**CLIPC Workshop:**

**“Status of Work packages and remaining challenges for implentation”**

*Held at Joint Research Centre (JRC), Ispra (Italy) on Tuesday 28th April 2015,.*

MINUTES OF MEETING

**1. Participants:**

* Alterra - WUR (Robert Swart); KNMI (Wim Som De Cerff); MARIS B.V. (Peter Thijsse); PIK (Luis Costa); TU Dortmund - IRPUD (Johannes Lueckenkoetter, Marcel Schonlau, Uwe Ligges); CERFACS (Milka Radojevic); CSC - HZG (Juliane Otto); JRC (Nadine Gobron, Niall McCormick); SYKE (Kristin Boettcher).

**2. Draft agenda:** See Annex 1 (attached).

**3. Contents of presentations:** See Annex 2 (attached).

**4. Summary of Workshop:**

The aim of the Workshop, which was a follow-up to the CLIPC meeting in Dortmund on 23 January 2015, was to discuss progress and plans for the CLIP work packages **WP7** (“Impact indicators and functions”), **WP8** (“Impact aggregation and exploration”), **WP3** (“User interface and knowledgebase”) and **WP4** (“Visualisation and integration”) respectively, and the required interactions between these WPs and **WP5** (“Climate Data Access”) and **WP6** (“Transforming climate data”). The agenda for the meeting is shown in Annex 1 below, while a copy of all presentations made by participants is contained in Annex 2. The main discussions at the Workshop are summarized below.

Niall McCormick (JRC) welcomed the participants, and introduced the Workshop by presenting:

* An overview of the project milestones for the current phase (months 14-21) of the project.
* A shortlist of priority indicators being provided by WP7 to WPs 4 and 8.
* Topics to be discussed, including clarification of practical details (NetCDF, ESGF, …) for providing calculated indicators and methods to WPs 4 and 8, and potential uses of remote sensing in CLIPC.
* Indicators available at JRC that are being provided to the project: e.g. growing season for agriculture. standardized precipation index. fraction of absorbed photosynthetically active radiation / fAPAR.

Nadine Gobron (JRC) provided a review of the JRC’s activities and experiences on climate change and impacts, that are directly related to CLIPC, including the JRC’s Climate-ADAPT Time Series Tool[[1]](#footnote-1), and the EU Open Data Portal[[2]](#footnote-2). It was confirmed, in response to a query, that data and metadata from JRC’s Climate-ADAPT Time Series Tool would be available for “harvesting” by WP4.

Luis Costa (PIK) presented an overview of completed WP7 deliverable D7.1 (“A review of climate impact indicators”), the list of agreed “priority indicators”, and progress / current status of work on the WP7 deliverable D7.2 (“Framework for new indicators”).

D7.2 addresses the formulation of existing and new impact indicators, using impact functions and physically based modelling that formalize the relationship between climate phenomena and socio-economic consequences. Three examples of climate impact relationships were described: effect of daily mean temperature (heatwaves) on daily mortality. correlation of flood depth with economic damage. use of observed climate and vegetation data to predict / model moth phenology.

Particpants’ comments on the WP7 presentation included:

* The need for explicit links with JRC work on hydrological modelling (LISFLOOD).
* The possibility to access the JRC’s “tree species habitat suitability” indicator (via the Climate Adapt Time Series Tool), as an alternative to computing the indicator within CLIPC.
* The need to set deadlines specifying when the fully calculated data from WP7 are available to WP8, bearing in mind technical constraints such as the fact that projecting future land use change based on Corine land cover cells will not be possible within the time-frame of CLIPC.

Johannes Lueckenkoetter (TU Dortmund) presented the work by WP8 on development of three main types of tools: indicator comparison and aggregation tools. scenario exploration tool. uncertainty assessment tool. The tools that will be developed have been outlined in milestone document MS34 (“Scenario-based exploration: outline”) that has been circulated and discussed.

Comments regarding the WP8 indicator comparison and aggregation tool included:

* The need to explictly clarify (e.g. in the user interface) how the tools developed in WP8 differ from the “climate impact indicators” described in WP7 deliverable D7.2.
* The need for a project “Wiki page” to improve information sharing within project.
* The need to clarify / flag which indicators are not available as time-series.
* The need to agree on / define the spatial unit of analysis (i.e. raster and EU NUTS) and the temporal resolution (provide indicators as pre-computed time-series, with limited scope for specific requests).
* At least for the prototype CLIPC portal, emphasis should be on a “guided” mode (as opposed to free “sand-box” mode ) whereby users can combine indicator datasets only in accordance with a comparison matrix (perhaps best formulated by WP8), to avoid meaningless outputs.

Comments on the WP8 scenario exloration tool included:

* For indicators developed “from scratch”, climate projections based on Representative Concentration Pathway (RCPs) will be used, however some Tier 3 indicators will be based on the Special Report on Emission Scenarios (SRES).
* For socio-economic scenarios, regionalisation of national-level Shared Socio-economic Pathways (SSPs) will be possible, and a single SSP may be applied to all countries.

Comments on the WP8 uncertainty assessment tool:

* It will not be possible to quantify uncertainty of indicators, due to difficulty of combining climate and non-climate data, therefore only qualitative description will be provided.
* Uncertainty will be assessed only for a subset of indicators, rather than for every indicator.

Peter Thijsse (MARIS) described the ongoing development of the CLIPC portal and knowledgebase, including the system architecture and components / services (raw data discovery; user toolkit for data processing; data viewing; knowledgebase services (e.g. catalogues datasets, FAQ, glossary of terminology).

Wim Som de Cerff (KNMI) described work on WP4 (“Visualization and Integration”), which aims to provide stakeholders with a convenient, user-friendly means to visualize, compare and rank impact indicators.

Some comments related to the visualization of indicators, and the integration of the WP8 toolbox in the CLIPC portal (WP3), carried out as part of WP4:

* Access to / full information about the indicator data and metadata is needed from WP7.
* The matrix defined by WP8 (D8.1) will be used for comparison of maps.
* A decision should be made between whether to use WPS (Web Processing Service) or Web Coverage Service (WCS) for the geospatial processing services.

Rob Swart (Alterra) updated participants with feedback from the CLIPC User Consultation / Requirements / workshop, held in Amsterdam in February 2015, as part of WP2 (User Consultation). The user consultation is planned as a continuous process (via on-line questionnaires, tele-conferences, and discussions at third-party meetings) throughout the second half of the project, in order to keep the new versions of the CLIPC portal aligned with the recommendations and questions in the user Action Plan. A final User Evaluation workshop is proposed for September 2016, allowing time for the pre-prototype CLIPC portal to be updated according to the final feedback from users.

1. <http://climate-adapt.jrc.ec.europa.eu> [↑](#footnote-ref-1)
2. <https://open-data.europa.eu/en/data> [↑](#footnote-ref-2)