



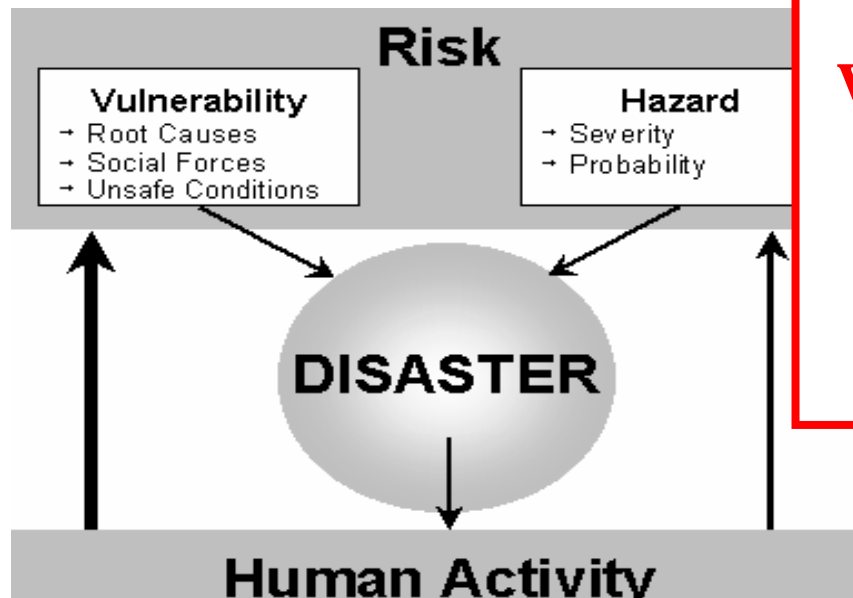
# Integrating Research on Disaster Risk

**Presentation to International Disaster and  
Risk Conference, Davos, August 2008**

**Gordon A. McBean, PhD, FRSC  
Chair, ICSU Planning Group on Natural and Human-  
induced Environmental Hazards and Disasters  
Institute for Catastrophic Loss Reduction  
University of Western Ontario, Canada**

**HAZARD:** *potentially damaging physical event, phenomenon or human activity that **MAY** cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.”*

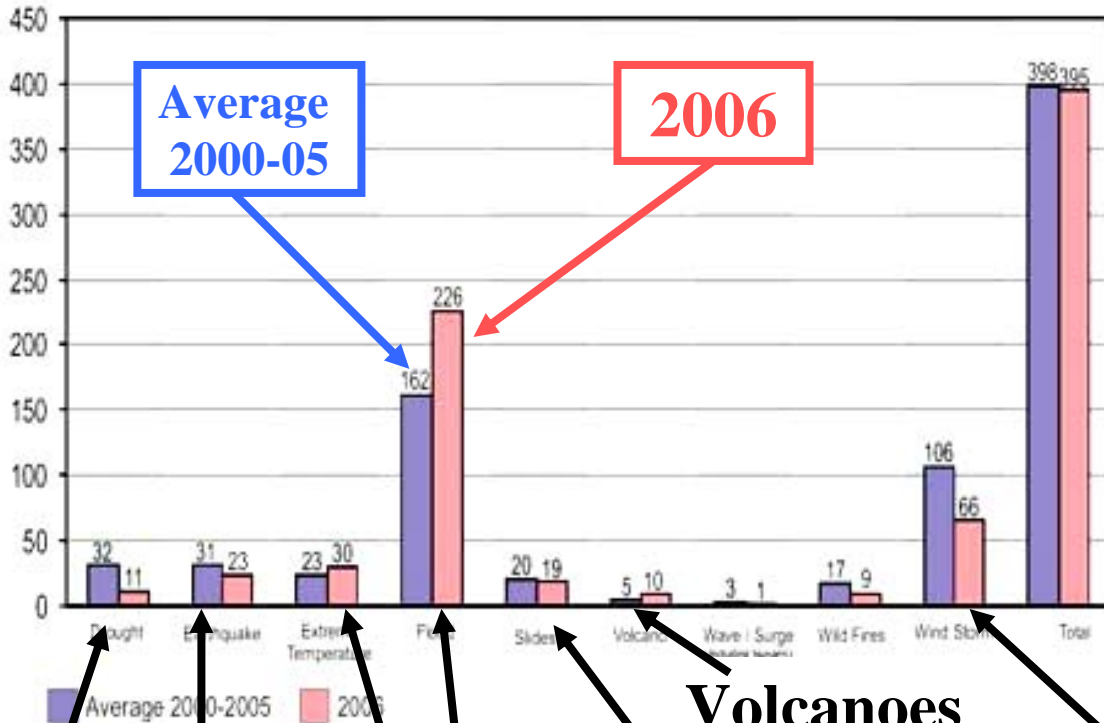
**VULNERABILITY:** *conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.*



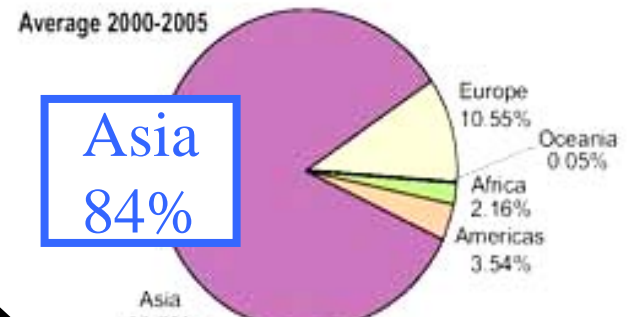
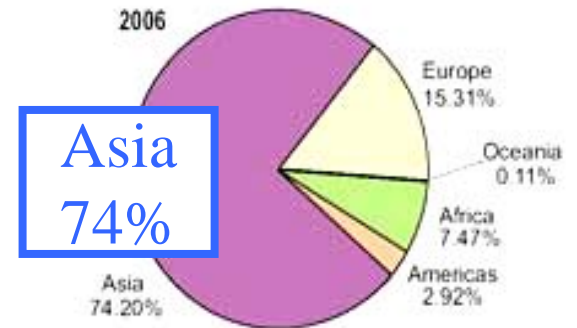
**Disasters result when there is the intersection of a hazard and vulnerability.**

**Research on both hazards and vulnerabilities**

**Trigger events – last 10 years**  
**Floods, storms, droughts, ...>75%**



Percentage of people killed by natural disasters by continent



**Drought**      **Earthquake**      **Ext. temperatures**      **Flood**      **Slide**      **Volcanoes**      **Wind**

**Earthquakes, tsunamis -7% - horrific**

**Integrated Research on all hazards and vulnerabilities**

**World Conference on Disaster Reduction,  
Kobe, January 2005  
Hyogo Declaration and Hyogo Framework  
for Action**

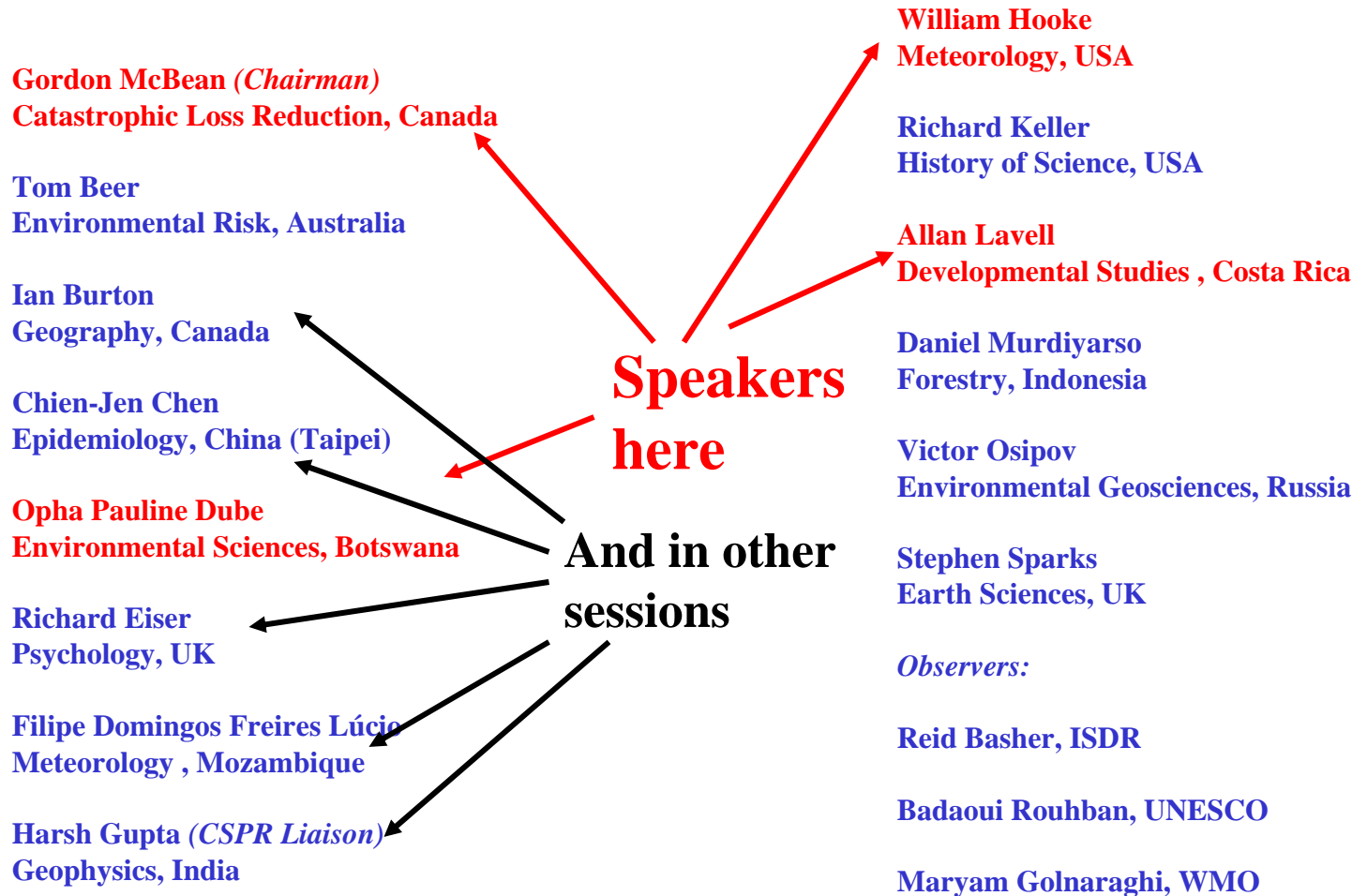
- *“The starting point for reducing disaster risk and for promoting a culture of disaster resilience lies in the **knowledge of the hazards and the physical, social, economic and environmental vulnerabilities to disasters that most societies face, and of the ways in which hazards and vulnerabilities are changing in the short and long term,....**”*

# HFA Priorities for Action

1. Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
2. Identify, assess and monitor disaster risks and enhance early warning.
3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
4. Reduce the underlying risk factors.
5. Strengthen disaster preparedness for effective response at all levels.

# ICSU established a Natural and Human-induced Environmental Hazards and Disasters Planning Group – to plan a long-term research program

## Membership



# Integrated Research on Disaster Risk

- *addressing the challenge of natural and human induced environmental hazards*

- An integrated approach to research on disaster risk through:
  - An international, multidisciplinary collaborative research programme lasting a decade or more
- The legacy of the IRDR Programme will be an *enhanced capacity* around the world to address hazards and make *informed decisions* on actions to reduce their impacts.
  - Leading to societies shifting focus from response-recovery towards prevention-mitigation, building resilience and reducing risks, learning from experience and avoiding past mistakes. **OUTCOME:**
  - When comparable events occur in future, societies benefit from reductions in: loss of life; people adversely impacted; and property and economic loss, through wiser choices and investments made by civil society.
- This legacy clearly implies a strong commitment of IRDR to development – development of science and development of broadly-based capacity. Partners- national and international *development assistance agencies; national and international science institutions and funding councils*

# Integrated Research on Disaster Risk

## *Scope of the Programme*

- **Research Focus:**
- ***Mitigation*** - actions taken before or after a hazard event to reduce impacts on people and property.
- ***Preparedness*** - policies and procedures designed to facilitate an effective response to a hazard event;
- **Learn from:**
  - ***Response*** - actions taken immediately before, during and after a hazard event to protect people and property and to enhance recovery;
  - ***Recovery*** - actions taken after a hazard event to restore critical systems and return a community to pre-disaster conditions.

# Integrated Research on Disaster Risk

## *Scope of the Programme*

- **Research foci:**
  - **Hydrometeorological and geophysical trigger events,**
    - earthquakes; tsunamis
    - volcanoes
    - flooding; storms (hurricanes, cyclones; typhoons, etc.)
    - heat waves; droughts and fires
    - landslides; coastal erosion
    - climate change (increases of extreme events);
    - related events such as wild fires and locust outbreaks.
  - **Effects of human activities on creating or enhancing disasters, including land-use practices.**
  - **Space weather and impact by near-Earth objects; and**
  - **Research Objectives:**

# Objective 1:

## Characterization of hazards, vulnerability and risk

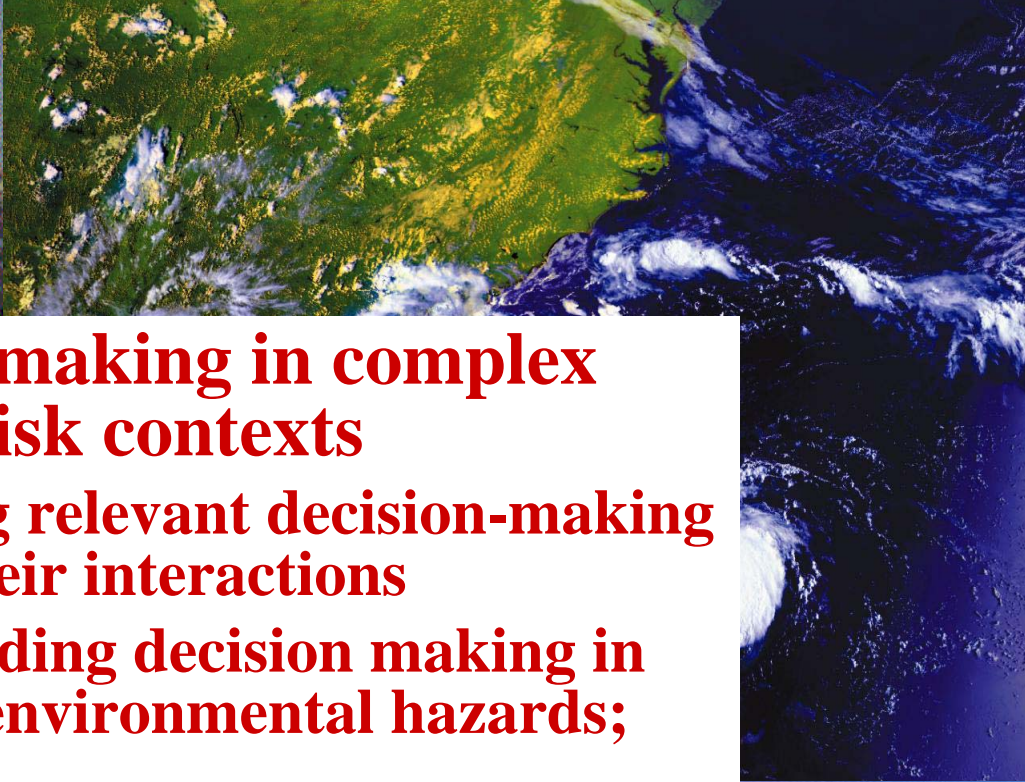
- 1.1: identifying hazards and vulnerabilities leading to risks;
- 1.2: forecasting hazards and assessing risks; and
- 1.3: dynamic modelling of risk.



# Objective 2:

## Effective decision making in complex and changing risk contexts

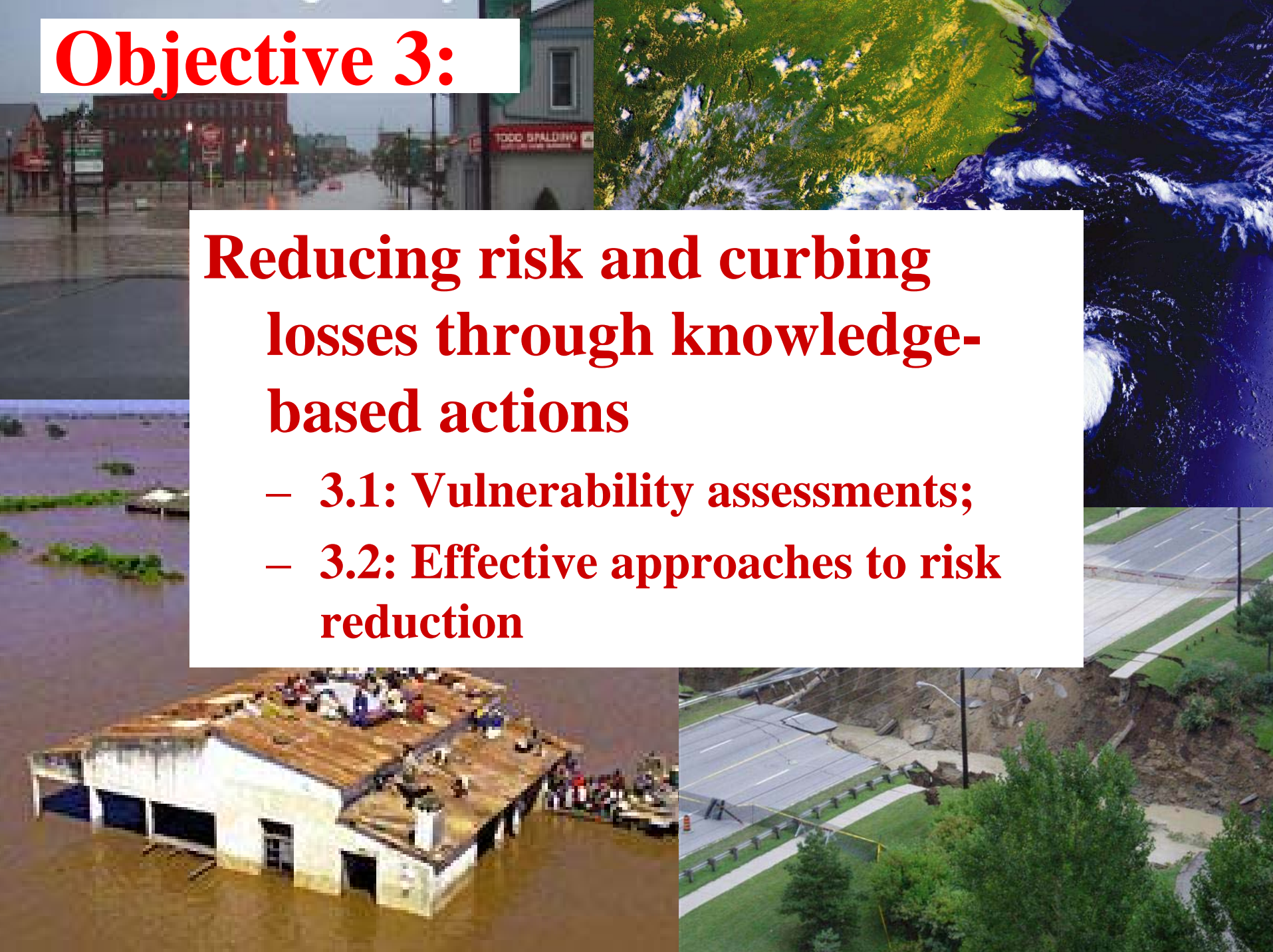
- 2.1: Identifying relevant decision-making systems and their interactions
- 2.2: Understanding decision making in the context of environmental hazards; and
- 2.3: Improving the quality of decision-making practice.



# Objective 3:

## Reducing risk and curbing losses through knowledge-based actions

- 3.1: Vulnerability assessments;
- 3.2: Effective approaches to risk reduction



# Cross-Cutting Themes

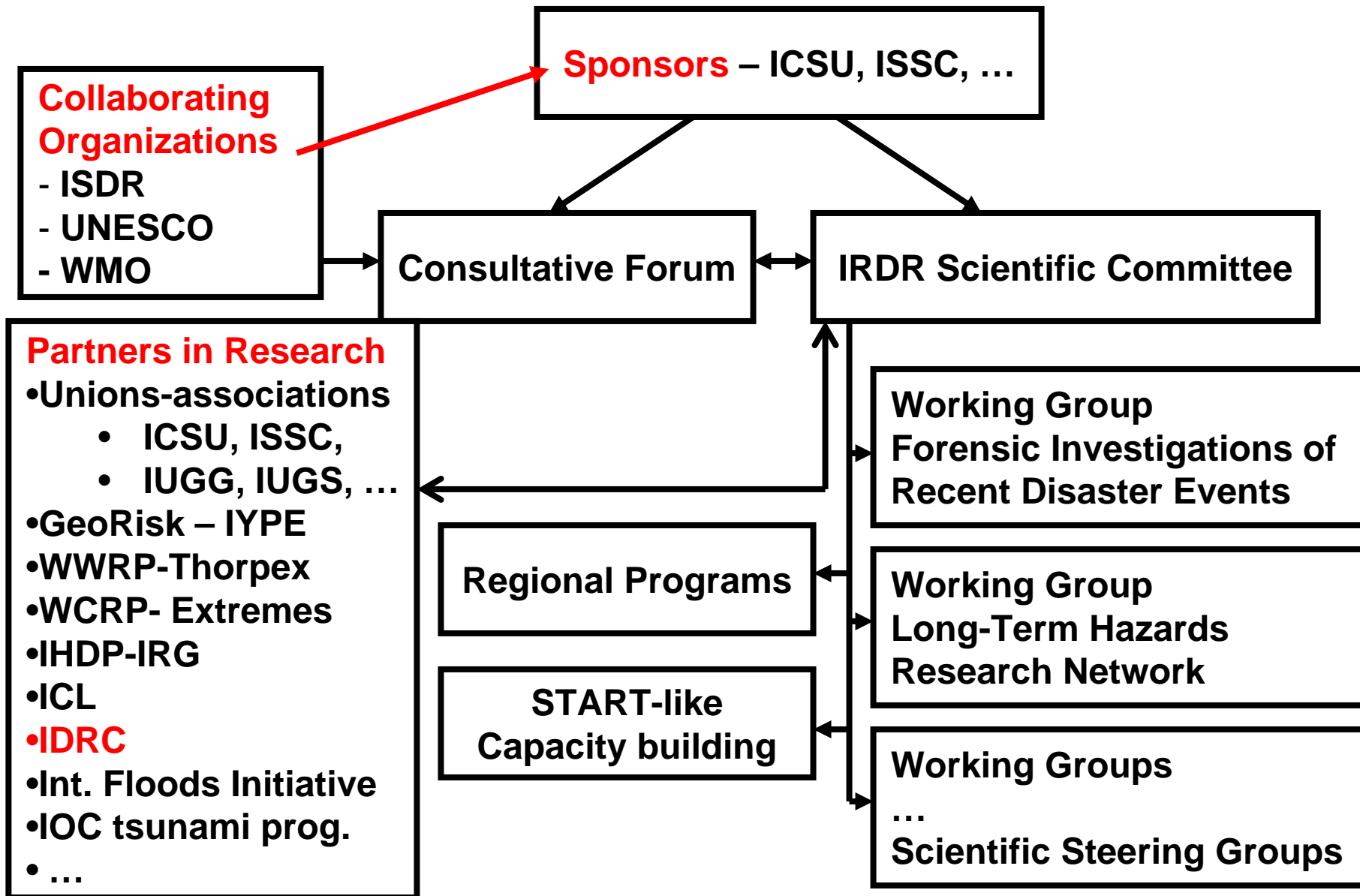
1. Capacity building
2. Case studies and demonstration projects
3. Assessment, data management and monitoring



# Mechanisms for guidance and oversight of the Programme

- **Scientific Committee to be in place by end of year**
  - Scientific Committee (SC) of eight members, each of whom would serve a three-year term, renewable once.
    - Members and Chair of the SC would be selected by mutual agreement between the joint sponsoring organizations of the Programme, on the basis of their standing in the international scientific community and their commitment to the strategic objectives of the Programme, with due consideration being given to disciplinary, geographical and gender balance.
- **Consultative Forum**
  - attended by representatives of component and complementary programmes and initiatives would be created and meet regularly..
  - Use of other forums:
    - International Disaster and Risk Conference
    - ISDR Global Platforms
    - ...

# Integrated Research on Disaster Risk Programme





**ICCSU**

International Council for Science

# **Integrated Research on Disaster Risk - IRDR**

**Addressing the challenge of natural and  
human-induced environmental hazards**

**Thank you for  
your attention**