UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

Knowing Risk: The Beginning of Any Solution

A Paradigm Shift

Hans van Ginkel
Rector of United Nations University, Tokyo
Under-Secretary-General of United Nations

Knowing Risk: The Beginning of Any Solution

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

Lay Out

1. Introduction
2. Mastering Disasters from Space
3. Beyond Technological Solutions
4. Security and the States
5. A Copernican Change?
6. Environment and Human Security
7. Environmental Risk and “Natural” Disasters
8. Population, Natural Resources and Environmental Risks
9. “We, the Peoples”
10. Risk Reduction: Challenges and Concepts

1. Introduction

Holding the sun

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

1. Introduction

Fire-Starter

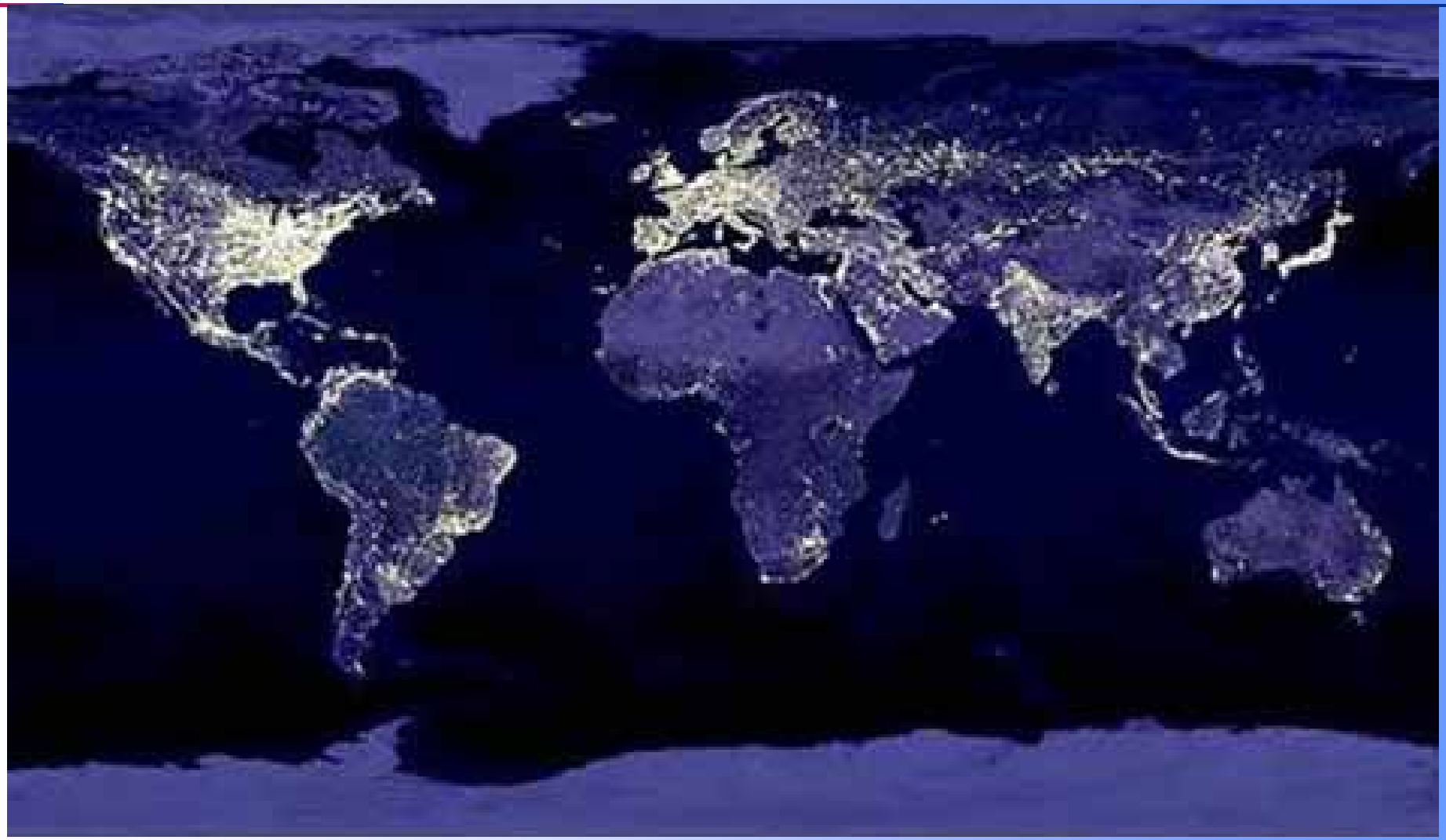
1. Introduction

Edge of the hurricane

1. Introduction

Amazing cloud formation

2. Mastering Disasters from Space



View from outer space

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

2. Mastering Disasters from Space

Unispace III Conference (1999) flagged the need

"to implement an integrated, global system, especially through international cooperation, to manage natural disaster mitigation, relief and prevention efforts, in particular of an international nature, through Earth Observation, communications and other space-based services, making maximum use of existing capabilities and filling gaps in worldwide satellite coverage."

(UN approved study to implement this in 2000)

2. Mastering Disasters from Space

- **Europe (2001)**
  Global Monitoring for Environment and Security (GMES) “to enhance the sustainable management of resources and security of citizens”
- **United States (2005)**
  Guidance for licensing and operation of the US commercial remote sensing space systems “maintaining the nations’ leadership”
- **United Nations**
  Global Earth Observation System of Systems (GEOSS) “data collection from space, with attention primarily for developing countries”
- **Japan Aerospace Exploration Agency (JAXA)**
  Launched 24 January 2006 the Daichi, “Advanced Land Observing Satellite”

2. Mastering Disasters from Space

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

Global Earth Observation System of Systems (GEOSS)

Human Health and Well-Being
WHO, UNESCO…

Disasters
ISDR, DAPHNE…

Energy Resources
IEA-UN…

Climate Change
IPCC, APN…

National & Regional Groups:
- **Canada** – Canadian Group on Earth Observations
- **Europe** – Global Monitoring for Environment and Security
- **United States** – United States Group on Earth Observations
- **Japan**

Water Resource Management
IGVCO, IHP, APEIS…

Weather Forecasting and Warming
WMO, WCRP…

GROUP ON EARTH OBSERVATIONS

Terrestrial, Coastal and Marine Ecosystems
ILTER, IGBP, APEIS…

Biodiversity
CBD, DIVERSITAS…

Current Members:
- 64 countries and EU;
- 43 Participating Organizations, i.e. UNEP, IGBP, FAO, WCRP, WMO, etc.

Activities:
- User Engagement
- Architecture
- Data Management
- Capacity Building
- Outreach

http://www.epa.gov/geoss/index.html

Sustainable Agriculture and Desertification
FAO, UNEP…

APEIS
Asia Pacific Environmental Innovation Strategy Project

Earth Observation Summit:
GEO-I 31 Jul 2003 USA
GEO-II 25 Apr 2004 Japan
GEO-III 16 Feb 2005 Belgium

3. Beyond Technological Solutions

Core questions:

1. will competition, indeed, contribute to a better overall result?
2. what more would be needed to prevent hazards from becoming disasters? (timely reduction of environmental risks and vulnerabilities of individuals and societies)
3. what about “creeping” environmental risks and *un*-natural disasters?

4. Security and the States

- Security both complex and very simple
- Traditional and non-traditional security
- State-souvereignty and “Responsibility-to-protect”
- State- and Human Security
- A “Copernican” Change

5. A Copernican Change?

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

Human Security

- People first;
- (Un)natural disasters claim more casualties than war and violence;
- (Un)natural disasters are on the increase: during the 1990s more than 3 times as many natural disasters as in the 1960s

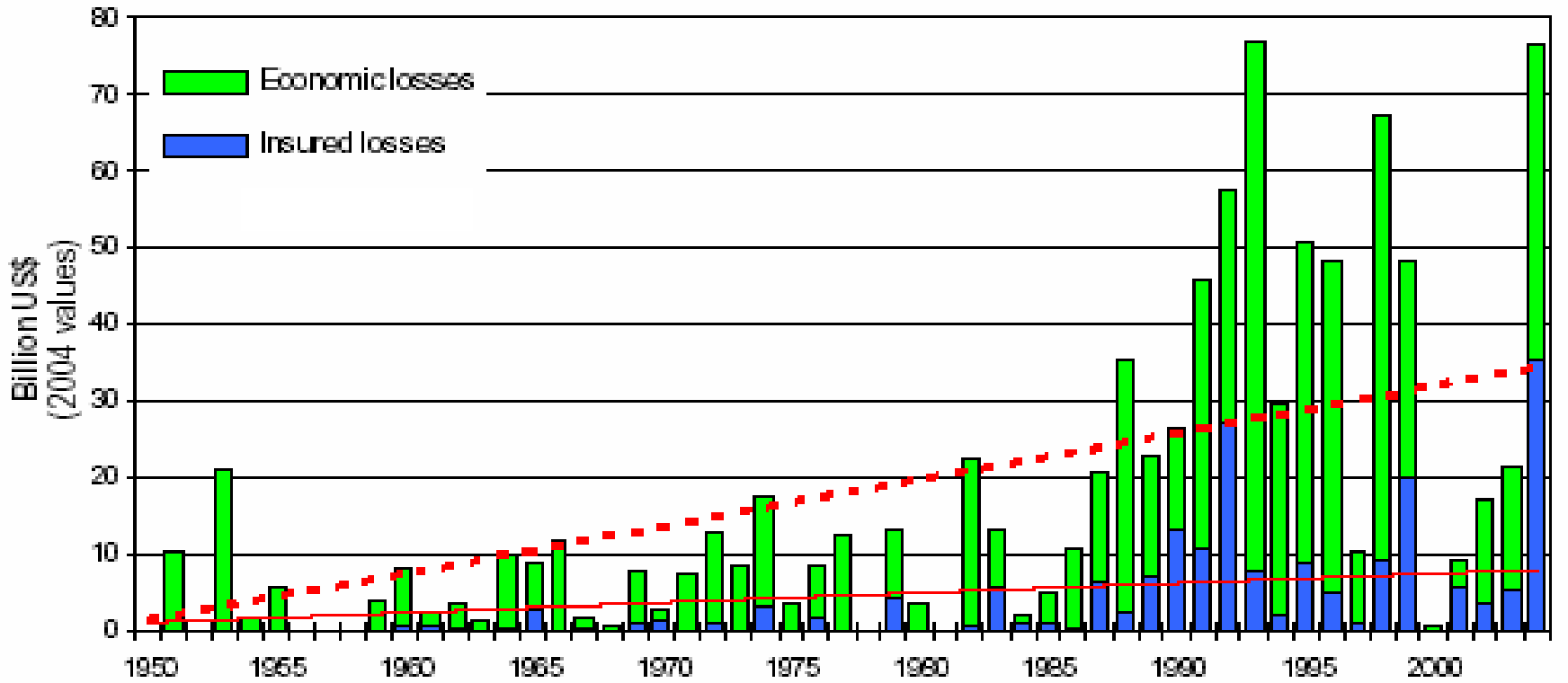
∴ Guiding Principle:

Dimensions of (human) in-security

6. Environment and Human Security

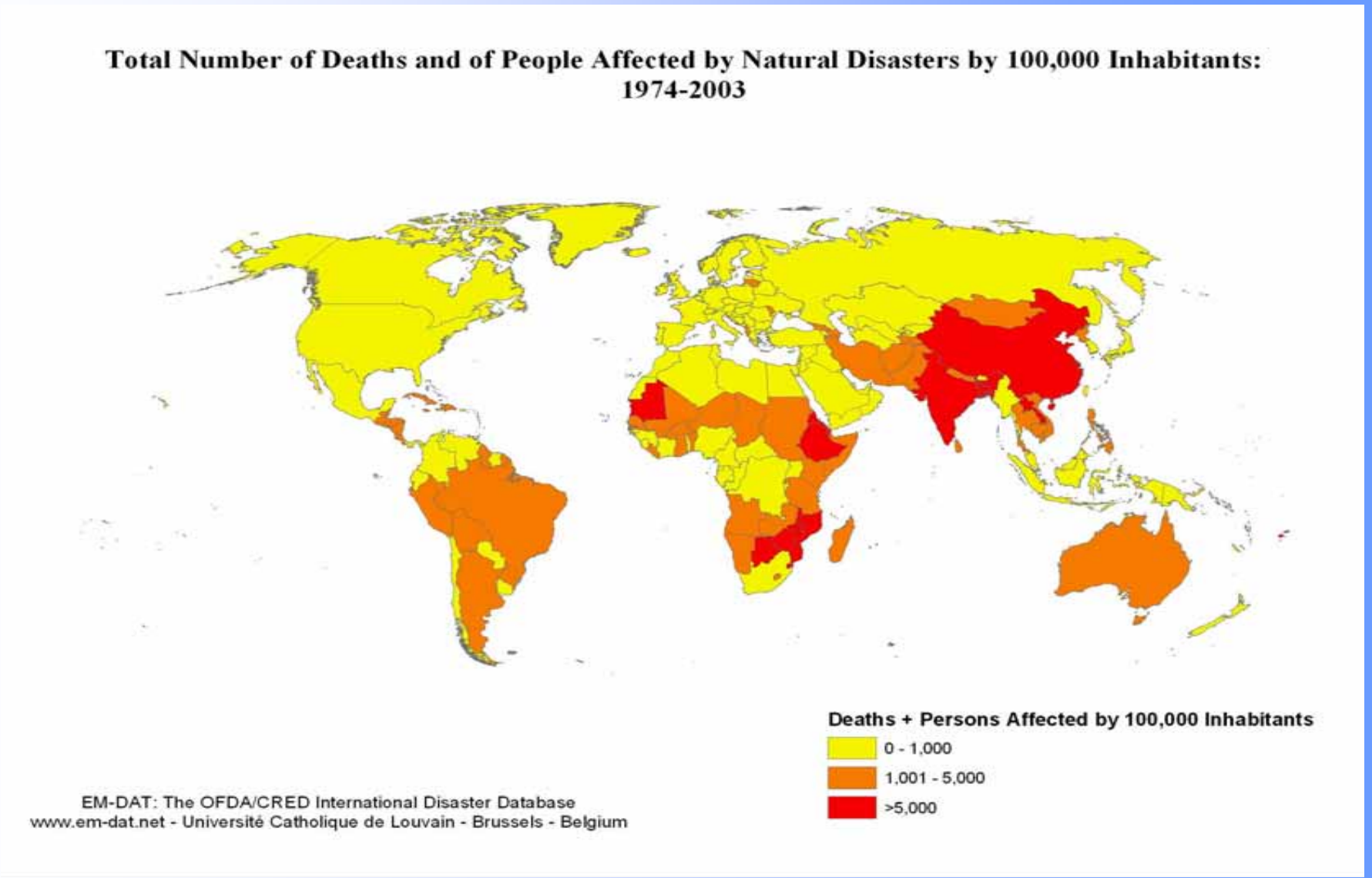
Great Weather Disasters 1950 – 2004

Economic and insured losses

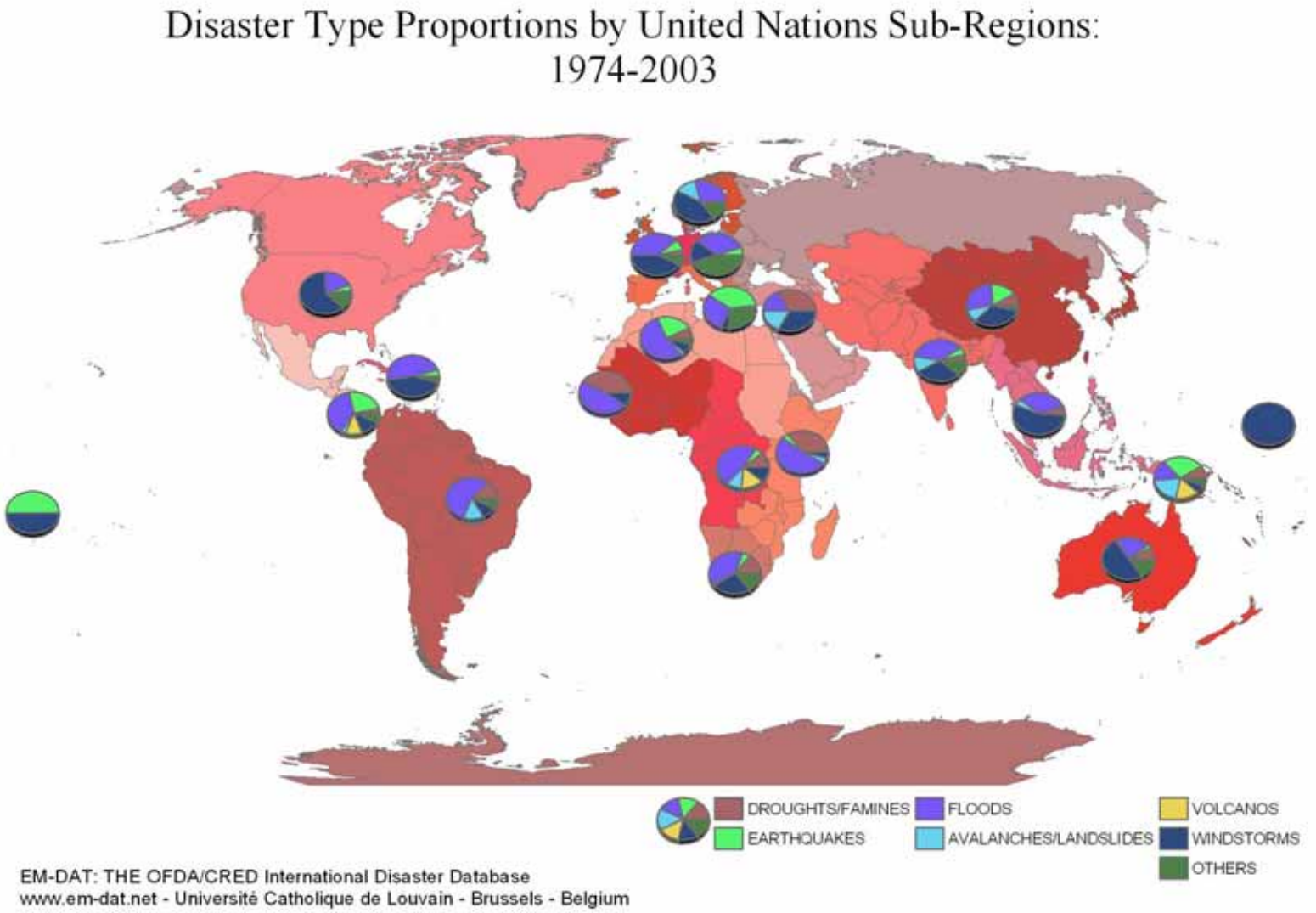


UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

6. Environment and Human Security

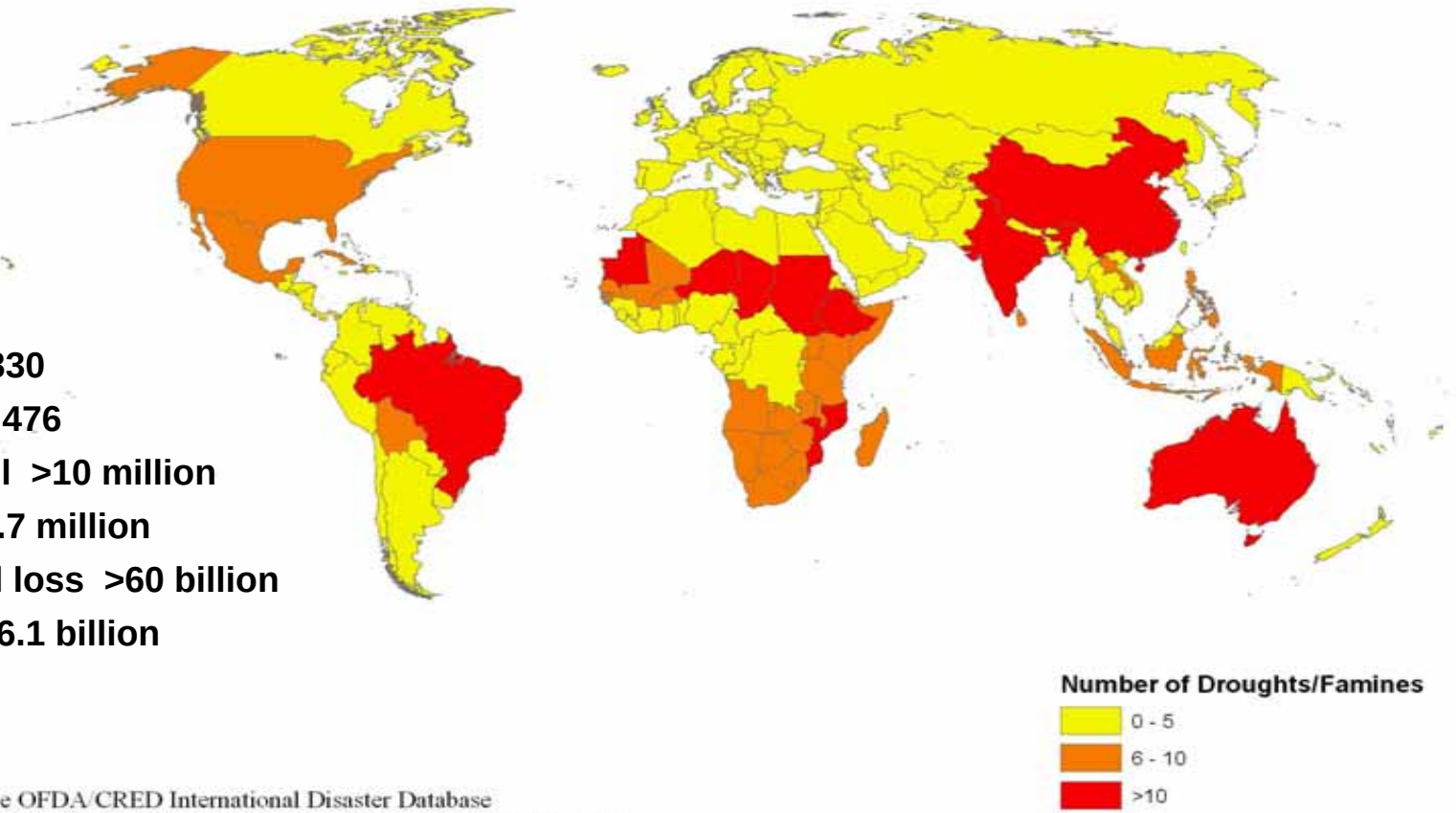


6. Environment and Human Security



6. Environment and Human Security

Number of Occurences of Drought/Famine Disasters by Country: 1974-2003



Events 830
- **Africa 476**

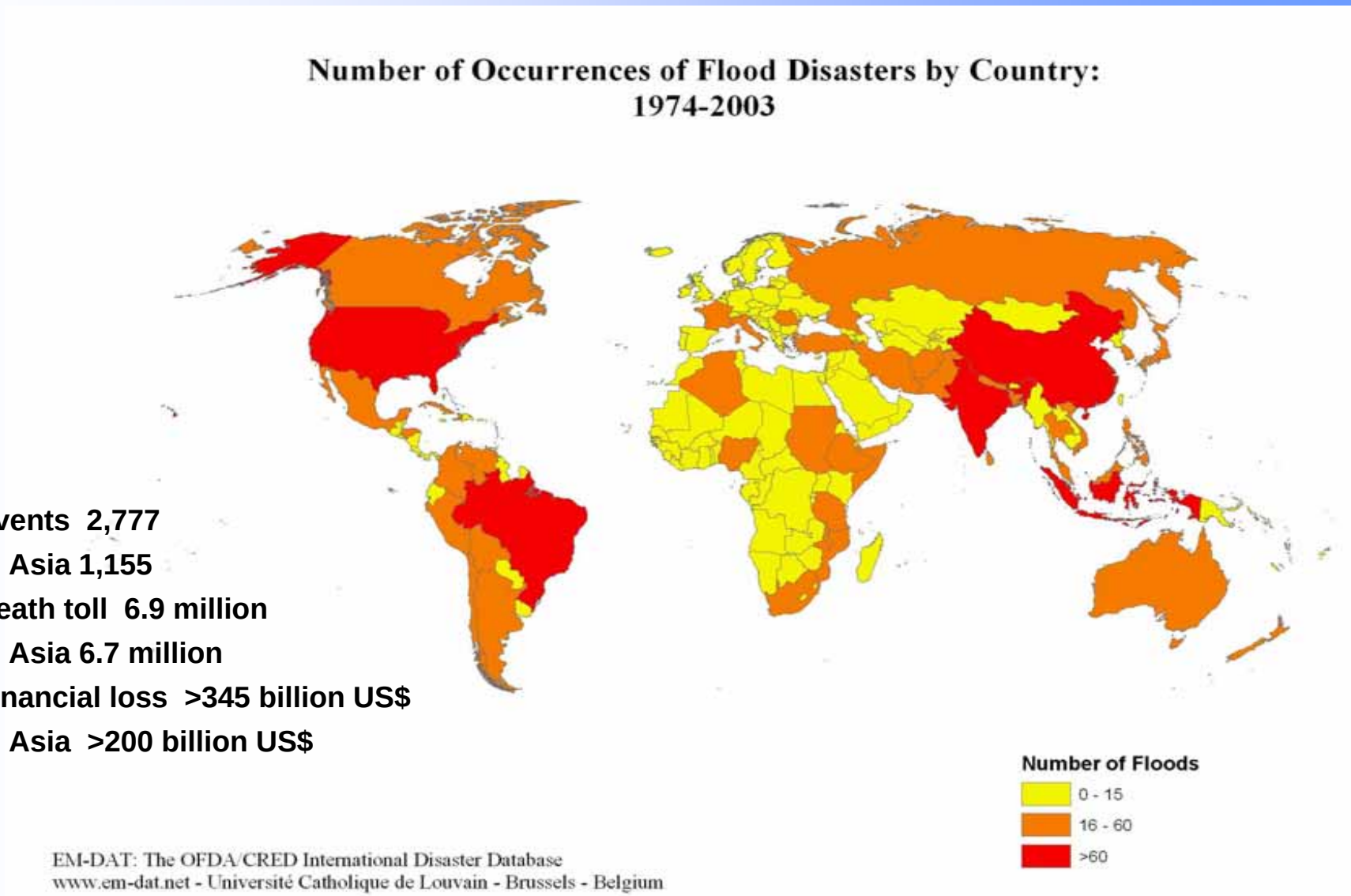
Death toll >10 million
- **Asia 7.7 million**

Financial loss >60 billion
- **Asia 16.1 billion**

EM-DAT: The OFDA/CRED International Disaster Database
www.em-dat.net - Université Catholique de Louvain - Brussels - Belgium

6. Environment and Human Security

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development



Events 2,777
- **Asia 1,155**

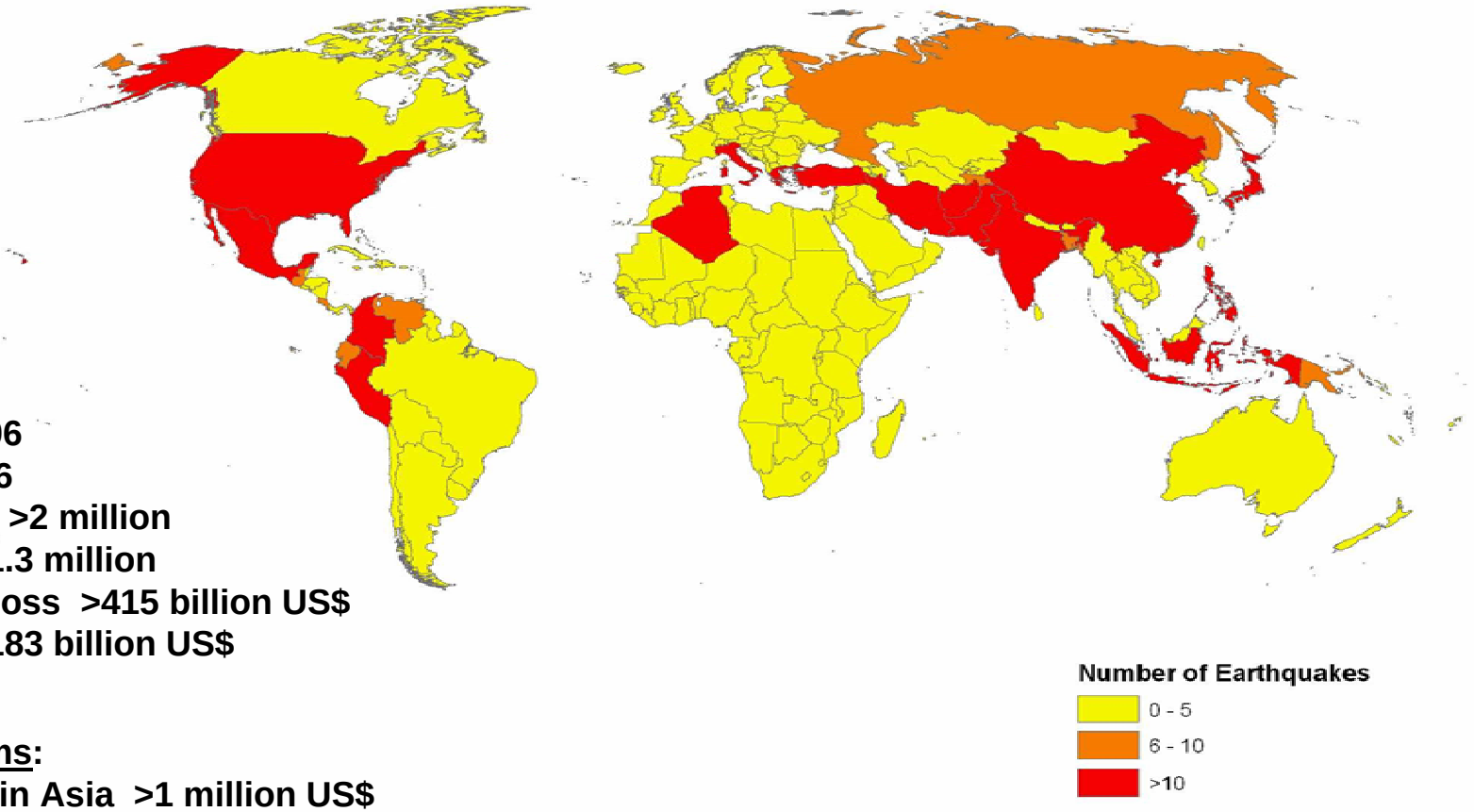
Death toll 6.9 million
- **Asia 6.7 million**

Financial loss >345 billion US$
- **Asia >200 billion US$**

6. Environment and Human Security

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

Number of Occurrences of Earthquake Disasters by Country: 1974-2003



Events 806
- **Asia 456**

Death toll >2 million
- **Asia >1.3 million**

Financial loss >415 billion US$
- **Asia >183 billion US$**

N.B.
<u>Windstorms</u>:
Death toll in Asia >1 million US$
Financial loss in Americas >325 billion US$

7. Environmental Risk and "Natural" Disasters

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

- **Per capita income**

	1960	1990	2000
Ten Richest Countries	30	60	80
Ten Poorest Countries	1	1	1

- **Life Expectancy**

	1998
Ten Richest Countries	78 (Japan 81)
Ten Poorest Countries	45 (Malawi 40)

8. Population, Natural Resources and Environmental Risks

- **Factors:**
  - Population growth
  - Increasing density
  - Urbanization
  - Economic activity
  - Living standards
- **Relations:**
  - Complex, dynamic, multi-causal
  - Recursive
  - Role of prevention/preparation
  - “Know” risk

9. “We, the Peoples”

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

“We, the Peoples”

- Freedom from Want
- Freedom form Fear
- Sustaining Our Future

→ Agenda for Action:
Millennium Development Goals

9. “We, the Peoples”

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

Voices of the People

Millennium Survey:

57,000 adults in 60 countries

- Two-thirds said that their governments had done too little.
- Respondents in developing countries were among the most critical.

9. "We, the Peoples"

Statements in Millennium Survey (1)

- We are failing to provide the freedom of future generations to sustain their lives on this planet;
- The challenges of sustainability simply overwhelm the adequacy of our responses – they are too few, too little and too late;
- Reducing the threat of global warming requires, above all, that carbon emissions be reduced;
- The international community has not found the political will needed to make the necessary changes;
- About one third of the world's population already lives in countries considered to be *"water stressed;"*

9. “We, the Peoples”

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

Statements in Millennium Survey (2)

- We need a *“Blue Revolution”* in agriculture that focuses on increasing productivity per unit of water – *“more crop for a drop”*;
- Conserving agricultural biodiversity is essential for long-term food security;
- Environmental issues must be fundamentally repositioned in the policy-making process;
- Only when they reflect a fuller accounting can economic policies ensure that development is sustainable;
- The peoples of our small planet *want their governments to do more to protect their environment.*

9. “We, the Peoples”

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

Findings of the Millennium Eco-System Assessment (MA) Synthesis Report

- Experts and Review Process of the Millennium Ecosystem Assessment (MA)
  - Prepared by 1360 experts from 95 countries
  - 80-person independent board of review editors
  - Review comments from 850 experts and governments
  - In addition to global assessment, includes information from 33 sub-global assessments
- Governance
  - Called for by UN Secretary General in 2000
  - Authorized by governments through 4 conventions
  - Partnership of UN agencies, conventions, business, non-governmental organizations with a multi-stakeholder board of directors

9. “We, the Peoples”

Major Findings of MA

- Over the past 50 years, humans have changed ecosystems more rapidly and extensively in human history.
- The changes that have been made to ecosystems have contributed to substantial net gains in human well-being and economic development, but these gains have been achieved at growing costs in the form of the degradation of many ecosystem services, increased risks of nonlinear changes, and the exacerbation of poverty for some groups of people.
- The degradation of ecosystem services could grow significantly worse during the first half of this century and is a barrier to achieving the Millennium Development Goals.
- The challenge of reversing the degradation of ecosystems while meeting increasing demands for their services can be met under some scenarios involving significant policy and institutional changes, but these changes are large and not currently under way.

10. Risk Reduction: Challenges and Concepts

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

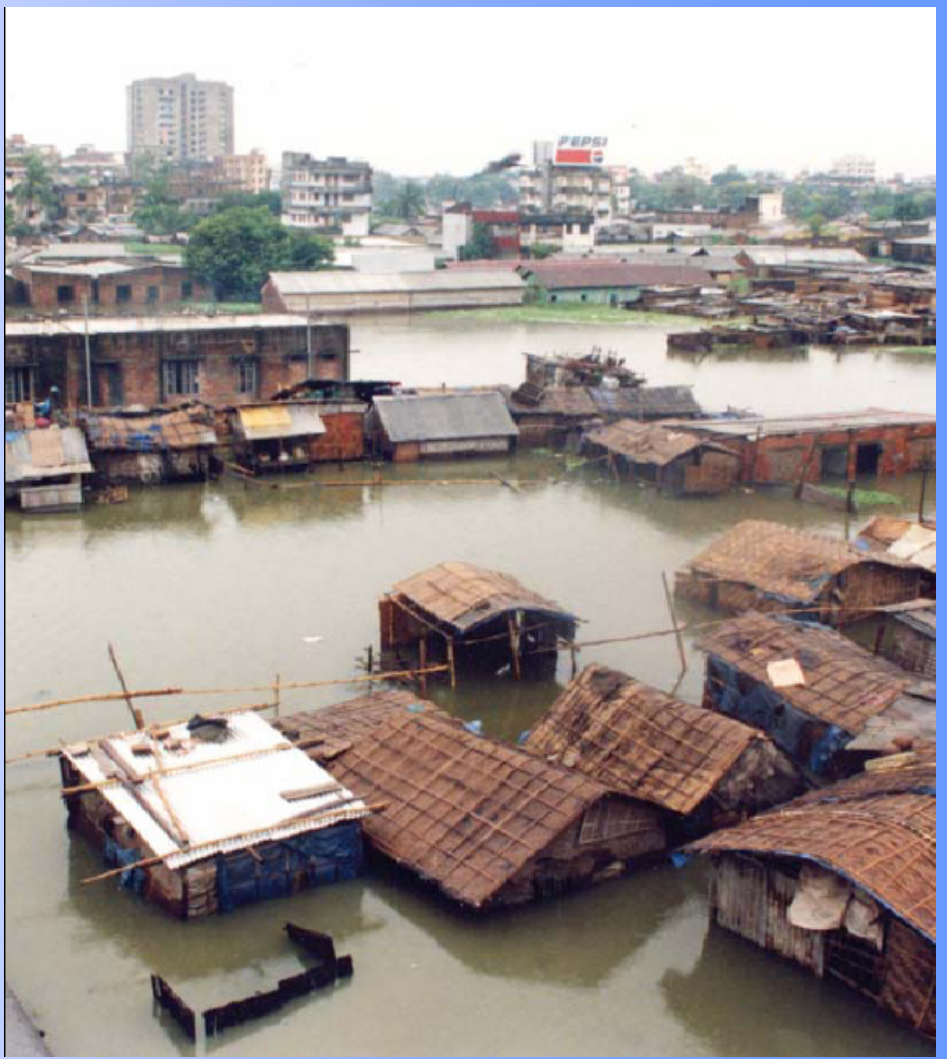
Can sustainable development be achieved without taking into account the risk to natural hazards?

Short answer is: NO!

Identification of hazards/vulnerability, monitoring and management of risk are integral to sustainable development.

Risks will always remain!

Address root-causes to vulnerability:
- Social
- Economic
- Environmental
- Technical-physical factors



Key Messages from Hyogo

2005: Hyogo Framework for Action 2005-2015

Integrate disaster risk reduction into policies, plans and programmes*of sustainable development and poverty reduction*

Member States, Regional organizations, United Nations system, financial institutions and NGOs *to engage fully in supporting and implementing the International Strategy for Disaster Reduction, and cooperate to advance integrated approaches to building disaster resilient nations and communities*

Focus on National Implementation*, through bi-lateral, regional and international cooperation.*

Building the resilience of nations and communities to disasters

Three strategic goals:

1. The integration of disaster risk reduction into sustainable development policies and planning.
2. The development and strengthening of institutions, mechanisms and capacities to build resilience to hazards.
3. The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes.

10. Risk Reduction: Challenges and Concepts

UNITED NATIONS UNIVERSITY
Advancing Knowledge for Human Security, Peace and Development

Five priorities for action 2005-2015:

1. **Governance**: *ensure that disaster risk reduction is a national and local priority with strong institutional basis for implementation*
2. **Risk identification:** *identify, assess and monitor disaster risks and enhance early warning*
3. **Knowledge:** *use knowledge , innovation and education to build a culture of safety and resilience at all levels*
4. **Reducing the underlying risk factors**
5. **Strengthen disaster preparedness for effective response**

Example of HFA Implementation at national level:

Pakistan – Safer Construction

Promoting Safe schools, and disaster management contingency plans for schools

ISDR brings its comparative advantage : Global networks of disaster reduction, which enabled it bring **International Best practices in seismically safe construction and training practices** through NSET and Kyoto University to be available to National and local authorities.

Sharing of **Regional experiences** from similar disasters from Iran, India, Nepal and Indonesia **in safe earthquake reconstruction.**

UNITED NATIONS UNIVERSITY

Advancing Knowledge for Human Security, Peace and Development

Thank you