Climate4impact: Enhance usage of research data and support researchers with climate analysis.

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The aim of climate4impact (C4I) is to enhance the use of research data, to support researchers with analytics and to support other climate portals. It is currently under development within the European Project IS-ENES3 and builds on previous developments from IS-ENES2, CLIPC and C3S-Magic. C4I utilizes the globally distributed ESGF web services as data source, it uses ESGF search, Opendap and Thredds catalogs. C4I offers web interfaces for searching, visualizing, analyzing, processing and downloading (climate) datasets and is targeted to climate impact researchers. As the climate impact community is very broad, the focus is mainly on the scientific impact community. This work has resulted in the ENES portal interface for climate impact communities and can be visited at https://climate4impact.eu.

Dedicated wizards for processing of climate indices are developed in close collaboration with users. Processing services include climate indicator calculations, country based statistics and polygon extraction. C4I makes use of the DKRZ Birdhouse framework, which is an extendable and modular processing framework based on PyWPS. Data is obtained from various ESGF nodes using secure OpenDAP. C4I provides a personal basket where users can upload their own data and do research with the provided tools. The basket supports scientific data formats like NetCDF, GeoJSON and CSV. The basket has an access token mechanism to make data sharing with others and command line access to web services easier. Processing results become available in a personal basket. Datasets stored in the basket can be visualized and used in follow up processing tasks. The orchestration of security, basket and services is achieved using the ADAGUC-services framework, offering endpoints of Web Processing Services, Web Map and Web Coverage services. The software is open, reusable, modular and packaged. Components are available via docker containers to enable easy re-use.

In the IS-ENES3 project, the web portal will be redesigned, building on experience gained during the previous projects. The next version of the portal will be built using the React framework, which allows for creating large web applications which can change data, without reloading the page. The main purpose of React is to be fast, scalable, and simple. This phase provides opportunities for users to provide another round of feedback. The climate analytics capabilities, the provided open source tools and the redesign plans are detailed in this presentation.