****User requirements for climate data and impact indicators: Summary[[1]](#footnote-1)**

***CLIPC: Europe’s CLimate Information Portal for Copernicus and indicator toolbox***

CLIPC is one of the projects preparing for an operational Copernicus[[2]](#footnote-2) Climate Change Service. Climate data are diverse and available from many sources. CLIPC will improve access to climate information of direct relevance to a wide variety of users in Europe, including climate scientists, impact researchers, intermediary organizations and societal end users (e.g. policy makers, NGOs, private sector decision makers). CLIPC climate information will include data from satellite and in-situ observations, climate models and re-analyses, but also transformed data products to enable impacts assessments, and climate change impact indicators. The platform will focus on datasets on climate variability on decadal to centennial time scales from observed and projected climate change data sources in Europe. It will also provide an impact indicator toolbox to generate, compare and rank key indicators.

To create a well-functioning, user-oriented climate information portal, detailed knowledge of user requirements and regular feedback from users on prototypes of the portal is essential. Therefore CLIPC invited users to indicate their requirements through an online survey and semi-structured interviews. This summary briefly describes the outcomes of these activities carried out so far. The collected user requirements informed the preliminary portal design which will be discussed at the user requirements workshop of February 3, 2015.

***Online survey***

An online survey was developed to collect general information about the use of climate data and impact indicators, portals most frequently used, methods and reasons for data retrieval and users’ opinion on strong and weak points of existing portals. The survey also aimed to find out if and in what way users were willing to participate in the further development of the CLIPC portal and indicator toolbox. A total number of 90 respondents filled in the survey. Although each user category has its own specific requirements for a climate information portal, ‘free and open access’ is considered an important portal feature by all (Table 1).

Table 1: Top features for climate information portals and indicator toolbox per user category

|  |  |
| --- | --- |
| **User type** | **Top features ranked as very important** |
| **Climate scientist** | Free open access  Availability and quality of metadata |
| **Impact researcher** | Free open access  Accessibility of data  Information on uncertainty |
| **Intermediary/**  **boundary organisation** | Free open access  Explanations of climate data and climate impact indicators  Accessibility of data |
| **Societal end user** | Usage of understandable language  Diversity of subjects  Free open access |

***Semi-structured interviews: requirements and challenges for the CLIPC portal***

The interviews had a qualitative character and aimed to deepen the understanding of the results from the online survey. 25 people were interviewed of which eight climate scientists, eight impact researchers, four from intermediary organizations and two societal end users.

***Data:*** The respondents required different types of data including (raw) model data (long-term projections, seasonal predictions and scenarios), observational (ground and satellite, historical) data, and processed data. There is a particular need for both ground and satellite data as existing portals do not adequately offer these data. For all data, it was mentioned that **extreme values** are needed, rather than only means. The need for **standardization** (e.g. formats) and **harmonization** (e.g. calendars) should be further discussed with potential users. All respondents mentioned the requirement for **metadata** describing the origin of the data, for what purpose and by whom they were produced or changed, underlying assumptions and model parameters, abbreviations, accuracy level, uncertainty and a contact for further questions. Free access to information and an overview of existing datasets is important.

***Post processing:*** There is need for post processing tools to transform and to visualize the data.

***User friendly portal:*** Although user-friendly means different things to different users, the majority of the respondents mentioned the need for a portal facilitating a **quick retrieval of data and metadata**. Intermediary organizations and impact researchers like the portal to offer different search functions (e.g. sectors, regions) and to include practical use cases.

***The added-value of CLIPC:*** CLIPC should avoid redundancy with other portals. Two strategies were identified. To some, the CLIPC portal should become the "one stop shop", providing access to as many reliable sources as possible, including raw data, harmonized meta-information and tools for simple on-line post-processing calculations. To others CLIPC should mainly focus on connections to other portals. The added-value would then be provided by a comprehensive overview of data supply and guidance. The combination of satellite and ground-based data and modelling results could also be an asset. Many users would like to use satellite data if they were more easily available.

***Target audience:*** The CLIPC target audience can be positioned between two extremes: scientists with advanced skills to download and process complicated technical data, and societal end-users and some boundaries organizations without such skills and mainly interested in processed data. Consequently**,**  it may be sufficient to **distinguish between two major user categories: scientific and non-scientific, or highly skilled and lowly skilled.**

Theimplications of a distinction between (a) between scientific and non-scientific users, and (b) between core data sources and secondary, or auxiliary data sources for the portal design include: **layers for specialists and non-specialists, layers for direct data access and links to ancillary information, (personalized) selection and browsing tools and a dynamic interface*.***

1. This summary provides background information for the CLIPC user requirements workshop, 3 -2-2015 (Channah Betgen & Annemarie Groot, Alterra). For more detailed information on the CLIPC project, see http://www.clipc.eu/home [↑](#footnote-ref-1)
2. Copernicus is the European Earth Observation Programme. [↑](#footnote-ref-2)