An interoperable research data infrastructure to support climate services development

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Accessibility and availability, re-use and re-distribution of scientific data are prerequisites to build climate services across Europe. In the framework of "European Research and Innovation Roadmap for Climate Services" the research community is called to respond to a new challenge to produce raw data, and also processed information to provide European climate services with high quality and scientifically proved data.

Prerequisites for this challenge is the development of infrastructures that ensure access, management and preservation of data, technical support for a coordinated and harmonious management of data that, in the framework of Open Data Policies, should encourages the use of trans disciplinary approach and collaboration.

In this perspective the Institute of Biometeorology - CNR, aiming at contributing to the sharing and integration of research data, has developed a research data infrastructure to support the scientific activities carried out in several research projects at national and international level. The availability of structured raw data as such as customized information pave the way for building a climate services purveyor to support adaptation, mitigation and risk management.

The proposed architecture uses open source tools to ensure sustainability in the development and deployment of web applications with geographic features and custom analysis, as requested by the climate services under development.

The spatial data infrastructure components are organized in typical client-server architecture and interact from data provider download data process to the representation of the results to the end-users.

The Web Application enables to view and analyse the data stored in the GeoDB. The interface is designed following Internet browsers specifications allowing the visualization of collected data in different formats (tabular, chart and geographic map). The services for the dissemination of geo-referenced information, adopt the OGC specifications and standards. The work is a bottom-up collaborative initiative between different research units that embrace an approach to research and innovation based on co-design, co-development and co-evaluation of Climate Services.