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Enabling Climate Information Services for Europe - ECLISE



Objectives

The overall objective of the EU funded project ECLISE is to take the first step towards providing Climate Service at a European level. The approach of this pan-European effort is to conduct 26 case studies in which researchers closely cooperate with users of climate information to develop and demonstrate local climate services to support climate adaptation policies.

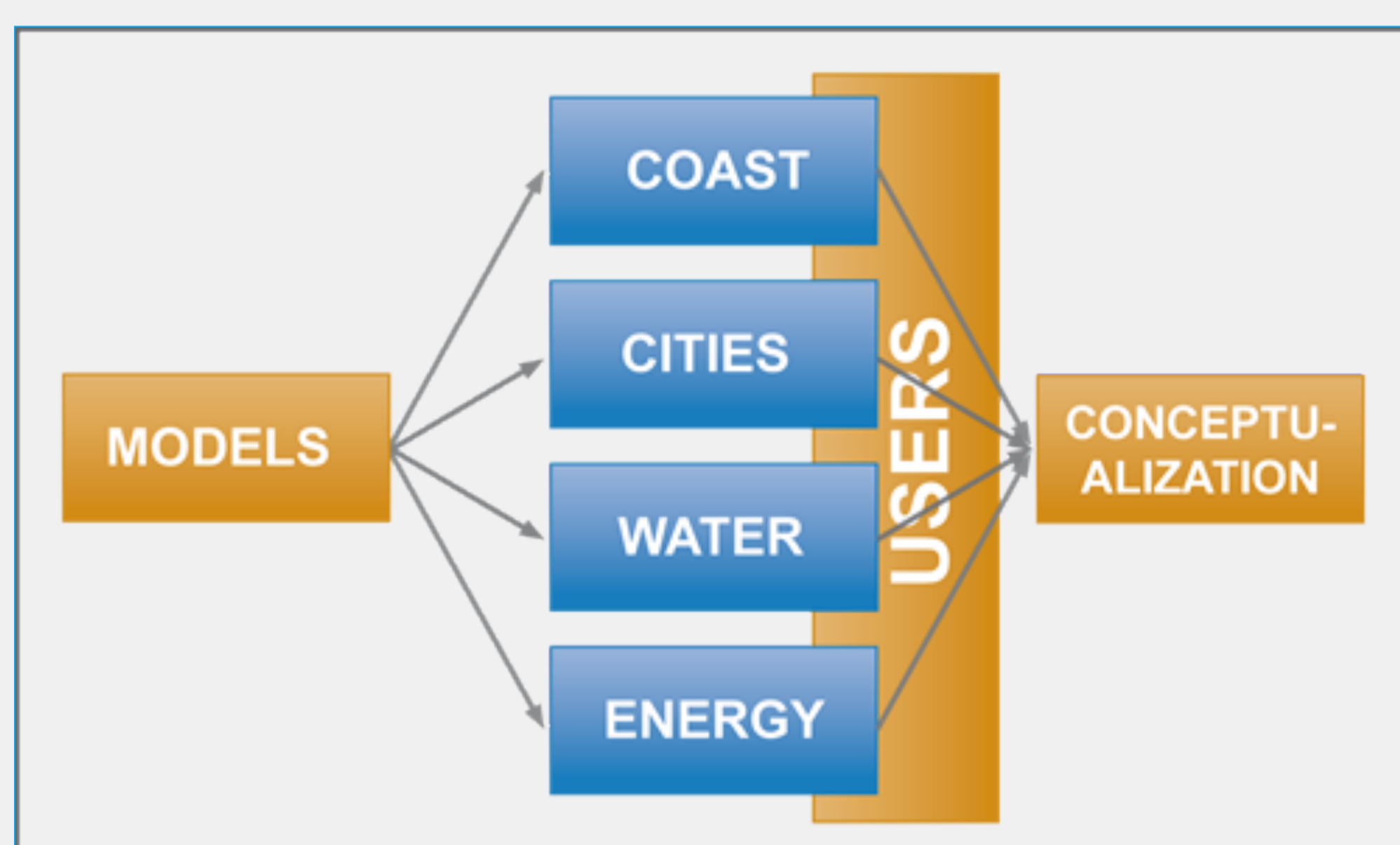


Figure 1: Concept of the ECLISE project. The approach reflects the flow of information of a Climate Service including climate modelling, impact modelling and implementation of simulations into the decision making process on adaptation measures development.

Goals

- Take a first step towards realization of a European Climate Service, addressing climate information needs of the EU and its member states.
- Capitalize on previous research projects and bring together European climate research expertise and the needs of public and private organizations on future climate information.
- make concrete demonstrations of the utility of these services in support of local climate adaptation policies.
- provide and outline and proof of concept for future European-wide Climate Services.

Non-hydrostatic modelling for ECLISE case studies

High resolution regional climate modelling will be conducted in two case study regions to meet the needs of local stakeholders. The information need to be tailored to the users requirements in order to provide information on future climate changes on local scales that is directly applicable within the decision making process.

For the two case study regions, the Crete island^(*) and the northern coast of Great Britain, weather situations will be identified that can be expected to generate similar precipitation and wind extremes in both the control period and in the future time period. This episodes will be downscaled to a spatial resolution of about 3 km.

The high resolution regional climate models (RCM) will be driven at the boundaries by output from pan-European RCM integrations, that have in turn be driven by CMIP5 global climate model simulations.

In addition ERA-Interim driven EURO-CORDEX (10km resolution) simulations will be used to drive the high resolution RCM simulations for present climate, to ensure the validity and applicability of the non-hydrostatic (NH) version of the RCM REMO as a downscaling tool.

^(*) Jointly with the EU-FP7 Project COMBINE – The Mediterranean Case

Approach

ECLISE focuses on climate-vulnerable regions in Europe, and analyses four sectorial levels within case studies:



Energy: Investigation of how changing climate will broadly impact on different sources of energy production and on energy demand. Analysis of how changing climate will impact on detailed operations of different sources of energy production.

Cities: A number of typical urban climate issues will be studied: precipitation and temperature extremes, flood risks and wind climate.

Water: Analysis of future water availability, flood and landslide risks

Coasts: Provision of coastal case studies in developing consistent meteorological/oceanographic data sets.

Climate statistics from the NH-RCM simulations will be compared to the equivalent statistics from the driving, parent RCM and improvements resulting from increased resolution documented. The output of the NH-RCMs will although be used in further studies in the ECLISE project for risk assessment.

Case study region Crete^(*)

