Emerging Climate Change - Related Global Disaster Risk Management Initiatives

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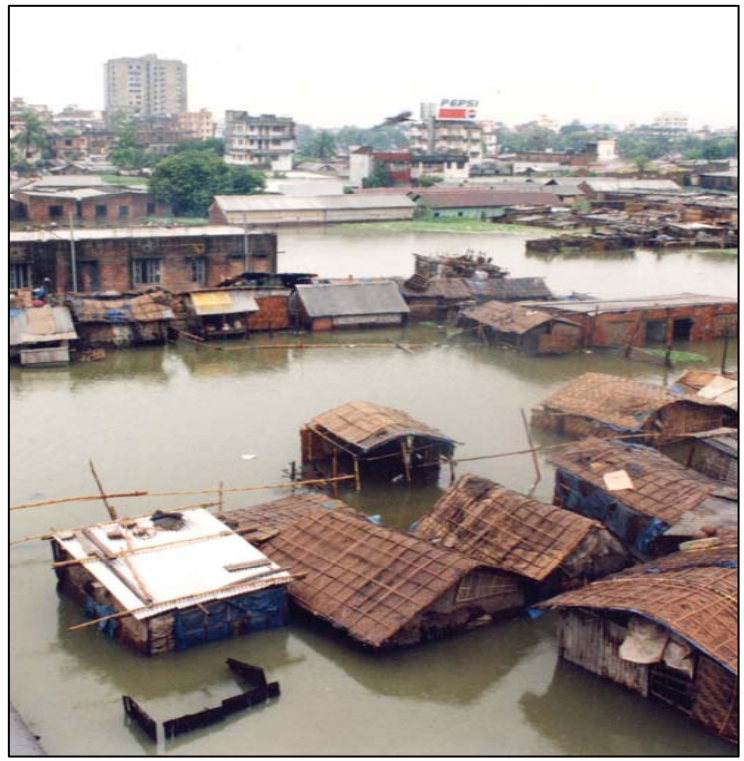
Disasters Roundtable workshop
"Disaster Risk Management in an Age of Climate Change"

Henrike Brecht
Program Specialist
GFDRR, World Bank

Disaster characteristics

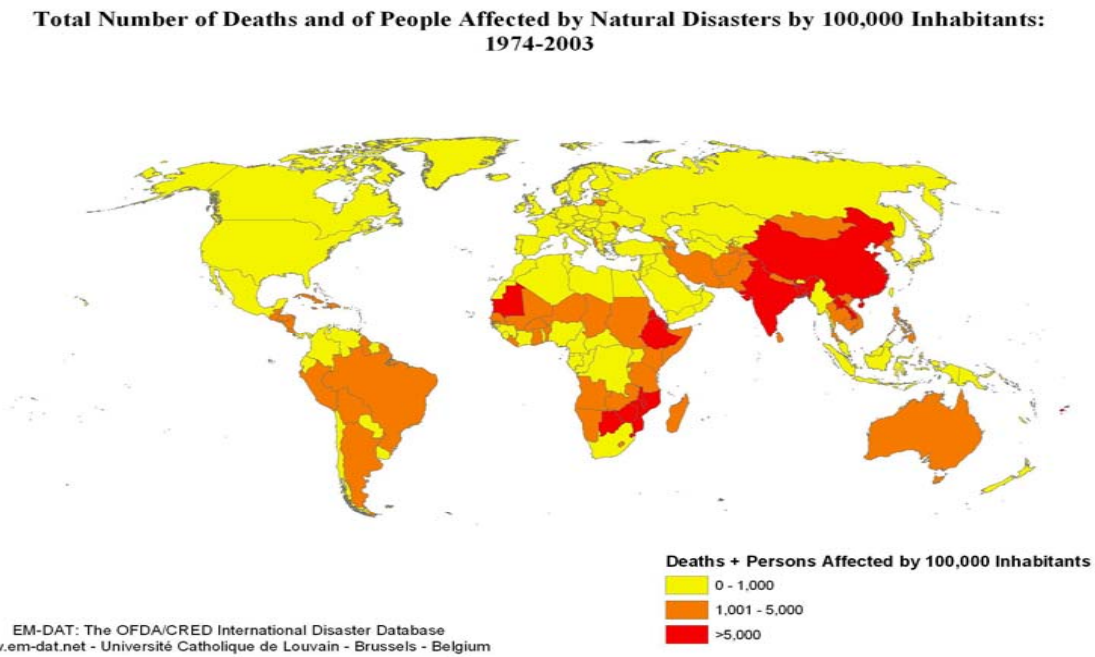
Patterns, trends, concepts



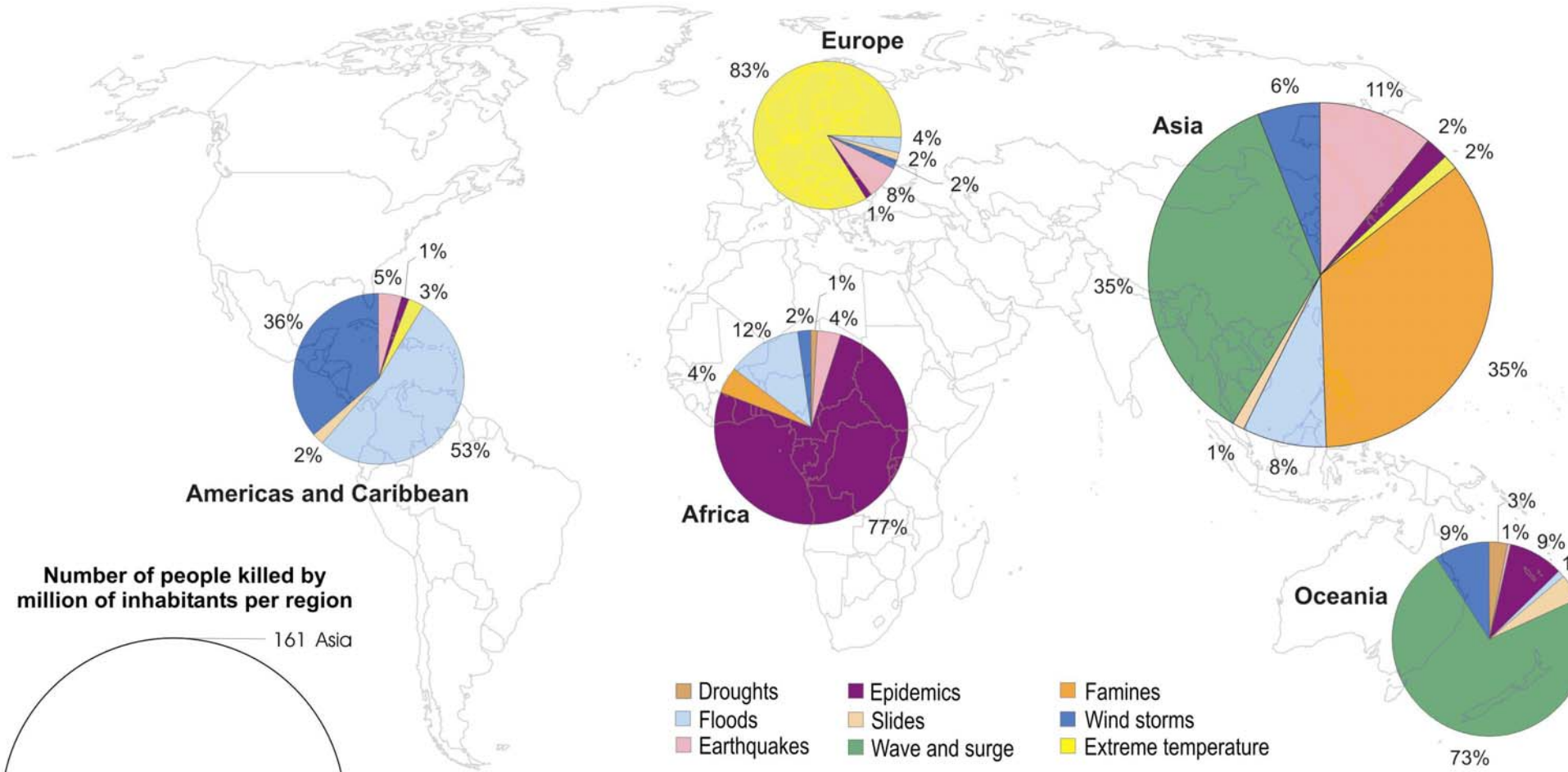
Basic patterns - 1995-2004

- 2,500 million people affected
- 890,000 dead
- US$ 570 billion losses,
- Most disasters are weather- or climate-related

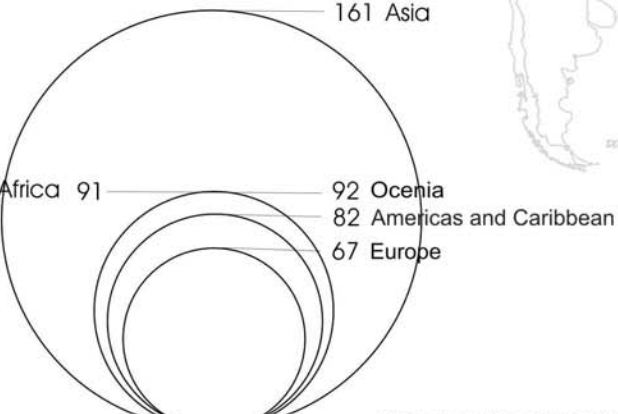
Poor people and
poor countries
most affected



Death rates per million by region and hazard type (1994-2006)



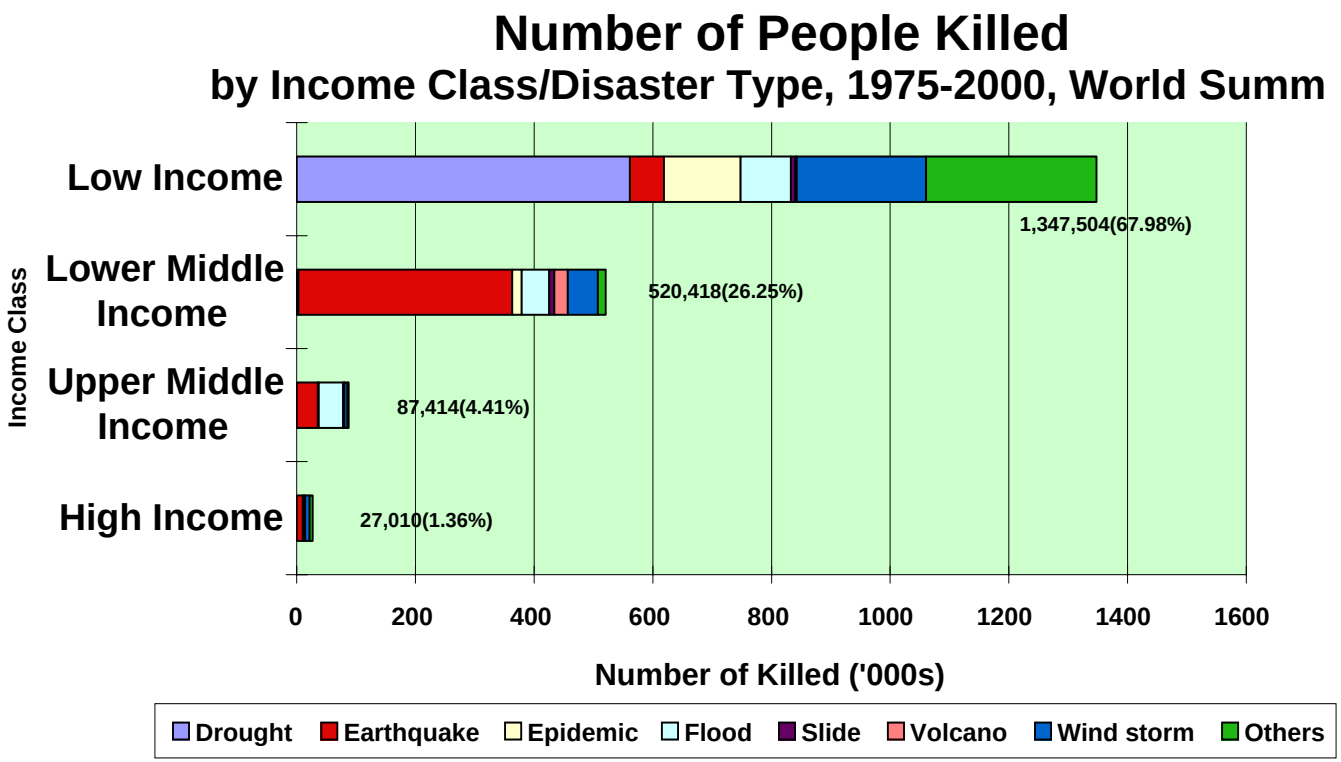
Number of people killed by million of inhabitants per region



UN/ISDR Information group

Source of data: EM-DAT : The OFDA/CRED International Disaster Databa
http: //www.em-dat.net, UCL - Brussels, Belgium

Disasters afflict poor people and countries most, and are a development issue

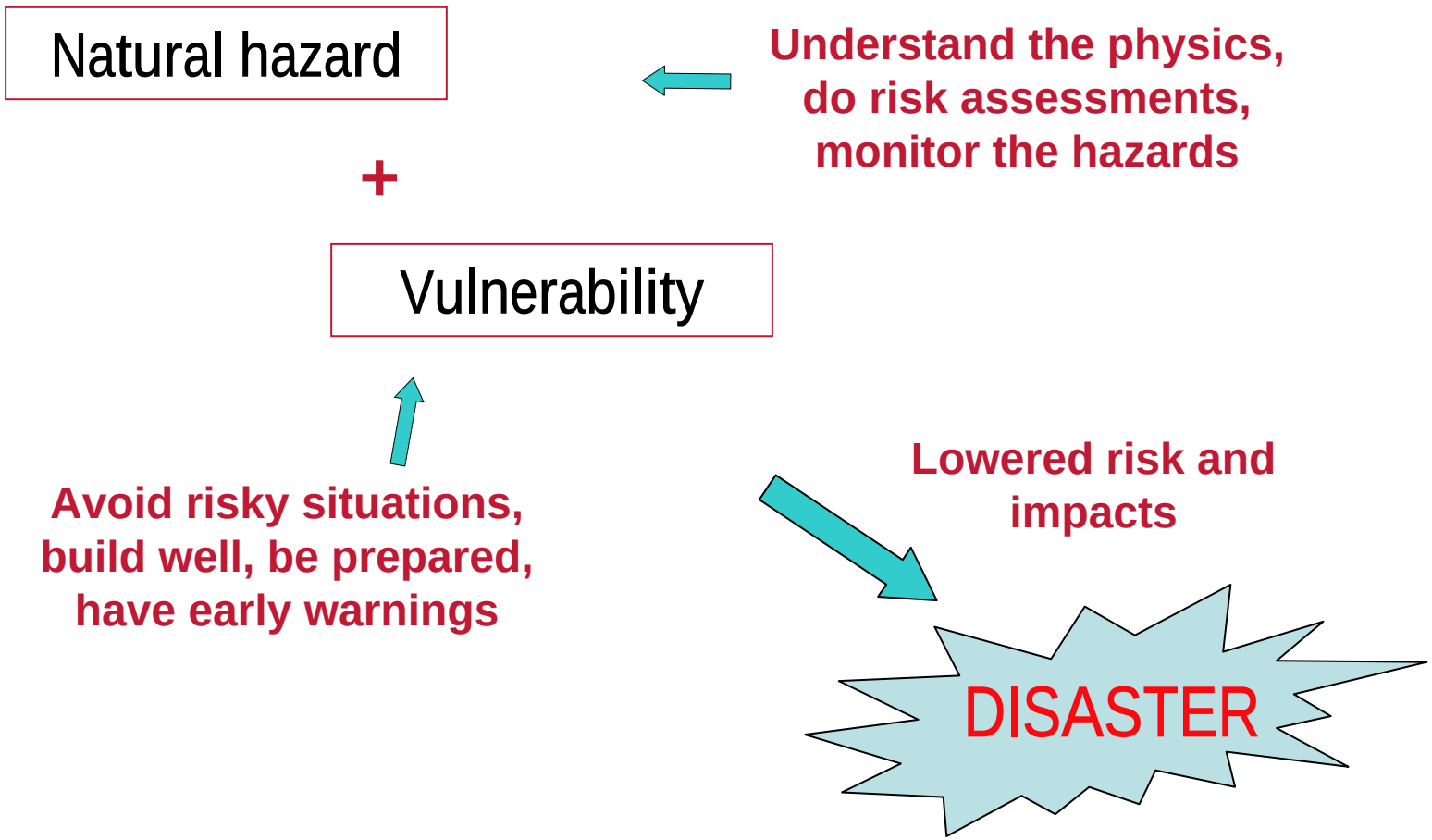


Conceptual basis (1) Pre-science view

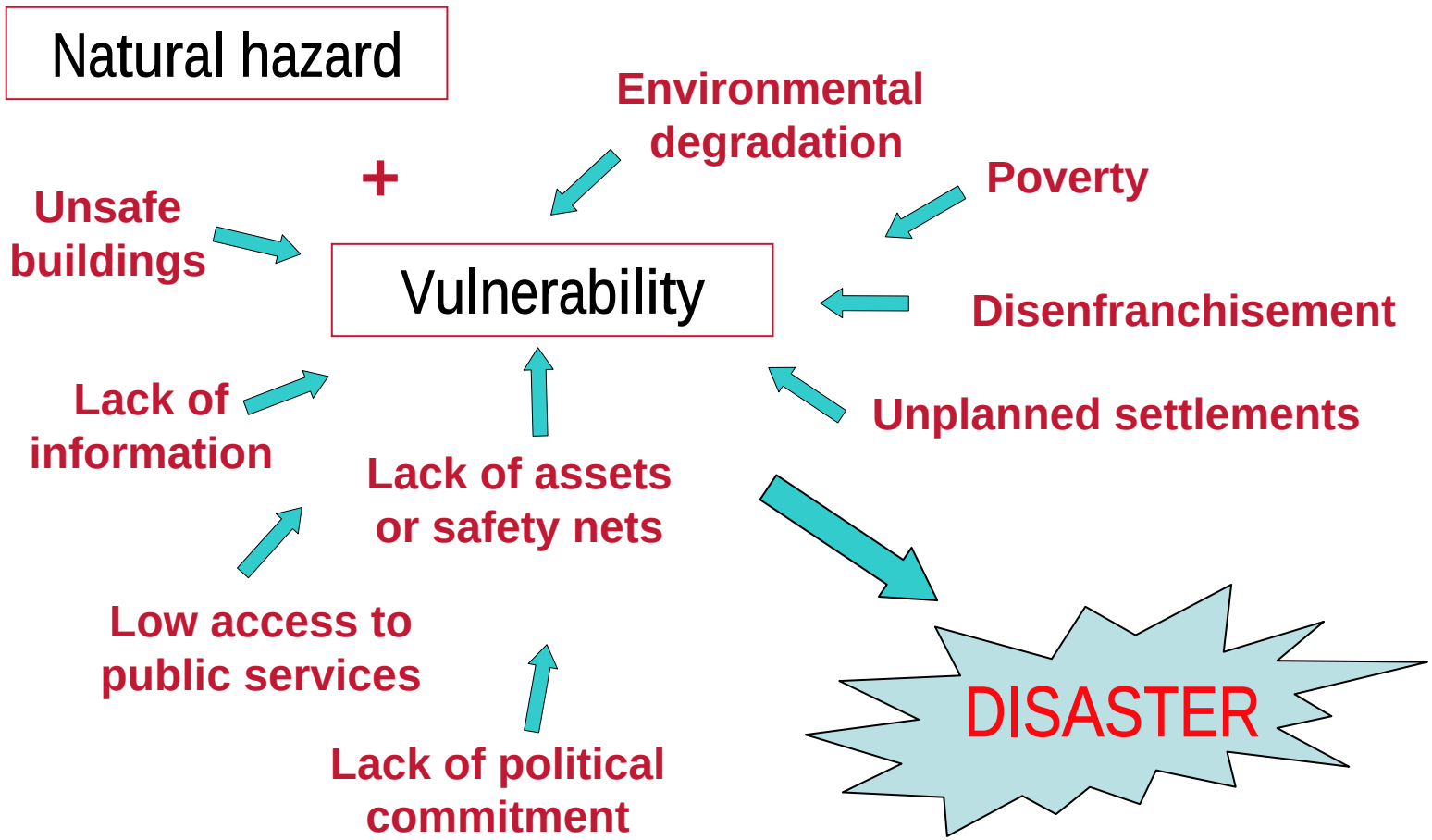
Natural hazard

Unpredictable, immense power, little one can do to prepare, fatalism, Act of God?

Conceptual basis (1) - Engineering view



Conceptual basis (3) - Social perspective



The reasons for rising disaster risks ?

…. Mostly increasing vulnerability

- More people and poor people in risky and unsustainable situations
- Unsafe development: floodplain settlement, coastal exploitation, mega-city growth, unsafe houses, wetland destruction, river channelling, deforestation, soil erosion and fertility decline
- Exacerbated by poverty and disease, conflict and population displacement

Growing disasters are a sign of unsustainable development

Dealing with disaster vulnerability

Tools, policies, links with climate change

Disaster reduction - practical actions to reduce vulnerability

- Map and avoid high-risk zones
- Build hazard-resistant structures and houses
- Protect and develop hazard buffers (forests, reefs, etc)
- Develop culture of prevention and resilience
- Improve early warning and response systems
- Build institutions, and development policies and plans, to actively contribute to these goals

Evolution of disaster reduction frameworks

1990-1999: International Decade for Natural Disaster Reduction – *Promotion of disaster reduction, technical and scientific buy-in*

1994: Yokohama Strategy and Plan of Action – *First blueprint for disaster reduction policy (social and community orientation)*

2000: International Strategy for Disaster Reduction (ISDR) – *Oriented to increasing public commitment and linkage to sustainable development, enlarged networking and partnerships.*

2002: Johannesburg Plan of Implementation, WSSD – *Notes need for "integrated, multi-hazard, inclusive approach to address vulnerability, risk assessment and disaster management…"*

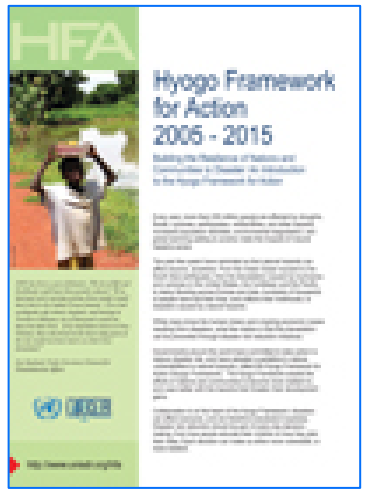
2005-2015: WCDR - Hyogo Framework for Action – *Profile boosted by tsunami experience. Comprehensive voluntary map of action, stresses responsibilities of States and other parties*

The Hyogo Framework for Action 2005-2015:

Building the resilience of nations and communities to disasters

Agreed by 168 governments at the World Conference on Disaster Reduction, Kobe, Hyogo, Japan, 18 – 22 January, 2005

Seeks to achieve a "substantial reduction in losses"



- Disaster reduction as part of sustainable development
- Strengthen institutions (especially in communities) to build resilience
- Build risk reduction into emergency management and recovery

The Hyogo Framework

Priorities for action

- Disaster risk reduction as a priority with strong institutional basis for action
- Identify, assess and monitor disaster risks and enhance early warning
- Knowledge, innovation, education for culture of safety and resilience
- Reduce the underlying risk factors
- Strengthen disaster preparedness for effective response

Implementation and follow-up

- Primary role of the State; supporting roles for international and regional organisations, ISDR secretariat
- Monitoring and reporting, and indicators of progress in risk reduction
- Resources needs

GFDRR New mechanism for integrated package of support

- Support ISDR to develop a coherent and coordinated approach to risk reduction thru partnerships and increased cooperation (TRACK I)
- Assist natural disaster hotspot countries to mainstream disaster risks in development strategies (TRACK II)
- Speedy and predictable financing for disaster recovery in low income countries (TRACK III)
- 3 Tracks include South-South cooperation components

People are central actors in managing risks

- Growing recognition of disaster risks and action by public, businesses, NGOs, communities, cities
- Some Governments actively building their institutions
- Initiatives in 2007 General Assembly on climate change
- ISDR system as global forum for reviewing progress and guiding action

Children playing with "Riskland"

Disasters and Climate Change

- Climate change effects occurrence of natural hazards and vulnerability to disasters (IPCC)
- Early impacts of climate change - increase in extreme climate events
- Global agenda driven by climate change - national concerns grounded in disaster events and climate variability

Disaster Risk Reduction Contributions to Climate Change Agenda

- Scale of need
- Empirical evidence of risk
- Information on risk reduction and adaptation practices

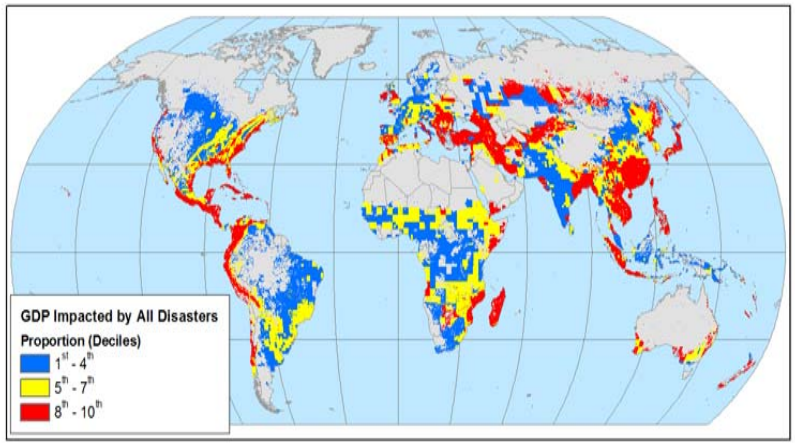
Disaster Risk Reduction Contributions to Climate Change Agenda

- Incorporates climate risk considerations in development

- Measures progress in efforts to reduce risk

ISDR World Bank

more common methodologies and tools



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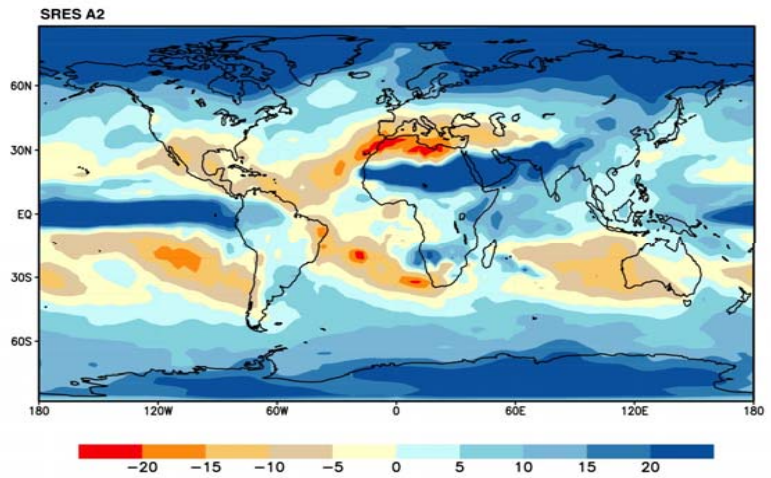

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A Risk Based Approach to Climate Change Adaptation

Challenge

- Context is key
- Time matters
- Pragmatic methodologies
- Convey uncertainties

Example of Climate Change Information for the Water Sector

Socioeconomic Implications of Climate Change Impacts on Water Resources in Some Middle Eastern Countries

Impact	Iraq	Israel	Jordan	Lebanon	West Bank and Gaza	Syria
Increased industrial and domestic water demand	++	+	+	++	+	++
Increased agricultural water demand	+++	++	+	+++	+++	+++
Water resource equity decline	+++	++	+++	++	+++	+++
Flood damage	+++	+	+	++	+	+
Water quality damage	+++	+++	+++	+++	+++	+++
Hydropower loss	+	+	+	++	+	+
Ecosystems damage and species loss	++	++	+	+++	++	++
GDP reduction (%)	3–6	1–2	1–2	2–5	2–5	4–7

Source: Bou-Zeid and El-Fadel 2002.

Note: + = insignificant; ++ = moderate; +++ = high.

Disaster risk assessments for identifying climate change risk

Hazard
Frequency
Magnitude
Area

Exposure
Structures
People
Economy

Vulnerability
Main factors
(context specific)

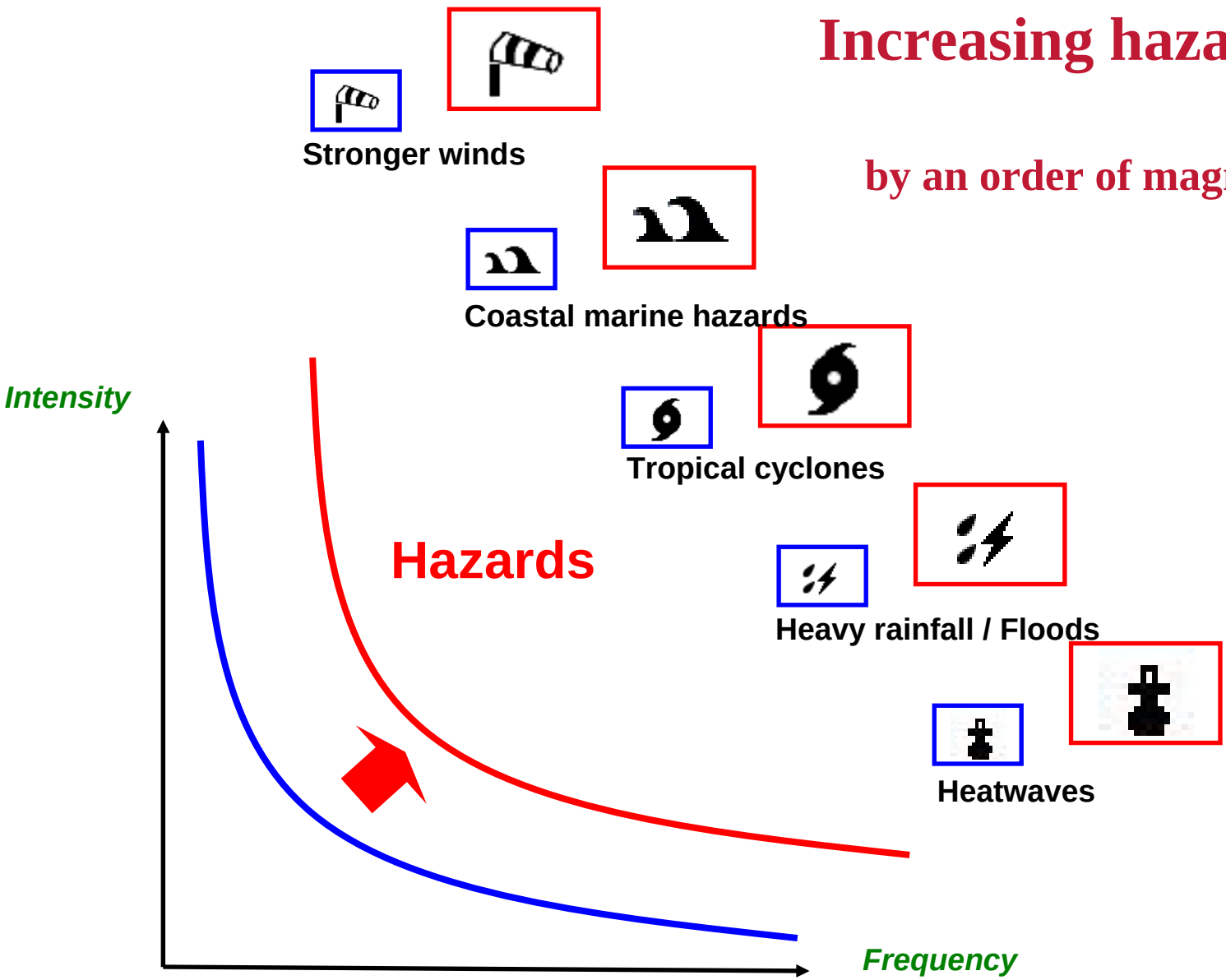
Risk
Probabilistic analysis
Loss exceedance curves and annualized losses (country/region/sector)
Scenarios

Economic resilience

Disaster risk reduction priorities and measures

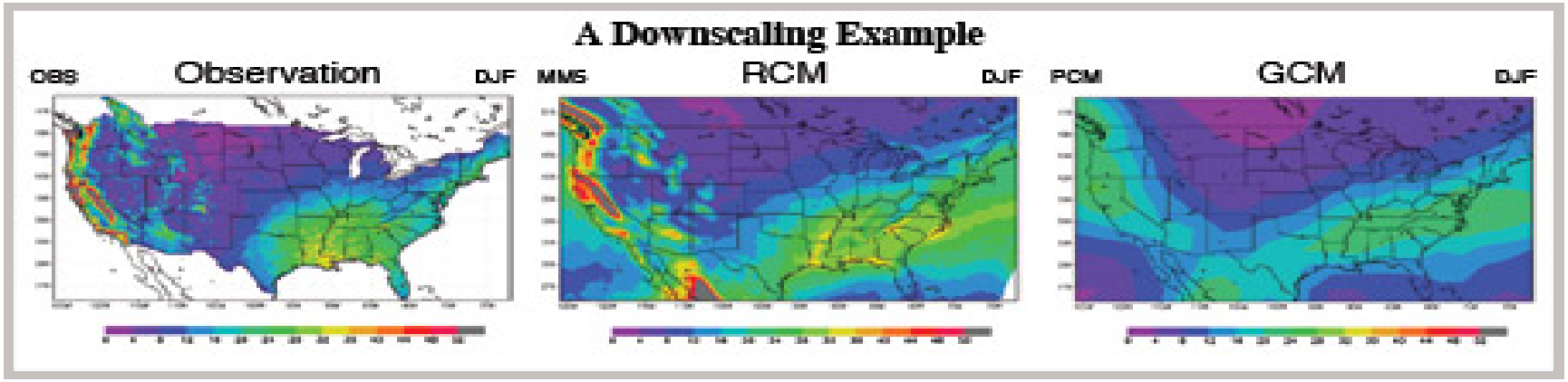
Increasing hazard risk

by an order of magnitude?



Increasing vulnerability

Identify vulnerabilities that may be inducted or exacerbated by climate change, and to evaluate their effects and likelihood.



Common risk assessment tools

Hazard
Frequency
Magnitude
Area
Climate change

Exposure
Structures
People
Economy

Vulnerability
Main factors
(context specific)

Climate change

Climate change
additional risk

Risk
Probabilistic analysis
Loss exceedance curves and annualized losses (country/region/sector)
Scenarios

Economic resilience

Disaster risk reduction **and climate change adaptation** priorities and measures

Key steps to reduce future disaster risks

- ❑ Forge coherent approaches to adaptation and disaster risk reduction
- ❑ Make risk reduction a core part of the post-2012 regime (after current Kyoto Protocol agreement)
- ❑ Scale up the use of risk reduction tools as a core feature of adaptation policies
- ❑ Use the ISDR system and the GFDRR to boost efforts to reduce and manage risk
- ❑ Make risk a central issue in development policy and programmes

Thank you

Contact :
hbrecht@worldbank.org

www.unisdr.org
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