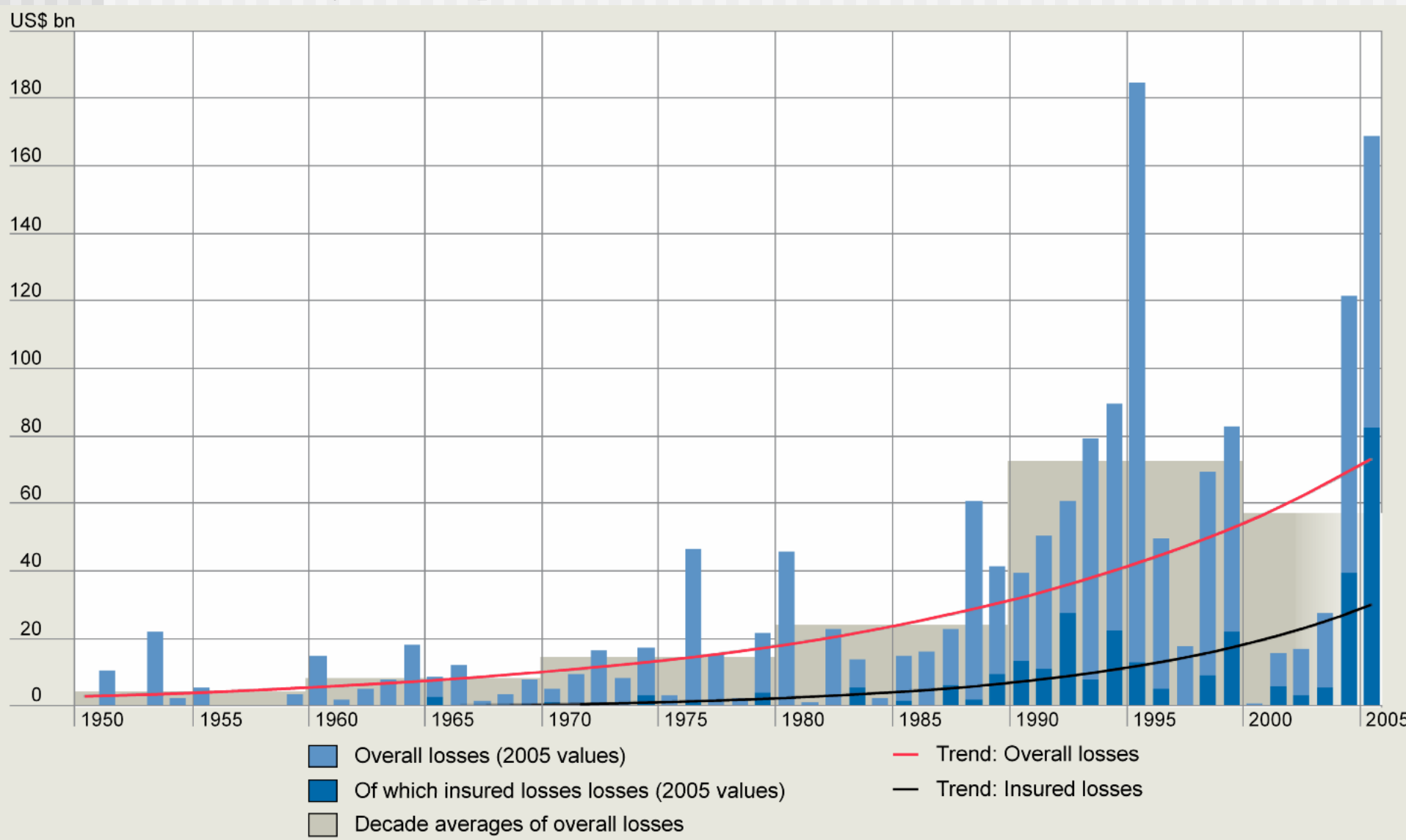

Disasters and Decision Processes

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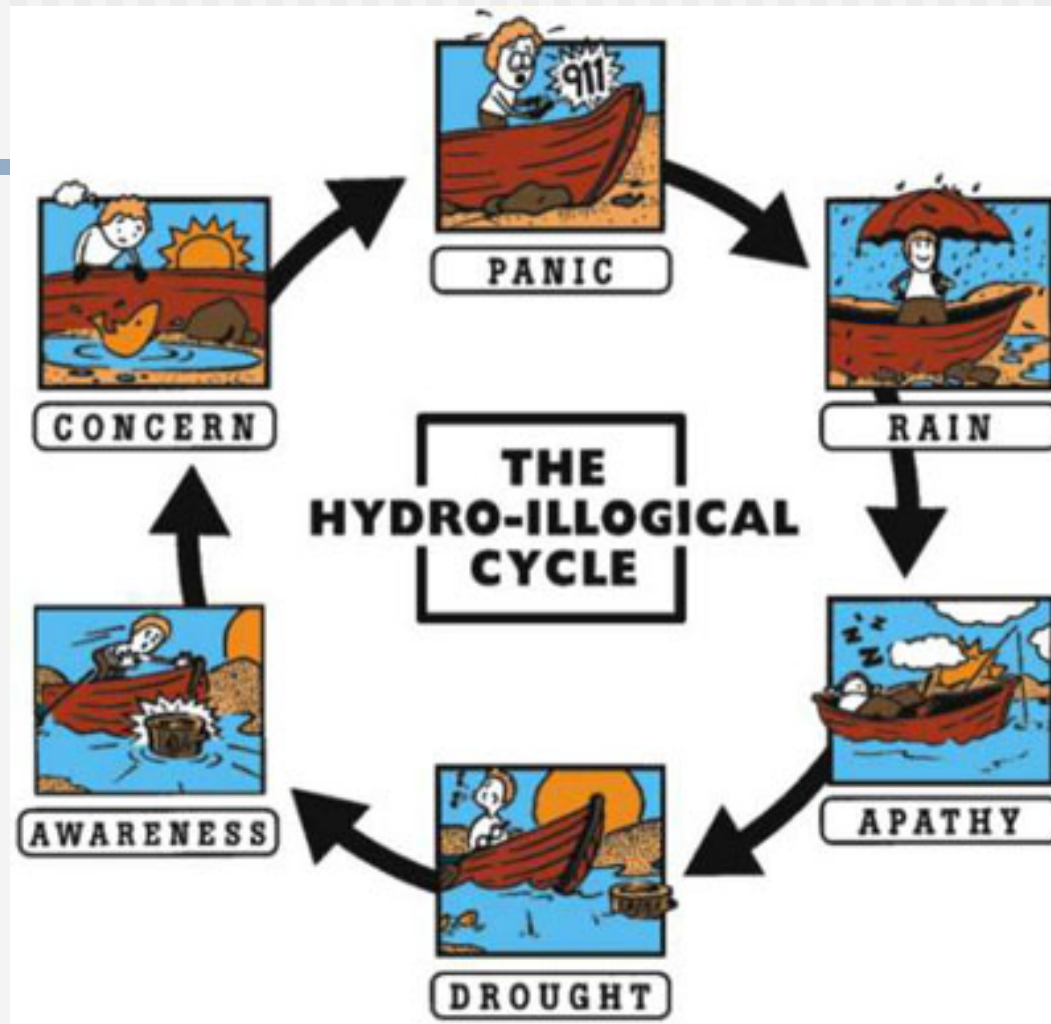
Overall losses and insured losses – absolute values and long-term trends (1950-2005; adjusted to present values)



Ironies and paradoxes...

- Funding for prevention and mitigation is much easier to receive after a disaster than before
- Reconstruction → *status quo ante*
- “Disaster-damage-repair-cycle” (Tobin and Montz 1997)
- “Hydro-illogical cycle” (National Drought Mitigation Center 1998)

Ironies and paradoxes ...



Source: National Drought Mitigation Center <http://www.drought.unl.edu/plan/cycle.htm>

Ironies and paradoxes...

Better structural protection (dykes) ...



...more investments in flood-plain ...



**...greater damage than would have occurred
without dyke**

(Gilbert White, 1937)

Basic categories seen through social science glasses:

- ‘*Natural Disasters*’?

Basic categories seen through social science glasses:

“The time is ripe for some form of precautionary planning which considers vulnerability of the population as the real cause of disaster – a vulnerability that is induced by socio-economic conditions that can be modified by man, and is not just an act of God. Precautionary planning must commence with the removal of concepts of naturalness from natural disasters.”

(O'Keefe et al. in Nature, April 15, 1976: 567)

Basic categories seen through social science glasses:

- ‘*Natural Disasters*’?
- **Vulnerability**

“By vulnerability we mean *the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard (an extreme natural event or process).*”

(Wisner et al., 2004, p. 11; italics in original)

Basic categories seen through social science glasses:

- ‘*Natural Disasters*’?
- Vulnerability
- **Natural/Geohazards**

	TRADITIONAL FRAMEWORK	CONTEXTUAL FRAMEWORK
<i>View of „Eventness“</i>	Absolute place in time and space	Defined by context
<i>View of „Extremeness“</i>	Absolute magnitudes	Defined by context
<i>View of “Hazards”</i>	Isolable process in the environment (outside society)	Defined by context; Integral element of environmental and human systems
<i>View of “Disasters”</i>	Discrete events; isolable phenomena	Interconnected events; contextual and relational phenomena
<i>View of “Vulnerability”</i>	A system condition	A dynamic interface

Decisions and decision-makers

- How shall we allocate limited resources properly between different hazards?

Decisions and decision-makers

- Value of information to decision-makers?
 - What means ‚relevant‘ information?
 - How should information be formatted/presented in order to become useful?
 - What can we do to make sure information end up in ‚good‘ decisions?

“More information provides an ever-larger pool out of which interested parties can fish differing positions on the history of what has led to current circumstances, on what is now happening, on what needs to be done, and on what the consequences will be. And more information often stimulates the creation of more options, resulting in the creation of still more information.”

(Michael 1995: 473)

	TRADITIONAL FRAMEWORK	CONTEXTUAL FRAMEWORK
<i>Process Model</i>	More information means better decisions	The value of information is highly contextual. Understanding the context helps determine what information is needed
<i>Sources of Knowledge</i>	Scientific research	Scientific research, experience, intuition, heuristics
<i>Integration of Knowledge</i>	Occurs after knowledge creation; prior to decision making	Integral with knowledge creation and decision making
<i>Role of Decisions</i>	Translation of knowledge into action. Decisions as external to science agenda.	Integrative feedback between knowledge and action

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Rock beside a house in Bíldudalur, NW-Fjords, Island (Rainer Bell, 2000)

Natural Disasters?

- **“The time is ripe for some form of precautionary planning which considers vulnerability of the population as the real cause of disaster – a vulnerability that is induced by socio-economic conditions that can be modified by man, and is not just an act of God. Precautionary planning must commence with the removal of concepts of naturalness from natural disasters.”**
- ***(O'Keefe et al. 1976: 567)***

Ausblick

**„Wovor sollen wir uns fürchten,
und auf welche Weise sollen wir uns
davor schützen?“**

“The time is ripe for some form of precautionary planning which considers vulnerability of the population as the real cause of disaster – a vulnerability that is induced by socio-economic conditions that can be modified by man, and is not just an act of God. Precautionary planning must commence with the removal of concepts of naturalness from natural disasters.”

(O'Keefe et al. 1976: 567)

“Not every windstorm, earth-tremor, or rush of water is a catastrophe. A catastrophe is known by its works; that is, to say, by the occurrence of disaster. So long as the ship rides out the storm, so long as the city resists the earth-shocks, so long as the levees hold, there is no disaster. It is the collapse of the cultural protections that constitutes the disaster proper.”

(Carr 1932: 211; quoted from Dombrowsky 1998: 24)

“Since about fifteen years ago, however, a new perspective has emerged that views hazards as basic elements of environments and as constructed features of human systems rather than extreme and unpredictable events, as they were traditionally perceived. When hazards and disasters are viewed as integral parts of environmental and human systems, they become a formidable test of societal adaptation and sustainability. In effect, if a society cannot withstand without major damage and disruption a predictable feature of its environment, that society has not developed in a sustainable way.”

(Oliver-Smith 1996: 304)

“Natural earth processes or phenomena that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Geological hazard includes internal earth processes or tectonic origin, such as earthquakes, geological fault activity, tsunamis, volcanic activity and emissions as well as external processes such as mass movements: landslides, rockslides, rock falls or avalanches, surfaces collapses, expansive soils and debris or mud flows.

Geological hazards can be single, sequential or combined in their origin and effects.”

(ISDR n.d.)

“Material losses were often disproportionately concentrated according to age, gender, occupation, social position and, above all, lack of wealth and political voice. Even the effectiveness of risk assessment, warnings and emergency preparedness, depended most on whether or how they are (least) available to those most in need of them.”

(Hewitt 1998: 77)

“... relating something or someone who is vulnerable to something else as a source of potential harm because of some property of the subject or the object. Vulnerability implies something therefore about the relationship between the subject and the object as well as the relevant characteristics of either or both the object and the subject of the argument. The meaning of ‘vulnerability’ may thus be context specific rather than being a universal concept. What we mean by ‘vulnerability’ may consequently depend upon the nature of the decision that must be made and what the decision involves.”

(Green 2004: 323-324)

“Natural hazard issues are usually given low priority on local government agendas. Low priority, however, is not necessarily due to a lack of awareness. Research findings from surveys of risk perception indicate that the general citizenry and key decision-makers (planners, building officials, public works engineers, and so forth) are aware of hazards, but put a low priority on taking action, and have little concern for doing so.”

(Berke 1998: 79)