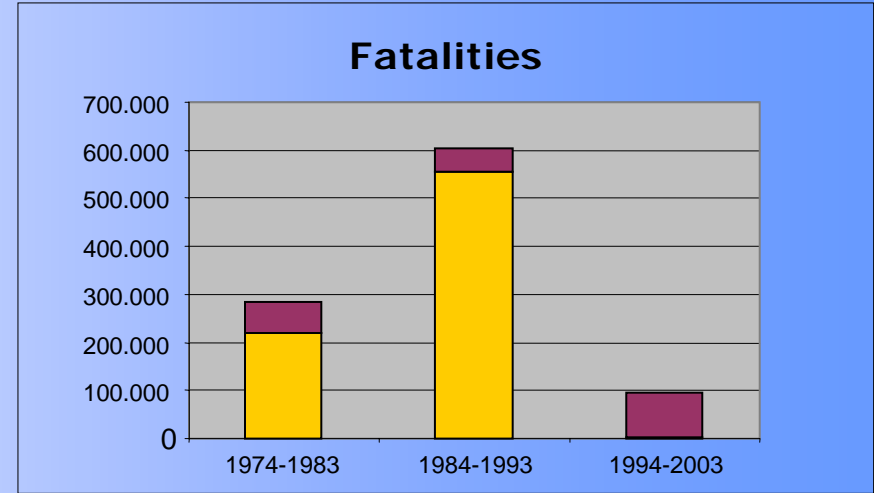
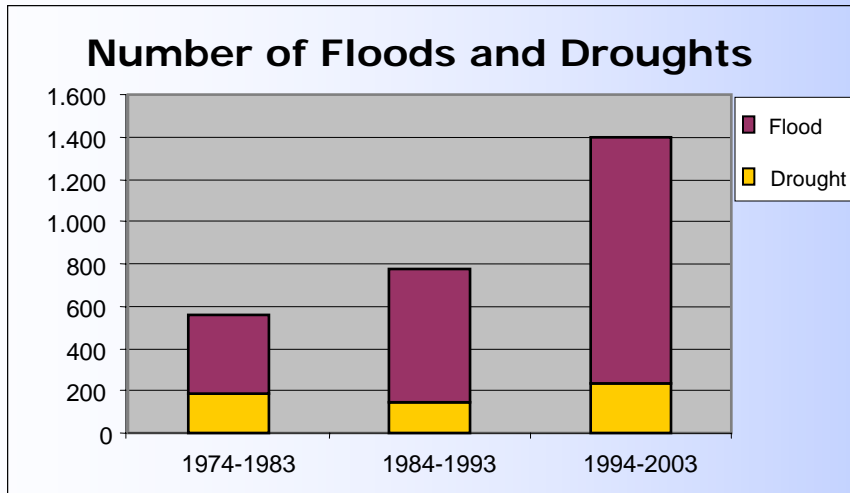


Overview

- Disaster Statistics & Trends
- Paradigm Shift: Vulnerability becomes a focus of Disaster Reduction and Human Security
- Vulnerability - do we mean the same thing?
- Definition of Terms
- Concepts of Vulnerability
- Conclusions



Facing the Music



Source: EM-DAT- The OFDA/CRED International Disaster Database



Paradigm Shift

„Natural hazards are a part of life. But hazards only become disasters when people’s lives and livelihoods are swept away. The vulnerability of communities is growing due to human activities that lead to increased poverty, greater urban density, environmental degradation and climate change.“

Kofi Annan, October 8 2003, International Day for Disaster Reduction



Paradigm Shift

UNU-EHS Vision:

“Advancing human security through knowledge-based approaches to reducing vulnerability and environmental risks“

Ensuring human security requires a paradigm shift in the concept of disaster prevention and preparedness. Instead of starting with a focus on natural hazards and their quantification, the assessment and ranking of the vulnerability of affected groups should serve as the starting point in defining priorities and means of remedial interventions.



Vulnerability – do we mean the same thing?

Engineering:

The vulnerability (for event i and location j) increases with the number of people affected by the impact of a natural hazard, given by the formula:

$$v_{ij} = 10^{-23} \cdot n^2 \quad , \text{ for } n \geq 10 \text{ casualties.}$$

(Vrijling et al. 1995)



Vulnerability – do we mean the same thing?

Social Sciences:

“Vulnerability (in contrast to poverty which is a measure of a current status) should involve a predictive quality: it is supposedly a way of conceptualizing what may happen to an identifiable population under conditions of particular risk and hazards. It is the complex set of characteristics that include a person’s:

- initial well-being (health, morale, etc.)
- self-protection (asset pattern, income, qualifications, etc.)
- social protection (hazard preparedness by society, building codes, shelters, etc.)
- social and political networks and institutions (social capital, institutional, environmental etc.).” (Cannon et al., 2004)



Vulnerability – do we mean the same thing?

United Nations:

“... a Human condition or process resulting from physical, social, economic, and environmental factors which determine the likelihood and scale of damage from the impact of a given hazard“ (UNDP, 2004)



Comparative Glossary

- UNU EHS is putting together a comparative glossary with core terms of Disaster Reduction
- Purpose:
 - to inform about the range of definitions
 - to work towards a conceptual frame that is concise enough to clearly differentiate the core terms from each other but wide enough to be applicable across multiple disciplines, sectors, and contexts


**Comparative Glossary
for Core Terms of Disaster Reduction**

Hazard ◇ Vulnerability ◇ Exposure ◇ Coping Capacity ◇ Resilience ◇ Risk

◇ Coping Capacity ◇ Resilience ◇ Risk Hazard ◇ Vulnerability ◇

In disaster reduction the collaboration among multiple disciplines and sectors is of the essence. But it is hampered by the lack of common terminology and concepts.

Knowing how different definitions of the same term can be is crucial for a collaboration free of misunderstanding and can be a step on the way towards a harmonization of definitions and concepts.

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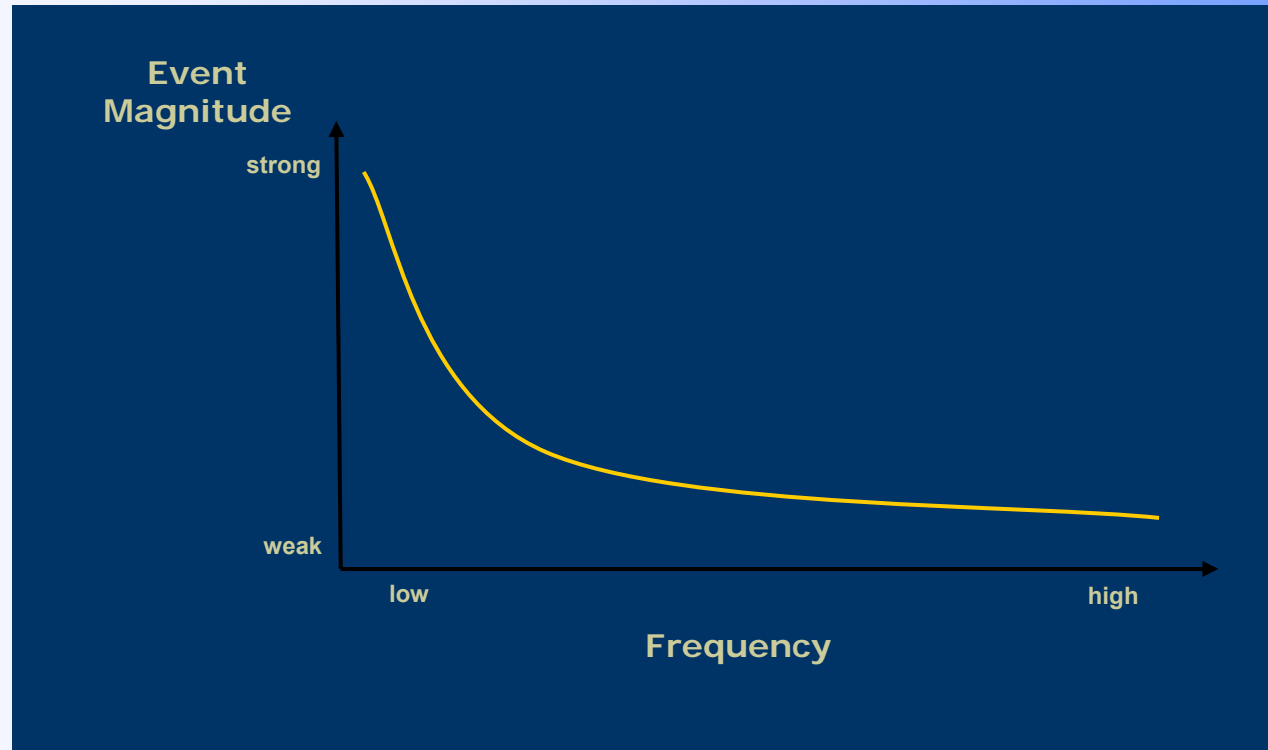
Core Characteristics of Vulnerability

- **multi-dimensional**
e.g. physical (built environment), social, economic, environmental, institutional, and human
- **dynamic**
i.e. it changes over time
- **scale-dependent**
i.e. it changes with spatial scale and can range from household over community to country resolution
- **site-specific**

Vulnerability – a Component of Risk

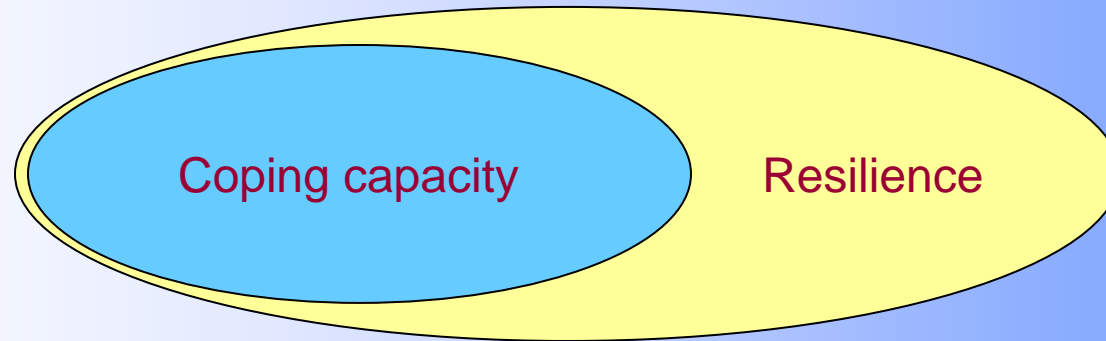


Hazard





Coping Capacity and Resilience



Coping capacity:

The ability to cope with threats includes the ability to absorb impacts by guarding against or adapting to them. It also includes provisions made in advance to pay for potential damages, for instance by mobilizing insurance repayments, savings or contingency reserves.

Resilience:

The capacity to 1) prevent or mitigate losses and then if damage occurs 2) to maintain normal living conditions and to 3) manage recovery from the impact. Buckle et al. (2000).



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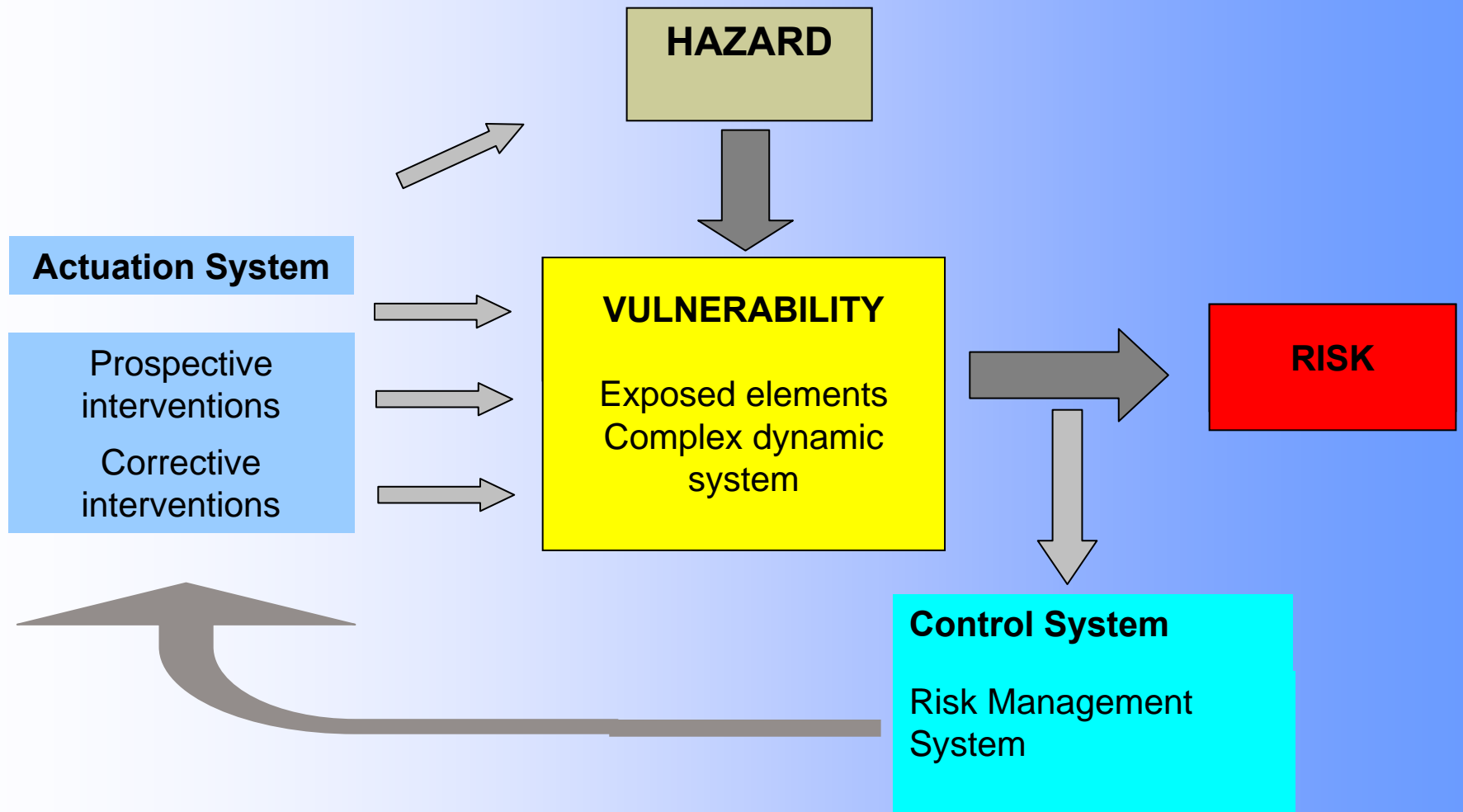


Exposure

Number and priority of elements at risk that are going to be affected by the impact of a given event. Elements at risk can be people, infrastructure, environment, processes or any other aspect of livelihood.



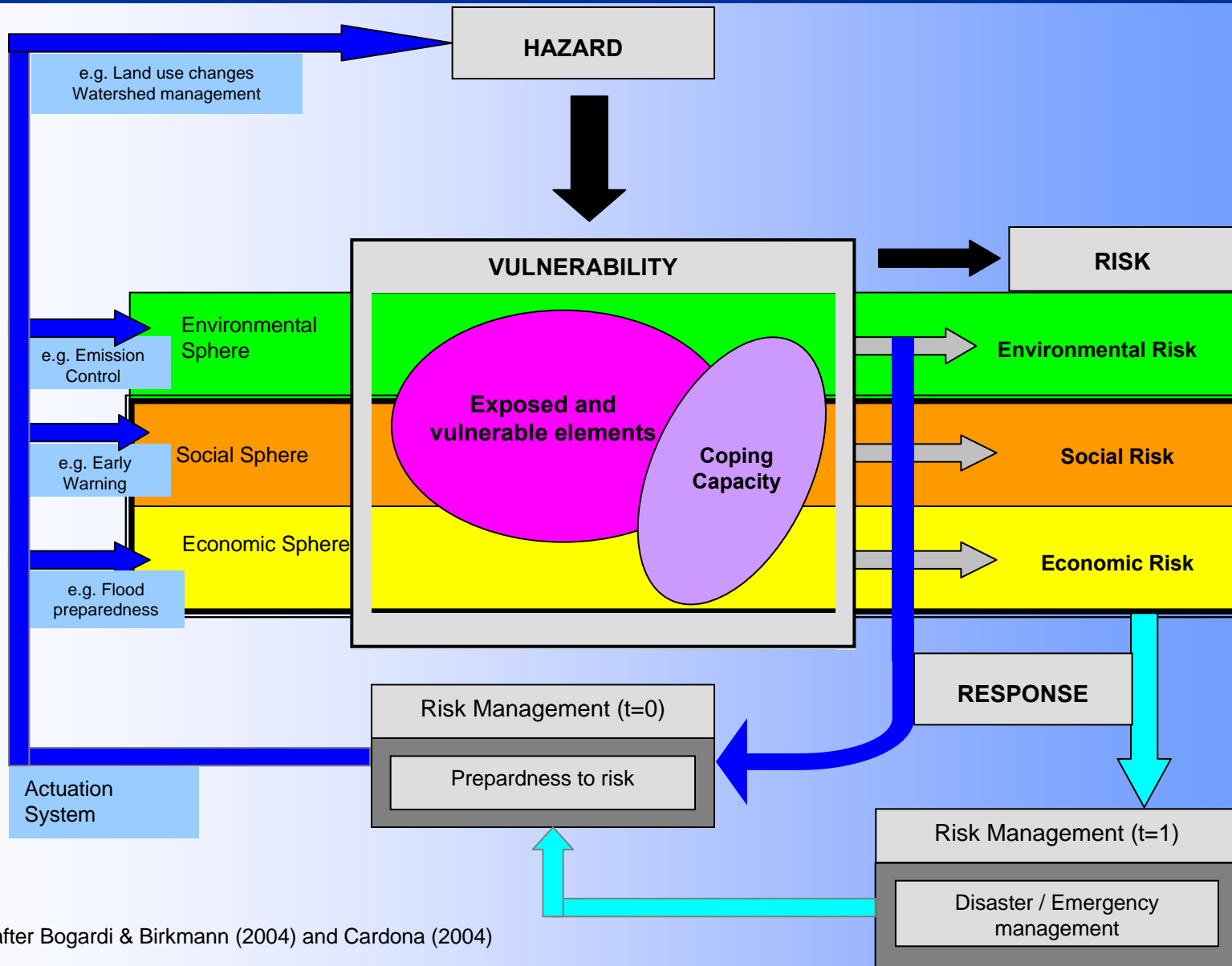
Vulnerability Concepts



Source: Cardona 2004



Vulnerability Concepts



Source: after Bogardi & Birkmann (2004) and Cardona (2004)

Water and Disasters – London, Ontario, 13.-14. December 2004



Conclusions

- The understanding of disasters is changing - vulnerability is becoming a priority
- Its complexity and dynamic is being recognized (→ multidisciplinary, inter-sectoral approaches)
- We need to understand it better: how its components are linked, and how it is developing over time
- That requires clear language, concepts, a baseline, quantification and monitoring of the development (→ indicators for vulnerability)
- That is the starting point for the identification of successful strategies, methodologies to reduce vulnerability