



# EC Activities in the field of Natural Hazards/Disasters

## Brief overview



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# Addressing Natural Hazards and Disasters in the European Commission

## Brief overview :

- 1. Policy context**
- 2. Research dimension**
- 3. Pre-operationnal activities**



## Addressing Natural Hazards/Disasters: 1. Policy Context – International level

- International Strategy for Disaster reduction – Hyogo Framework for action 2005-2015, (Kobe World Conf. 2005)
- International Council for Science – ICSU- Natural and human induced environmental hazards (6 year science plan 2006-2012) IRDR – Integrated Research on Disaster Risk Programme.
- IPCC activities related to extreme events and to climate related disasters (Special report to come end of 2011)
- GEO (Group on Earth Observation – 10-Year GEOSS Implementation Plan
- OECD initiatives e.g. GEM (Global Earthquake Model)

# Addressing Natural Hazards/Disasters: 1. Policy Context – European level

## ECHO/Humanitarian aid & Civil protection :

### **Framework for cooperation in disaster response, preparedness and prevention:**

#### **1. Emergency response**

**MIC (Monitoring and Information Centre) and related activities : monitoring and alert, training, civil protection exercises, coordination and assistance inside and outside EU.**

**- Commission Staff Working Paper 'Towards Better Protecting Citizens against Disaster Risks: Strengthening Early Warning Systems in Europe [SEC(2007) 1721 of 14.12.2007] DG ENV/ECHO.**

**-Communication: Towards a stronger European disaster response: the role of civil protection and humanitarian assistance . COM (2010) 600 DG ECHO**



## Addressing Natural Hazards/Disasters: 1. Policy Context – European level

### ECHO/Humanitarian aid & Civil protection :

#### **Framework for cooperation in disaster response, preparedness and prevention:**

#### **2. Prevention Framework**

- **Commission Communication- A Community Approach on the prevention of natural and man-made disasters (DG ENV/ECHO, COM 2009 82 final)**

**The Prevention Communication proposes to focus action at EU-level on :**

- \*Developing knowledge-based prevention policies**
- \*Linking actors and policies throughout the disaster management cycle**
- \*Improving the effectiveness of existing financial and legislative instruments**

- **Commission Staff working paper : Risk assessment and mapping guidelines for disaster management. SEC(2010)1626 DG ECHO**



## Addressing Natural Hazards/Disasters: 1. Policy Context – European level

### Regional /Cohesion Policy – territorial cooperation/

#### - Cooperation between regions/ support from the Structural funds:

e.g. Interreg IV C programme, Environment and risk prevention.

#### Sub-themes -Natural and technological risks, climate change- some examples

- supporting awareness-raising and emergency planning for populations located in very sensitive areas, such as heavily built-up basins, seismic areas, flooding prone areas, etc
- developing or coordinating existing observatories for a better knowledge of natural hazards
- development of strategies for minimising relevant natural and technological risks
- developing the formulation of tools, action plans and awareness-raising and capacity building for responding at the different levels on all relevant natural and technological risks
- developing measures to face and raise awareness on climate change and promotion of adaptation and mitigation policies
- developing strategies for preventing and reducing floods



# Addressing Natural Hazards/Disasters: 1. Policy Context – European level

## Environment Policy / Floods-Drought issues /

- **Directive 2007/60 on the assessment and management of floods . Goals : flood risk assessment, risk mapping and risk management plans (OJ L 288, 6.11.2007)**

-**Follow-up of the Communication on Water Scarcity and Droughts in the European Union COM (2007) 414 final, foreseen in 2012.**



# Addressing Natural Hazards/Disasters: 1. Policy Context – European level

## Climate Action:

### EU Adaptation Strategy:

### Disaster Risk Reduction is part of the adaptation strategies

Currently being developed and to be published in 2013, will comprise the following elements:

- **Enhancing the knowledgebase and widening access to information**
- **Mainstreaming adaptation into policies, strategies and programmes at EU level**
- **Support and facilitation for Member States, regions, cities and other stakeholders**
- **Capturing the potential of the market, market-based instruments and the private sector**





## Addressing Natural Hazards/Disasters: 1. Policy Context – European level

### EuropeAid development & cooperation:

- **Commission Communication- A new EU Strategy for supporting Disaster Risk Reduction in Developing Countries, (DG DEV, COM 2009 84 final)**

It aims at ensuring that the EU works more closely and more effectively together when supporting developing countries efforts for reducing the risk of disasters.

Action priorities:

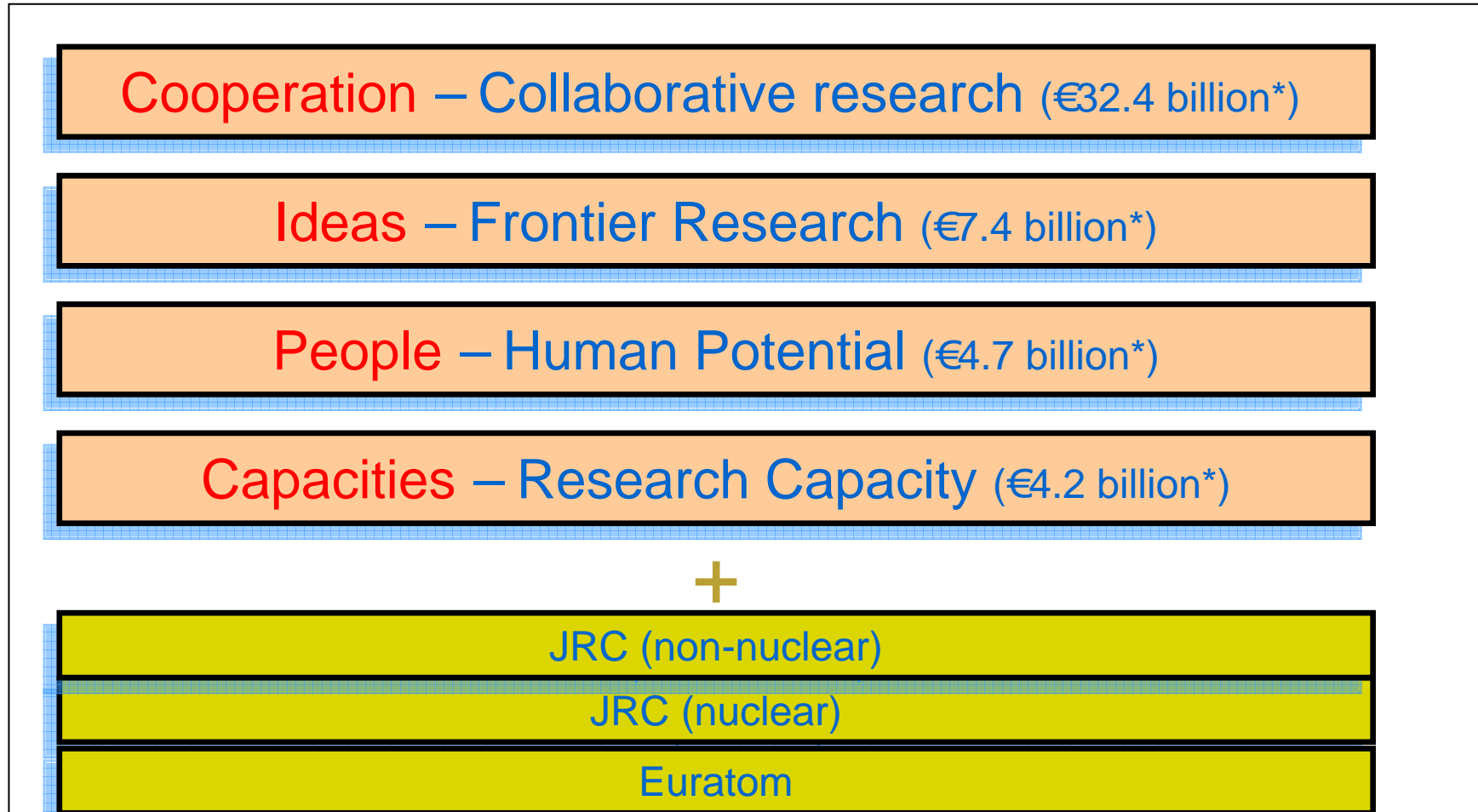
- ▶ strengthening of political dialogue with developing countries;
  - ▶ integration of disaster risk reduction into both EU and developing countries' policy and action, including EU support for national risk reduction investments;
  - ▶ development of regional plans,
- **Commission Staff working paper: Implementation plan of the EU Strategy for supporting disaster risk reduction in developing countries SEC(2011) 215 DG DEV**



# Addressing Natural Hazards/Disasters

## 2. Research activities

### European Framework Programme

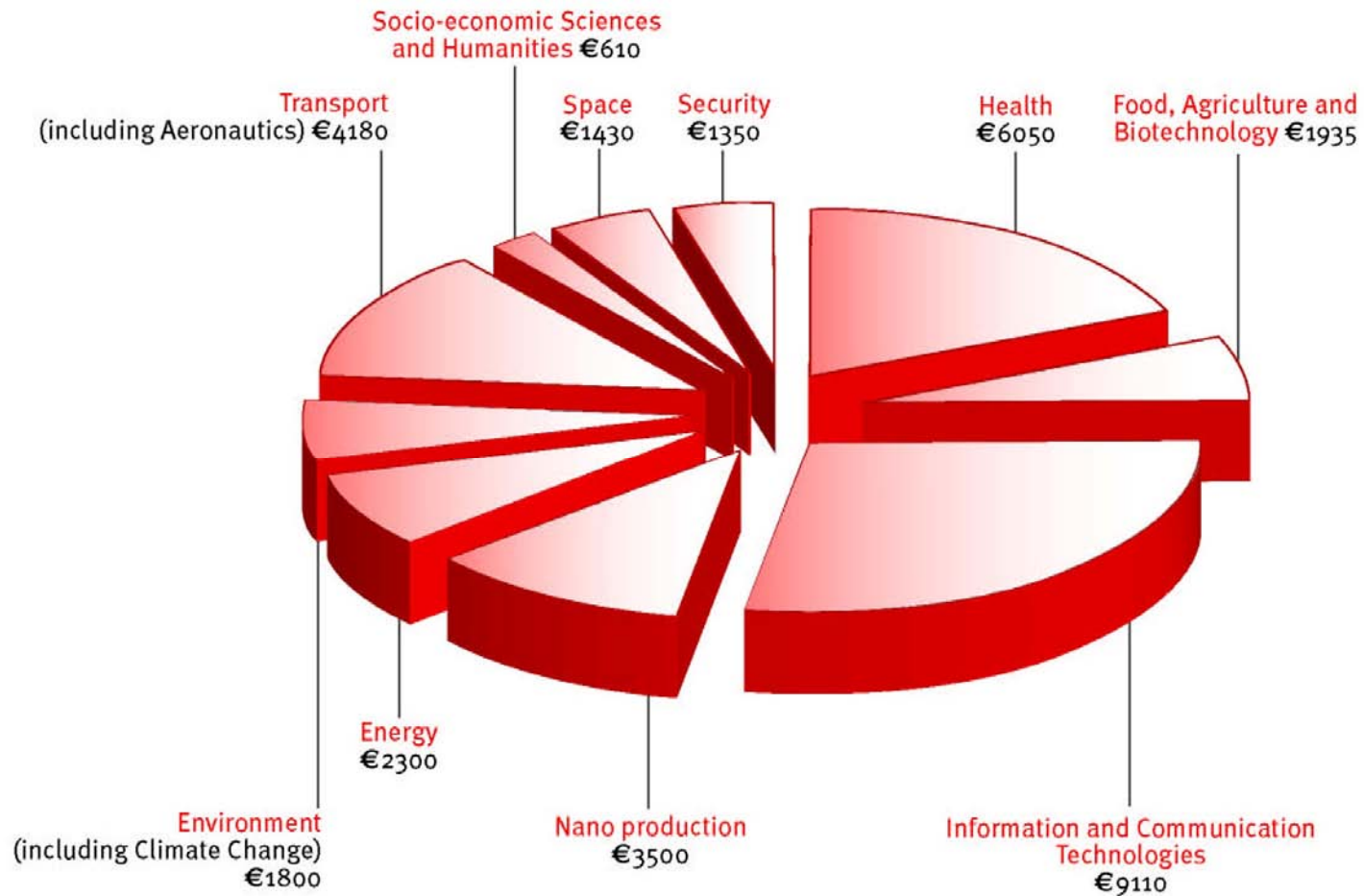


\*Draft figures





# 7th Framework Programme: Cooperation programme – Thematic areas (€ million)





## Addressing Natural Hazards/Disasters

### 2. Research activities - European Framework Programme

#### DG Research and Innovation

##### - Programme Environment (including climate change):

Pressures on Environment and Climate, Natural Hazards, Earth Observation (GEO), Environmental Technologies

##### - Programme Infrastructure (Existing infrastructures; new initiatives-ESFRI)

#### DG Information Society and Media

- **Information and Communication Technologies for the Environment** (research on ICT applications for crisis and emergency management (mainly FP6))

#### DG Enterprise and Industry

##### - Space and Security programme

GMES (global monitoring for Environment and Security)





## Addressing Natural Hazards: Environment research Programmes

- FP5 – Overall support (1998-2002) : 48 Mio €
- FP6 – Overall support (2002-2006) : 58,2 Mio €
- FP7- (2007) : 13 Mio
- FP7- (2008) : 14 Mio
- FP7- (2009) : 13 Mio
- FP7- (2010) : 11.5 Mio
- FP7- (2011) : 18 Mio
- FP7- (2012) : ?



## Main core 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



## ENV programme FP7 -Sub Activity Natural Hazards Main areas covered by the work programme calls for proposals

### Hazard assessment, triggering factors and forecasting:

- **2007** : -European storm risk (MICORE)
- **2008** : -Methodology and tools for earthquake hazards in Europe (SHARE)
- **2009** : -Forest fires in the context of climate and social changes (FUME)
- **2010** : -no call
- **2011** : -Towards real-time earthquake risk reduction (REAKT)

### Vulnerability assessment and Societal impacts

- **2007:** -Frame for better vulnerability assessment (MOVE; ENSURE)  
-Investigating Europe's risks from drought (XEROCHORE)
- **2008:** -Social perception, behaviour and response to risks (CapHazNet)
- **2009:** -Costs of natural hazards /Climate related (ConHaz)  
-Vulnerability of buildings, lifelines, networks, infrastructure related to earthquakes (Syner-G)
- **2010** : -Building a culture of risk prevention in Europe (Kulturisk)
- **2011** : -Building societal resilience to disasters in Europe (EMBRACE)  
-Vulnerability and increased drought in Europe



## ENV programme FP7 - Sub Activity - Natural Hazards

### Main areas covered by the work programme calls for proposals

#### Risks assessment and management

- **2007: -Assessment and management of volcanic threat (MIAVITA)**  
-Avalanche forecasting and risk mapping
- **2008: -Prediction of triggering and risk assessment for landslides (SAFELAND)**  
-Risk management for flash floods and debris flow (IMPRINTS)
- **2009: -Risk prevention and management of urban floods (CORFU)**
- **2010: -Early warning and drought risks in Africa (DEWFORA)**
- **2011: - Risk prevention and management before volcanic eruptions (VUELCO)**

#### Multi risk evaluation and mitigation

- **2007: -European multi-hazard database**
- **2008: -Coordinated research strategy between European and national levels**
- **2009: -no open call**
- **2010: -New methods for multi-hazard and multi-risk assessments (MATRIX)**  
-Social science, natural hazards and decision making process
- **2011: - Capacity building in natural hazards risks reduction (CATALYST)**





# Addressing Natural Hazards/Disasters

## 2. Research activities

### European Framework Programme

#### Examples of projects – Field seismic hazard assessment; engineering/Eurocode 8; systemic vulnerability/..

- The **SHARE** project (Seismic hazard assessment in Europe) will deliver measurable progress in all steps leading to a harmonized assessment of seismic hazard in the definition of engineering requirements, in the collection of input data, in procedures for hazard assessment, and in engineering applications ,
- The **SYNER-G** project, (systemic seismic vulnerability and risk analysis for buildings, lifeline networks and infrastructures) proposes to improve the European know-how and to propose a unified methodology for the vulnerability assessment and loss estimate at system level.
- The **SERIES** project (Seismic Engineering Research Infrastructures for European Synergies) will network all testing facilities and cooperate in non EU groups.





## Addressing Natural Hazards/Disasters 2. Research activities

### European Framework Programme

#### Examples of projects – Field Tsunami

- **The TRANSFER** project (Tsunami Risk and Strategies for the European Region) covered the whole Mediterranean region studying through case studies from the source origin and detection of the tsunami to the impacts on the coast including possible inundation maps and strategy for EWS.
- **NEAREST** – (Near Shore Sources of Tsunamis), worked on a pilot region of the gulf of Cadiz studied more in details the phenomena and tested an off shore buoy in the frame of a pre-early warning system.
- **The SCHEMA** GMES FP6 project (Scenarios for Hazard Emergencies Management), contributed to improve our understanding of tsunami impacts on the coast using earth observation and developed also some evacuation plans for test towns.
- **The DEWS** ITC FP6 project (Distant Early Warning Systems), building on the cooperation and results of the German-Indonesian Tsunami Early Warning System (GITEWS), focused specifically on developing an advanced interoperable tsunami early warning capacity in Indonesia which is now working.





# Addressing Natural Hazards/Disasters

## 2. Research activities

### European Framework Programme

#### Examples of projects – Field seismic risks/EWS..

- The FP6 **SAFER** (Seismic early warning for Europe) project enabled Europe to make significant progress in improving the scientific basis of earthquake early warning systems and their applications.
- The new project **REAKT** (Strategies and tools for real time Earthquake risk reduction) , including JMA will further develop early warning applications and real-time analysis in order to be able to further reduce the reaction time and improve the warning services
- The FP6 **NERIES** (network of research Infrastructures for EU seismology) improved e.g. access to databases, protocols & procedures, new tools to improve monitoring
- The new **NERA** project – the Network of European Research Infrastructures for earthquake risk assessment and mitigation will further integrates the key research infrastructures in Europe to monitor earthquakes and assess their hazard and risk, and combines expertise in observational and strong-motion seismology, modelling, geotechnical and earthquake engineering.





# Addressing Natural Hazards/Disasters

## 2. Research activities

### European Framework Programme

#### Example of a project – Climate change impacts -Africa

- The **CLUVA** Project aims to develop methods and knowledge to be applied to African cities to manage climate risks, to reduce vulnerabilities and to improve their coping capacity and resilience towards climate changes. The project will explore the issues of climate change vulnerability, resilience, risk management and adaptation in selected African cities.



## **New call – deadline 20 October 2011**

### **« Natural Hazards » Work programme 2012**

#### Challenge 6.4 Protecting citizens from environmental hazards

- **Improving the resilience of society to catastrophic natural hazards through new risk-management partnerships**
  - ▶ develop new probabilistic hazards and risk scenarios and improve the methodologies for pan-European risk assessment and for estimating disaster impacts
  - ▶ improve risk governance and management responses, with the key goal to improve or redefine the respective roles or possible forms of partnerships between the private sector (including the (re) insurance and finance sectors), the relevant authorities and stakeholders.
- **Long-term monitoring experiment in geologically active regions of Europe prone to natural hazards: the Supersite concept (GEO)**
  - ▶ seismic and volcanic reference areas



## Addressing Natural Hazards/Disasters European Framework Programme

### 3. Research related and pre-operational

#### DG Enterprise and Industry

- Global monitoring for Environment and Security- GMES Emergency response Service <http://www.emergencyresponse.eu/gmes/en/ref/home.html> intends to play a role in the European capacity to respond to emergency situations. It is supported by several ongoing projects funded under FP6/FP7 as the SAFER project Services and Applications for Emergency response that has a budget of 26 Mio € and runs from 2009 to end of 2012.

#### JRC Joint research centre Ispra

-Develops research and applications in support to EC policies e.g. MIC. It has developed a common web-based platform

“ Global disaster and alert coordination system GDACS : [www.gdacs.org](http://www.gdacs.org) with UN to quickly estimate hazards events and give alerts

-Standard setting for structural design codes for buildings in the JRC-ELSA (European Laboratory for Structural Assessments of the Joint Research Centre) Active collaboration with the Building Research Institute of the Japanese Ministry for Construction located in Tsukuba

<http://elsa.jrc.ec.europa.eu/>.



## More information :

**-DG ECHO/Humanitarian aid & Civil protection :**

[http://ec.europa.eu/echo/civil\\_protection/civil/index.htm](http://ec.europa.eu/echo/civil_protection/civil/index.htm)

**-DG Aidco Development Cooperation**

[http://ec.europa.eu/europeaid/index\\_en.htm](http://ec.europa.eu/europeaid/index_en.htm)

**-DG Research and Innovation**

**Calls:**

[http://ec.europa.eu/research/participants/portal/page/fp7\\_calls](http://ec.europa.eu/research/participants/portal/page/fp7_calls)

**ENV/ natural hazards research:**

[http://ec.europa.eu/research/environment/index\\_en.cfm?pg=hazards](http://ec.europa.eu/research/environment/index_en.cfm?pg=hazards)

**Infrastructures:**

[http://ec.europa.eu/research/infrastructures/index\\_en.cfm?pg=projects](http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=projects)

**New infrastructures :** <http://www.epos-eu.org/> )

**-DG REGIO/Interreg :**

<http://www.interreg4c.net/contact.html>

**-DG ENV /Flood-drought:**

[http://ec.europa.eu/environment/water/flood\\_risk/index.htm](http://ec.europa.eu/environment/water/flood_risk/index.htm)

**-DG Enterprise and Industry:GMES**

[http://ec.europa.eu/enterprise/policies/space/gmes/index\\_en.htm](http://ec.europa.eu/enterprise/policies/space/gmes/index_en.htm)

**DG Climate Action:**

<http://ec.europa.eu/clima/sites/change>



# Thank you

