

## KEY OBJECTIVES

1. To develop and deliver a reliable and trusted impact prediction system for a few (e.g. two or three) semi-operational prototypes. These will provide working examples of 'end-to-end' climate-to-impacts-to-decision-making services operating on the Seasonal and Decadal (S2D) timescales.
2. To assess and document key knowledge gaps and vulnerabilities of important sectors (e.g. Water, Energy, Transport, Food security, Health, etc.) along with the needs of specific users within these sectors, through close collaboration with project stakeholders.
3. To develop a set of standard tools and techniques tailored to the needs of stakeholders for calibrating, downscaling, and modelling sector-specific impacts on S2D timescales.
4. To develop a knowledge-sharing protocol necessary to promote the use of these technologies.
5. To assess and document the current marketability of climate services in Europe.

## DO YOU WANT TO BECOME A STAKEHOLDER?

One of the keys to the success of this project is the early establishment of a strong stakeholder board. There will be two stakeholder meetings organised and funded by EUPORIAS; one at the beginning and one at the end of the four years of the project. Should you be interested in becoming a project stakeholder, please contact us – we will be happy to explore the possibilities with you.

*"To be useful, climate information must be tailored to meet the needs of users."*

*"Existing climate services are not well focused on user needs and the level of interaction between providers and users of climate services is inadequate. Users need access to expert advice and support to help them select and properly apply climate information. Climate services often do not reach "the last mile", to the people who need them most, particularly at the community level in developing and least developed countries"*

WMO High Level Taskforce for the Global Framework for Climate Services

### Project Members

**Denmark:** DHI

**France:** Tourisme Transports Territoires Environnement Conseil, Météo-France, Electricité De France

**Germany:** Deutscher Wetterdienst

**International Organisations:** World Health Organization - European Centre for Environment and Health, World Food Programme

**Italy:** Agenzia nazionale per le nuove tecnologie, L'energia e lo sviluppo economico sostenibile

**The Netherlands:** Wageningen Universiteit, Koninklijk Nederlands Meteorologisch Instituut

**Portugal:** Universidade de Lisboa, Instituto Português do Mar e da Atmosfera, I.P.

**Romania:** Administratia Nationala de Meteorologie R.A.

**Spain:** Universidad de Cantabria, Predictia Intelligent Data Solutions SL, Agencia Estatal de Meteorología, Institut Català de Ciències del Clima, Cetaqua Centro Tecnológico del Agua Fundación Privada

**Sweden:** Sveriges meteorologiska och hydrologiska Institut, Lunds Universitet

**Switzerland:** Federal Office of Meteorology and Climatology

**UK:** Met Office, University of Leeds, FutureEverything CIC

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EUPORIAS



# EUPORIAS

European Provision of Regional Impacts Assessment on Seasonal and decadal timescales.



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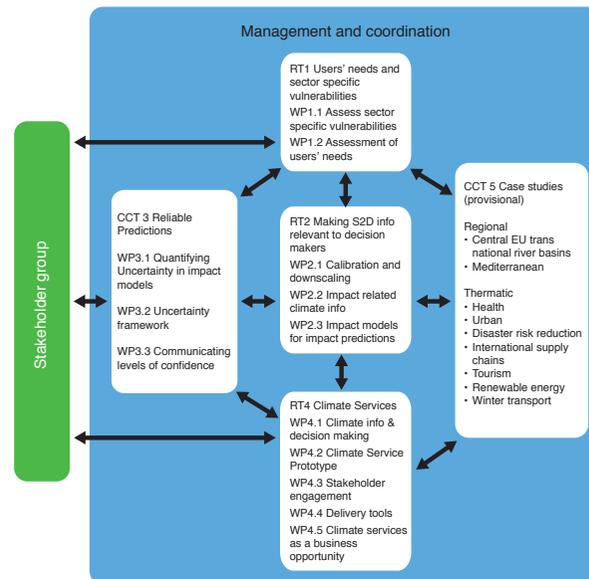
## BACKGROUND

While societies have flourished or collapsed depending on their ability to adapt to changes in climate, it is only recently that science and technology have been able to provide useful insights into future climate. Seasonal to decadal (S2D) forecasts now hold the potential to be of great value to a wide range of relevant decision-making, wherever the outcomes are heavily influenced by climate variability. Recent advances in our understanding of and ability to forecast climate variability and climate change have brought us to the point where skilful predictions are beginning to be made routinely. Access to credible forecast data, supported by informed guidance from the scientific community, could lead to significant advances in society's ability to effectively prepare for, and manage, climate-related risks.

Despite its potential value in informing European business and adaptation strategy, such forecast information is currently under-exploited. Clear opportunities therefore exist to develop new and improved methodologies; make use of the emerging predictive capabilities in climate science; and, more importantly, to engage with potential users of such predictions in developing tools to extract useful and useable information tailored to the needs of specific sectors.

## OUR VISION

Our vision is that by developing end-to-end impact prediction services, operating on S2D timescales, and clearly demonstrating their value in informing decision-making, we will stimulate a market for these new tools. In doing so, we will increase the competitiveness of EU businesses, and the ability of EU regional and national authorities to make effective decisions in climate-sensitive sectors.



## SCIENCE PLAN

The lack of well-accepted methods for relating the uncertainty of S2D forecasts to decisions-relevant variables constitutes one important factor limiting the uptake of these technologies. The reasons for this may be "poor" forecast skill or the decision-makers' tendency to act in a risk-averse manner, but it can also be attributed to difficulties in integrating forecasts into existing decision support systems, and to the lack of focus on specific user needs. To date, the majority of research efforts have focused on improving the underlying

prediction systems, rather than on the usability of the outputs in practical applications.

EUPORIAS will maximize the usefulness of S2D forecasts by approaching the issue starting from the users' needs and using this information to inform the development of impact forecasting systems. This will ensure predictions provide user-relevant parameters, such as agricultural productivity, river runoff or hydropower for the coming seasons and years. Improvements made on the prediction of these impact parameters are likely to have a direct positive impact on the overall performance of the prediction system given that some of the S2D models explicitly account for some of these impact processes and their feedbacks. EUPORIAS will provide high-resolution climate impact and vulnerability assessments in Europe.

Furthermore EUPORIAS will provide an assessment of the whole uncertainty chain in impact predictions on a S2D timescale. Such a systematic assessment has never been conducted before.

For the impact models various land surface variables (e.g. vegetation state, soil moisture, lake levels) are at least as important as the observations of sea-surface temperature in climate forecasting.

“It is your human environment that makes climate”

Mark Twain