

# Improving European society’s resilience to climatic variations

The FP7 EUPORIAS project is working with stakeholders to ensure society can manage risks and opportunities arising from climate variability

There is a growing and urgent need to make European society more resilient to hydro-meteorological hazards while at the same time improving the management of risks and opportunities arising from climate variability and change. To better serve society, we need to improve our understanding of users’ needs, our understanding of climate and our ability to predict its change on all time scales. We also need to improve accessibility, quality and usefulness of climate services. Such challenges have been recognised by governments, scientists and decision makers worldwide and have led to the creation of the Global Framework for Climate Services under the leadership of several United Nations agencies.

Many countries are planning to develop and deliver climate services in an attempt to better meet society’s needs. A climate service can be considered as the provision of climate information in such a way as to assist decision making. The service needs to be based on scientifically credible information and expertise, have appropriate engagement from users and providers, have an effective access mechanism and meet the needs of the users.

## EUPORIAS

The European Commission has commissioned a major four-year project – European Provision Of Regional Impacts Assessment on Seasonal and decadal timescales (EUPORIAS) – to develop prototype climate services operating on a seasonal to decadal timescale. The project will have many social and economic benefits for regional and national authorities and businesses. Benefits include reducing the impact of climate-related hazards



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on key sectors (for example agriculture, transport, energy, insurance, water and tourism), prepare and stimulate a market for climate-dependent products and services, and increase the competitiveness of European businesses.

This project is co-ordinated by the UK Met Office Hadley Centre in conjunction with a consortium of 23 other organisations representing world-class European climate research and climate service centres; expertise in impact assessments and seasonal predictions; two United Nations agencies; specialists in new media; and commercial companies in climate-vulnerable sectors. The consortium has strong links with end user organisations who will be involved in the project through a stakeholder group and stakeholder activities.

Two companion projects, also funded by the EC, are linked to EUPORIAS. The North Atlantic CLIMate (NACLIM) project will use observations in the North Atlantic and Arctic oceans to improve the initialisation of climate forecasts and our understanding of predictability over Europe. The other, called Seasonal-to-decadal climate Prediction for the improvement of European Climate Services (SPECS) will deliver a new generation of European climate forecast systems and tools to produce improved local climate information on seasonal to decadal timescales; and improve our understanding of predictability on these timescales.

## The importance of stakeholders

The needs of the users form the basis for the project’s research and development activities. Close engagement with stakeholders is essential to ensure predictions provide user-relevant parameters, such as agricultural productivity, river runoff and



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hydropower for the coming seasons and years. Interaction with the users is also essential to ensure that the underpinning climate science is developed in a direction that is more relevant to them.

The initial activities will make assessments of sector specific vulnerability and users' needs. Then research will be carried out to ensure forecast information is relevant to decision makers. EUPORIAS will also look at how to downscale the forecasts to spatial scales of use to users, and development of models to produce impact-relevant predictions. In parallel, research will be undertaken to quantify uncertainty in the impact models and explore ways of communicating levels of confidence. In its final stage, building on all of the above, EUPORIAS will develop a few semi-operational prototype climate services which will be used as demonstration tools. The project will also conduct research into the use of climate information in decision making processes, develop delivery tools, and provide an assessment of the viability of climate services as business opportunities.

Tools will be created with the involvement of climate service developers, providers and users. Such tools should allow industries to assess the impacts on their operations of changes in weather events. For example, what would be the impact of flooding, strong winds, heat waves or droughts on food and wine producers, on hydropower facilities, on health services, and on vital transport infrastructure such as hub airports? The tools, providing guidance months and seasons in advance, will aim to improve preparedness for potential high-impact events, such as through planning staffing, revising infrastructure, modifying investment plans, or reviewing contingency plans. In turn, this will hopefully help reduce the associated costs of emergency interventions.

**Initial activity – user needs**

The first major milestone of the project has been successfully running a workshop with our stakeholders. About 50 participants from across Europe representing ten different sectors participated in the workshop. The aims of the workshop were to understand: how seasonal and decadal information is currently used for decision making in Europe; and what the main gaps are in the current capability that limits the usefulness of the climate



information. Analysis of the information presented at the workshop is underway, but some early headlines have emerged as follows.

With a few noticeable exceptions, most sectors require forecasts in spring for the following summer and in autumn for the following winter. A priority identified by the vast majority of the participants is a need for sector specific education and training on the use and interpretation of climate information. Promoting the direct interaction between climate experts and representatives of specific sectors is an important recommendation emerging from the workshop. Finally while decision-makers do often require information to be downscaled to a regional or local level, we found that most users feel that improving the overall skill in the predictions is more important.

Following on from this first workshop, we have just held a workshop to elicit and capture the knowledge of climate service providers working at the interface between climate science and users/decision makers to further understand the needs for climate information on seasonal to decadal timescales across European sectors. This second workshop covered topics such as learning from other projects, exploring the range and experiences of users, understanding barriers and limitations, and understanding the chain of providing climate information. EUPORIAS is financed by the European Commission through the 7th Framework Programme for Research; grant agreement 308291.




**EUPORIAS**

**Met Office  
Hadley Centre**

**Dr Chris Hewitt, Project Co-ordinator  
Dr Carlo Buontempo, Science Co-ordinator  
Paula Newton, Project Manager  
Met Office Hadley Centre**

**Tel: +44 (0)1392 884520**

**management@project.euporias.eu  
www.euporias.eu  
Twitter: @Euporias**

