



# **Research on Climate Change and Natural Hazards**

## **From the 6th to 7th Framework Programme**

**Elisabeth LIPIATOU/Denis PETER  
Environment and Climate System Unit  
Environment Programme  
Research DG, European Commission**

**IDRC – Davos, 28 August 2006**

SUSTAINABLE DEVELOPMENT, GLOBAL CHANGE AND ECOSYSTEMS



# Addressing Natural Hazards

## Research-Policy Context - International level

- **International Strategy for Disaster reduction – Hyogo Framework for action 2005-2015**
- **International Council for Science – ICSU Natural and human induced environmental hazards (10 year plan)**
- **International year of Planet Earth (UNESCO, IUGS, ..)**
- **IPCC / UNFCCC - United Nations Framework Convention on Climate Change**
- **GEO (Group on Earth Observation – 10-Year GEOSS Implementation Plan**



# Addressing Natural Hazards

## Research-Policy Context - European level

- **DG ENV Environment policy**

- Action programme for civil protection = implement actions to facilitate cooperation, exchange of experience, mutual assistance between Member States.

- Community mechanism for civil protection - MIC (monitoring and information centre)

<http://ec.europa.eu/environment/civil/index.htm>

- Legislation : Proposal for a Directive of the European Parliament and of the Council on the assessment and management of floods (COM(2006)15 final of 18.1.2006. Goals : flood risk assessment, risk mapping and risk management plans.

[http://ec.europa.eu/environment/waterflood\\_risk/index.htm](http://ec.europa.eu/environment/waterflood_risk/index.htm)

# Addressing Natural Hazards

## Research-Policy Context - European level

- **DG REGIO - Regional Policy**

- Cooperation between regions/ support from the Structural funds: e.g. Interreg programme.
- Future perspective of the Cohesion programme 2007-2013: Prevention of risks, development and implementation of plans to prevent and cope with natural and technological risks
- [http://ec.europa.eu/regional\\_policy/funds/2007/index\\_en.htm](http://ec.europa.eu/regional_policy/funds/2007/index_en.htm)

- **DG DEV and External Affairs**

- EU response to the Indian Ocean tsunami event
- <http://ec.europa.eu/comm/world/tsunami/>

# Addressing Natural Hazards European Framework Programmes

- **DG Research**
  - Programme Environment (including climate change):  
Pressures on Environment and Climate, Natural Hazards, Earth Observation, Environmental Technologies  
[http://ec.europa.eu/research/environment/index\\_en.htm](http://ec.europa.eu/research/environment/index_en.htm)
- **DG Information Society & Media**
  - Information and Communication Technologies for the Environment (research on ICT applications for crisis and emergency management).  
<http://cordis.europa.eu/ist/environment/index.html>
- **DG Enterprise**
  - GMES (Global mechanism for Environment and Security) mostly in support of a satellite Earth Observation capacity  
<http://www.gmes.info/2.0.html>
- **JRC Joint research centre Ispra**
  - Research and applications in support to EC policies  
<http://www.irc.cec.eu.int/>





## Example of ongoing Research projects 6th Framework Programme (2002-2006)

### LESSLOSS

<http://www.lessloss.org>

- **Duration**: 5 year project with 46 partners
- **EU-Contribution**: approx. €6.5 million
- **Coordinator**: Università degli Studi di Pavia – Italy
- **Consortium Partners**: AT, BE, CZ, DE, ES, FR, GR, IT, NO, PT, SE, SI, TR, UK
- The LESSLOSS project addresses earthquakes and landslides. It focuses on impact assessment, natural hazard monitoring, mapping and management strategies, improved disaster preparedness, mitigation, and relevant pre-normative research.
- The main expected result are: methods and approaches to design and structures and earth slopes, as well as manufacturing and testing of innovative isolating and dissipating seismic devices.

## Example of ongoing Research projects 6th Framework Programme (2002-2006)

### FLOODSITE

<http://www.floodsite.net>

- **Duration**: 5 year project with 36 partners
- **EU-Contribution**: approx. €10 million
- **Coordinator**: P. Samuels (H&R Wallingford – UK)
- **Consortium Partners**: UK, NL, DK, DE, SE, PT, GR, BE, PL, ES, FR, HU, CZ, IT
- FLOODSITE will fully integrate hazard, vulnerability and risk assessments, and will develop a methodology and tools for inland, estuarine and coastal flood risk analysis and management.
- It will jointly address the environmental, ecological and socio-economic aspects of floods, while promoting co-operation amongst scientists and end-users.

# Examples of other 6th Framework Programme selected projects

- **FIREPARADOX:** Scientific and technical building blocks to « learn to live with fire » (€12 million) [www.fireparadox.org](http://www.fireparadox.org)
- **VOLUME:** Volcanoes: Understanding subsurface mass movement (€3,1 million) [www.volume-project.net](http://www.volume-project.net)
- **NOVAC:** Network for observation of volcanic and Atmospheric change (€2,6 million) [www.novac-project.eu](http://www.novac-project.eu)
- **IRASMOS:** Integral Risk Management of Extremely Rapid Mass Movements (€2,4 million) [www.slf.ch/irasmos](http://www.slf.ch/irasmos)
- **GALAHAD:** Advance Remote Monitoring Techniques for Glaciers, Avalanches and Landslides Hazard Mitigation (€1,6 million) [www.galahad-euproject.org](http://www.galahad-euproject.org)
- **SAFER:** Seismic Early Warning for Europe (€3,6 million) [www.saferproject.net](http://www.saferproject.net)
- **SEAHELLARC:** Seismic and Tsunami risk assessment and mitigation scenarios in western Hellenic Arc (€1.3 million)
- **TRANSFER:** Tsunami Risk and Strategies for the European Region (€3,3 million)
- **NEAREST:** Integrated Observation from Near Shore sources of Tsunami (€2,8 million)

# 7th Framework Programme 2007-2013

**Cooperation – Collaborative research (€32.292 million\*)**

**Ideas – Frontier Research (€7.460 million\*)**

**People – Human Potential (€4.727 million\*)**

**Capacities – Research Capacity (€4.291 million\*)**

+

**JRC (non-nuclear)**

**JRC (nuclear)**

**Euratom**

\*Draft figures

SUSTAINABLE DEVELOPMENT, GLOBAL CHANGE AND ECOSYSTEMS





**Cooperation:**  
**Environment (inc. climate change)**

+/- €1.886 million

**Climate change, pollution and risk**  
**- Pressure on Environment and Climate**  
**- Natural Hazards**

**Sustainable Management of Resources**

**Environmental Technologies**

**Earth observation and assessment tools**



# Climate change, pollution and risks

## Pressures on Environment and Climate: core issues

- **Integrated research on the functioning of climate and the earth system (analyse of the past, prediction of the future)**
- **Development of effective adaptation and mitigation measures to climate change and its impacts.**
- **Development and validation of advanced climate change models from the global to sub-regional scales.**
- **Assessment of changes, potential impacts and critical thresholds (e.g. ocean acidification).**
- **Changes in atmospheric composition**
- **Climate change and the water cycle.**
- **Pressures on the environmental quality and on climate from natural and anthropogenic pollution of the air, water and soil.**



# Climate Change, Pollution and Risks

## Natural Hazards: core issues

- Disasters related to climate (such as storms, droughts, forest fires, landslides, floods), and geological hazards (such as earthquakes, volcanoes, tsunamis) will be studied.
- Managing natural disasters requires a multi risk approach.
- There is a need for improved knowledge, methods and integrated framework for the assessment of hazards, vulnerability and risks.
- Mapping, management, prevention and mitigation strategies including consideration of economic and social factors need to be developed.
- The research will allow the underlying processes to be better understood, and prediction and forecasting methods to be improved on the basis of a probabilistic/deterministic approaches.
- Research will also underpin the development of early warning and information systems.
- Societal repercussions of major natural hazards will be quantified.





EUROPEAN  
COMMISSION

Community Research

# Main areas of « Natural Hazards » in the Work programme

- **Hazard assessment, triggering factors and forecasting**
- **Vulnerability assessment and societal impacts**
- **Risk assessment and management**
- **Multi-risk assessment and mitigation strategies**



## Future Call in 2007

- **Potential topics for the next call for proposal will include:**
  - Emerging area and issues (vulnerability, multi-risk)
  - Topics not opened in the 6th Framework programme (e.g. storms, avalanches)
  - Topics with strong international co-operation component (volcanology,...)

# More Info on EU Research

- **Current EU research Programmes and Calls**  
[www.cordis.lu/FP6/calls.cfm](http://www.cordis.lu/FP6/calls.cfm)
- **Info on FP7:**  
[www.europa.eu.int/comm/research/fp7](http://www.europa.eu.int/comm/research/fp7)
- **EU-MEDIN:**  
[www.eu-medin.org](http://www.eu-medin.org)