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# **FP7 Cooperation' Programme**

## **Theme : Environment (including climate change)**

### **WP2012- Earth observation topics**

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“Environment , Including Climate Change”- 7th FP





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## State of play

Environment research represents 6% (1.89billion€) of the total funding of the Cooperation Programme with the main aim to advance knowledge and to develop technologies, services and tools for sustainable management of the natural and human environment and its resources. On an annual basis, and based on the advice provided by the Advisory Group (AG) an overarching theme is selected and reflected across the topics under the 11 sub-activities.



**New key drivers for the EU environment research are those presented by the Europe 2020 Strategy and the Innovation Union, including the structural and technological innovation changes required to move to a low carbon, resource efficient and climate resilient economy by 2050.**

**The target for the last two years of FP7 will be to move towards a challenge driven approach with broader topic areas linking research and innovation.**



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**The AG proposed the overarching theme "Transformative and Responsible Innovation" for the next environment work programme(s).**

Reflected are also priorities suggested through regular contacts with partner DGs, such as DG ENV, MARE, SANCO and CLIMA.

**Research agendas of relevant International Programmes (e.g. **GEOSS**, WCRP, DIVERSITAS etc) have been considered.**





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One of the Specific objectives for the Environment and climate research is:

Promote and facilitate knowledge transfer, assessment, uptake and exploitation of scientific data and results, in particular through demonstration and delivery of innovative tools and services such as earth observation systems (Innovation Union)





## Implementation and approach for cross-cutting issues

- International collaboration plays a crucial role for the environment research (9% of the participants are from ICPC countries) in the spirit of "global problems – global solutions". **In 2012, focus will be put on challenges such as water** (already identified for India in cooperation with SFIC), **climate, land and sea use, and hazards mainly through general opening. In addition, capacity building activities in developing countries will be promoted through GEO initiatives.**



## Indicative priorities for WP2012

### • **Sustainable use and management of land and seas**

Natural resources (terrestrial and marine) and ecosystem services constitute the natural capital that supports economies, societies and individual well-being. Good governance requires a quantification of the interactions and trade-offs among ecosystem services and understanding of how biodiversity underpins ecosystem functions and services across time, scales and sectors.

**In WP2012, research will focus on developing innovative conceptual frameworks, methods and coherent, shared protocols to provide consistent datasets and knowledge at different scales e.g. by extending the European Biodiversity Observation Network to the global scale within the GEO framework.**

Research will develop innovative approaches to value biodiversity and ecosystem services and to develop public goods and sustainable economic activities from them.

The research will benefit landscape users (in particular forest industry, water managers and users, agriculture and agro-industry, urban planners, risk managers) as well as sea area users. It will contribute to maintaining and restoring the ecosystem capacity to deliver products and services required by industry and the society. It will also contribute to set-up multi-purpose "green infrastructures" based upon landscape ecology. **In relation to the marine environment, research is specifically needed to assess and monitor the environmental status of marine waters (Good Environment Status) and to support an ecosystem-based approach to the management of Europe's marine waters**



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**Indicative budget range 40-60M€ for this priority**

Involving sub-activities: 6.2.1, 6.2.2, 6.4.1, 6.4.2



## **•Protecting citizens from environmental hazards**

**The core challenge for the remaining period of FP7 is to provide research support aiming at risk reduction from natural and man-made hazards, including extreme and sudden large events. This will be achieved by integrating science, innovative technologies and earth observation systems in order to better manage environmental hazards and to reduce its negative impacts on human and ecosystem health.**



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European research will help society to improve its resilience, to reduce its vulnerability and be better prepared to respond to the threats by promoting an integrated and interdisciplinary approach, bringing natural and social sciences closer and by contributing to the international effort in this field. **In WP2012, research will focus on emerging hydro-meteorological extreme events and their potential impacts and on geosciences risks as tsunamis.**





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The driving forces will be prevention, better risk assessment and management taking on board new technologies and innovative concepts (e.g. scientific observatories in geologically active regions) and strategies to increase our capacity to detect, forecast, predict and warn against hazards and their impacts. Furthermore, **research will be conducted to be better prepared in crisis situations (e.g. volcanic ash, large floods) in order to prevent negative social, economic, environmental and human health effects.**





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**Indicative budget range 30-50M€ for this priority**

Involving sub-activities: 6.1.3, 6.1.2, 6.2.1, **6.4.1**



- **Mobilizing environmental knowledge for policy, industry and society**

Specific activities will be launched to engage European companies and SMEs in promoting market potential and socio-economic aspects of environmental innovation through demonstration activities. **Novel earth observation applications such as "global citizen's observatory"** (an integrated network of in-situ observations to deliver environmental data) **will be supported.**



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Finally, efforts will also be devoted to explore and promote further open access to environmental research results and data.

**Indicative budget range 30-50M€ for this priority**

Involving sub-activities: 6.5.1, 6.4.1, 6.4.2, 6.3.1, 6.3.3



## WP-2012

### **Challenge 6.4 Protecting citizens from environmental hazards**

Indicative topics:

***ENV.2012.6.4-1 Improving the resilience of society to catastrophic events through new risk-management partnerships***

**Over half of the world's population lives in regions highly exposed to natural hazards and by risks of catastrophic events. Extreme events linked to climate change could make matters even worse.**

**The research challenge is now to strengthen the economic and societal resilience to those disasters through appropriate risk assessment, new management schemes that will improve our preparedness and prevention capacity in order to better protect lives and assets thus reducing human and economic losses.**

Climate change is expected to induce a modification in the frequency, severity and duration of extreme events, of hydro-meteorological hazards such as floods, storms and surges, avalanches, droughts and heat waves.



It may modify the vulnerability and change the risk situation for society over time. **Research should be , in a multidisciplinary context, aim to develop new ways to assess probability distributions for extreme events, and to assess their risks, their impacts leading to possible disasters, and to design improved risk management responses.** On the other hand, in the field of geo-hazards (e.g. tsunami, volcanic eruption, large earthquakes) characterized by low probability - high consequence events, Europe is also at threat of several catastrophic events which can hit densely populated urban areas or several sectors of the national and European economy as experienced during the 2010 Icelandic volcanic ash crisis.



There is hence a need for research to assess the probabilities of such events, to improve forecasting at different time scales and to work out risks scenarios at European level including economic loss scenarios. **The core of the research should be on governance and new risk management concepts and practices.** It will be important to improve or redefine the respective roles or partnerships of the private sector (including the insurance and finance sectors), the governments and international entities, the key stakeholders. Taking into account barriers and conflicting perceptions **it is important to explore and design new private or public non structural instruments, policies, schemes, and mitigation options for risks reduction and risk financing of such catastrophic events.**



## Funding scheme: Collaborative Projects

Additional information: International collaboration capitalising on similar experiences can be envisaged; partnership with relevant private sector and key actors in risk management is essential. Proposals can address partly or fully the topic. Expected impacts: Contribution to the elaboration of a new risk management governance approach. Support to EU relevant policies and to the UN Risk Reduction Hyogo framework for action. **Reduction of risks of dramatic economic losses through innovative public-private partnerships on financial and insurance schemes.**

**Call: ENV-2012-** two stages (several projects expected to be funded) **Indicative budget: 15M€ for these topics**



## **ENV.2012.6.4-2 Long-term monitoring experiment in geologically active regions of Europe prone to natural hazards: the Supersite concept**

At world level, several initiatives have been taken to monitor and study, in the frame of the "Supersite" international and intergovernmental effort, some key regions or areas prone to hazards. **Europe wants to contribute to this effort in selecting and studying such site(s) on land prone to volcanic, seismic, and landslide hazards.**



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**The project(s) will develop the next generation of geo-hazards monitoring/observing systems, and contribute to establishing comprehensive natural hazards observatories through a cross-cutting approach.**

The projects should provide models of ground motion and deformation and necessary information at the "Supersites" to mitigate and improve the preparedness of geological disasters.





The monitoring of the 'Supersites' should be conducted through a fully integrated conceptual approach based on collaboration with existing monitoring networks and international initiatives, developing new instrumentation such as in-situ sensors, aggregating space and ground-based observations, (including from subsurface), and geophysical monitoring. **The development of novel monitoring systems and new instrumentation should be conducted in associating closely the relevant industrial sector and SMEs.** The selected project(s) should run a monitoring pilot phase as a European supersite demonstrator.



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The choice of the geo-hazard super site(s) needs to be carefully justified enabling precise geophysical measurements prior to, during and following geohazard events. **The projects should provide focal points for a large geographical region, where all building blocks of a value chain from observations to end users can be linked together and applied to the phases of the risk management cycle relevant for this region.**





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## Funding scheme: Collaborative projects

Additional information: The projects should collaborate at international level with other supersites contribute building a successful Global Earth Observation System of Systems (GEOSS) through making a significant European contribution to the GEO 2012-2015 Work Plan. **Expected impacts:** **Increased European technical know-how for the monitoring of Geological disaster and contribution to the development of the relevant European industrial sector (e.g. space applications, in situ sensors, adapted communication devices).** **Improved use of observations and related information to inform policies, decisions and actions associated with disaster preparedness and mitigation.**



**More effective access to observations and related information to facilitate warning, response and recovery to disasters. Increased communication and coordination between national, regional and global communities in support of disaster risk reduction, including clarification of roles and responsibilities and improved resources management.**

Call: ENV-2012- two stage (several projects expected to be funded)

Indicative budget: **12M€ for these topics**



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## **Challenge 6.5 Mobilising environmental knowledge for policy, industry and society**

Indicative topics:

**ENV.2012.6.5-1: Developing community-based environmental monitoring and information systems using innovative and novel earth observation applications.**



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**The objective of proposals submitted under this topic should therefore be to develop "citizens' observatories", that is community-based environmental monitoring, data collection, interpretation and information delivery systems that use innovative earth observation technologies to generate new and original applications, thereby strengthening in situ environmental monitoring capabilities. This will require new and highly innovative monitoring technologies,**



## **Funding scheme: Collaborative Projects**

**Expected impacts: Citizens and citizen's associations should be empowered so that they become increasingly active in monitoring environmental quality and contributing to the co-operative planning and sustainable management of natural resources, for example, in areas such as: information for civil protection agencies in case of wide-scale flooding; air quality and noise levels in cities; the identification of flora, birds and wildlife, their habitats and migration paths; illegal dumping of hazardous materials, etc..**



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The provision of decision models for decision-makers should enhance connections to governance and global policy objectives.

Call: ENV-2012- two stages (several projects expected to be funded) Indicative budget: **20M€ for this topics**





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Thank you for  
the attention

