Climate Information Portal

Climate Information Platform for Copernicus

CLIPC – status update

Science & Technology Facilities Council · ALTERRA WAGENINGEN UR · KNMI · MARIS · PIK · SMHI · technische universität dortmund · BODC · CERFACS · cnrs · cmcc Centro euro-Mediterraneo sui Cambiamenti Climatici · FMI · Climate Service Center Germany 2.0 Eine Einrichtung des Helmholtz-Zentrums Geesthacht · JOINT RESEARCH CENTRE · Linköping University · magellium · Norwegian Meteorological Institute met.no · University of Reading · SYKE · TEC · UAB Universitat Autònoma de Barcelona · Met Office

www.clipc.eu
Brussels, Jan 2015

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 607418

Climate Information Platform for Copernicus

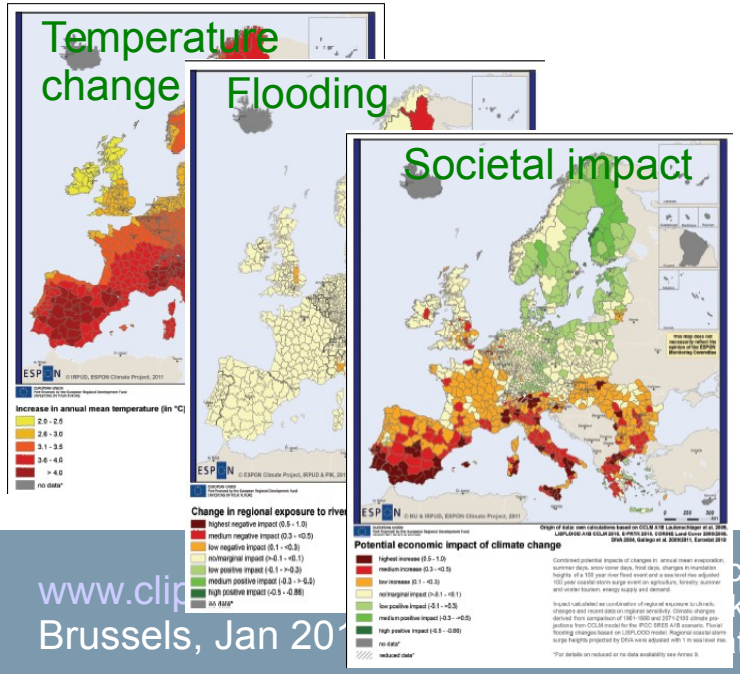
Project started Dec. 2013, first meeting Jan. 2014

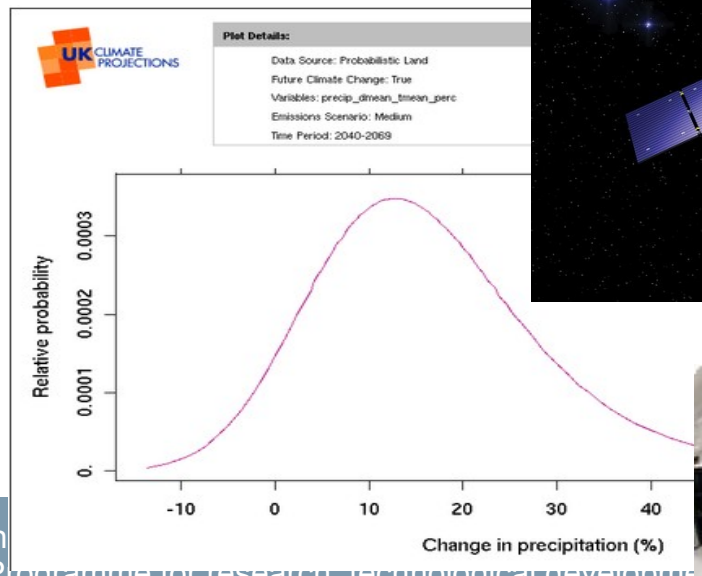
www.clipc.eu

This project has recei
Framework Programm
demonstration under

CLIPC Mission

- CLIPC will provide access to climate information of direct relevance to a wide variety of users, from scientists to policy makers and private sector decision makers;
- The “one-stop-shop” platform will provide data and information on climate and climate impacts, and ensure that the providence of science and policy relevant data products is thoroughly documented;
- Engage with user communities to inform development.





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k Programme for research, technological developme
tion under grant agreement no 607418

CLIPC is one of 5 projects funded in the last FP7 SPACE call to support the launch of the Copernicus Climate Change Service

Eucleia

UERRA
Uncertainties in Ensembles of Regional ReAnalyses

CRA CLIM

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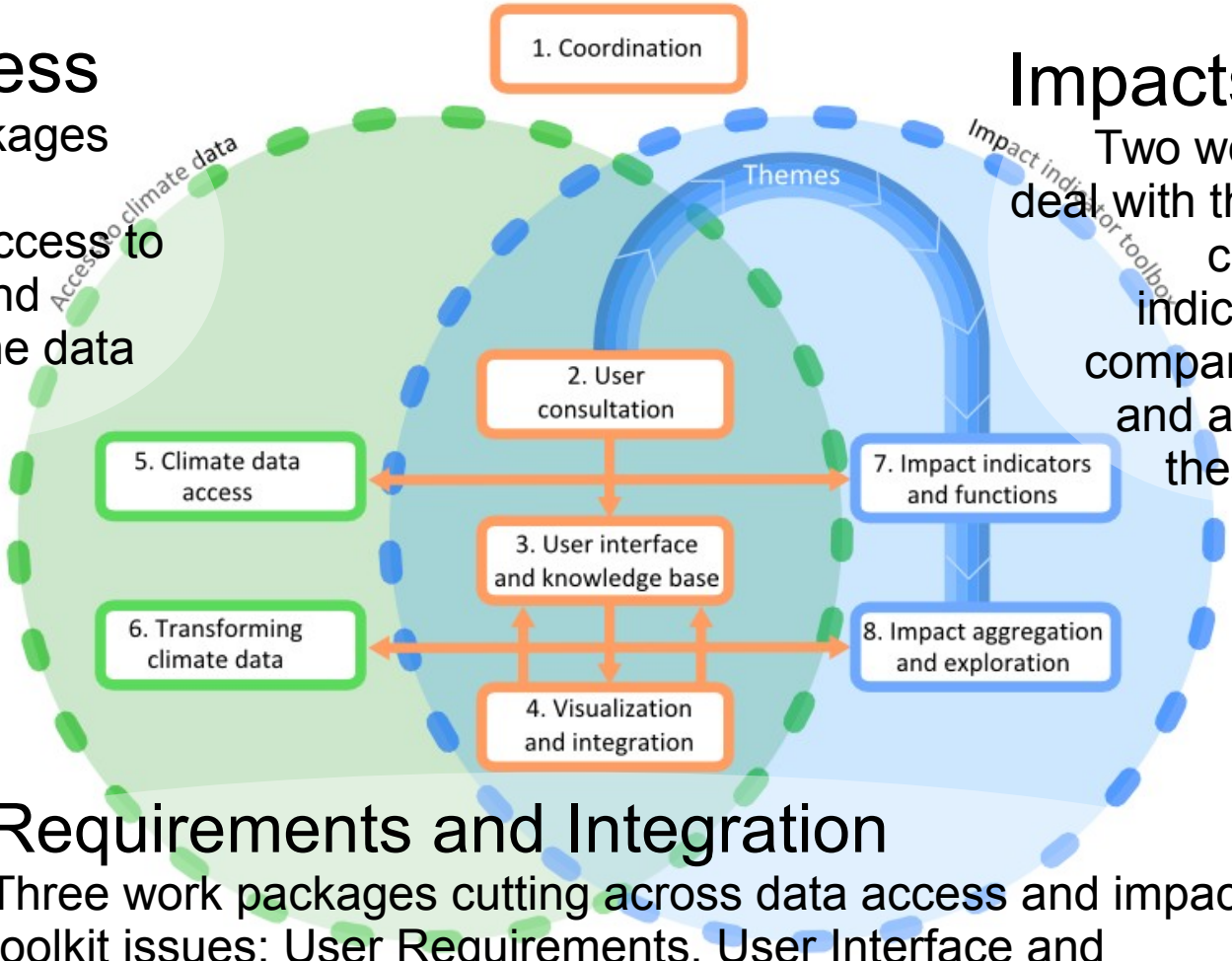
Data access

Two work packages dealing with harmonising access to climate data and harmonising the data itself.



Impacts toolkit

Two work packages deal with the creation of climate impact indicators and the comparison, ranking and aggregation of these indicators.

Requirements and Integration

Three work packages cutting across data access and impacts toolkit issues: User Requirements, User Interface and Knowledge Base, and Visualisation and Integration.

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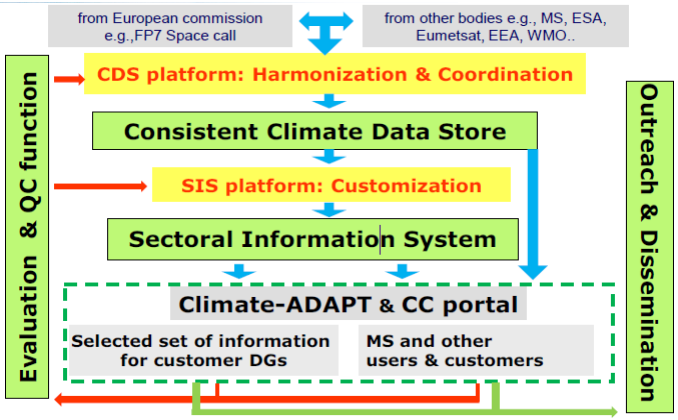
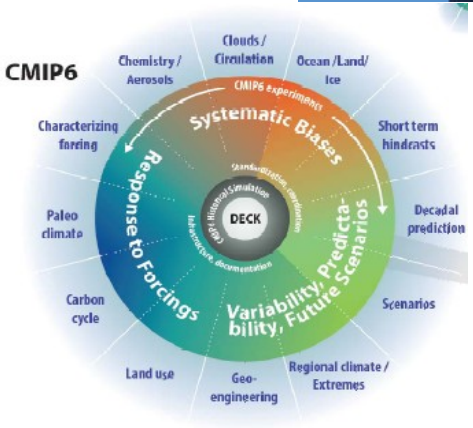
2014 – towards a European Climate Change Service

- Launch of Sentinnel 1
- Finalisation of AR5
- Copernicus Climate Change Service contract signed
- Launch of CMIP6





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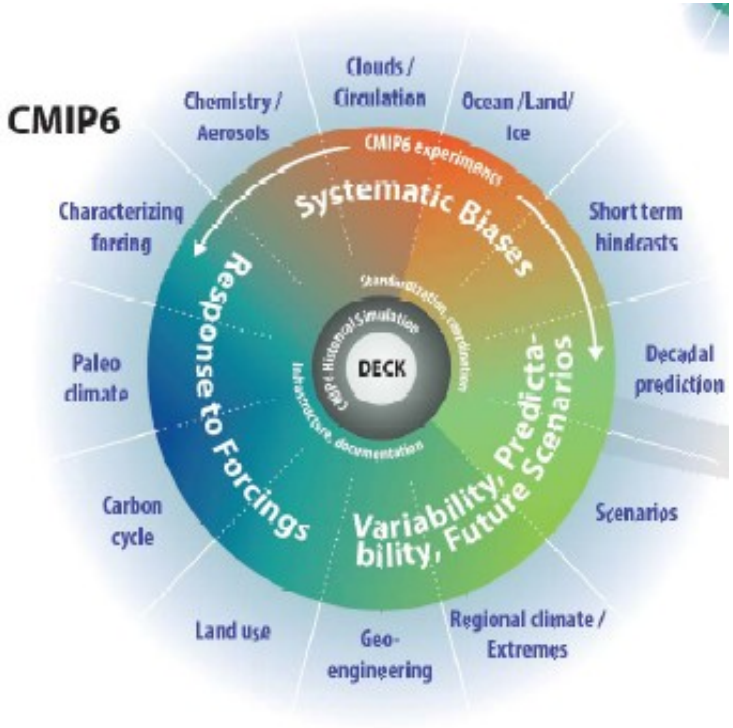
CMIP6 – transforming climate projections



- Extended scientific scope, more analysis of land use and environmental response;
- CLIPC is engaging in the development of data specifications, working for convergence of standards;

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ESA Climate Change Initiative

Initial objective to publish SST and Ocean Colour through ESGF;

<u>Status:</u>
File format compliance checker configured to enforce CCI standards.
Expect publication in next 6 weeks.

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Workshop on design of scientific portals

KNMI, Netherlands, November 17th to 19th, 2014.

is-enes
INFRASTRUCTURE FOR THE EUROPEAN NETWORK FOR EARTH SYSTEM MODELLING

Joint with IS-ENES2

With contributions from IFREMER, ECMWF, CORE-CLIMAX, and QA4ECV.

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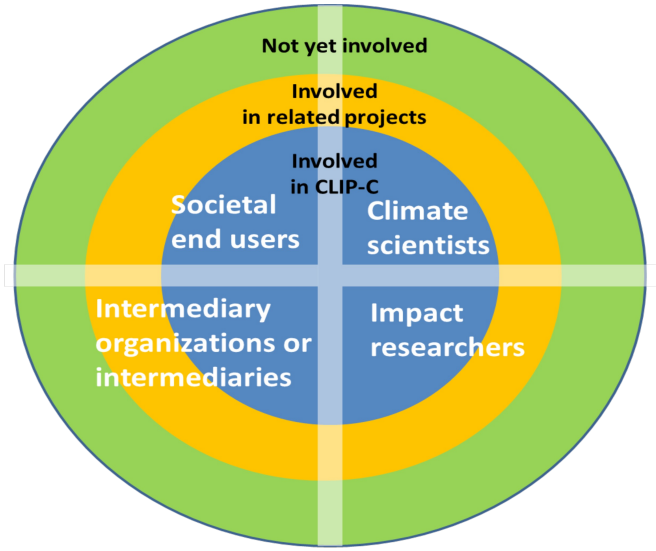
User requirements: adding value

- Review of past and ongoing projects
- Four different user categories
- User interaction strategy defined per priority user category
- First insights in user requirements



User requirements workshop, Feb. 3rd, 2015

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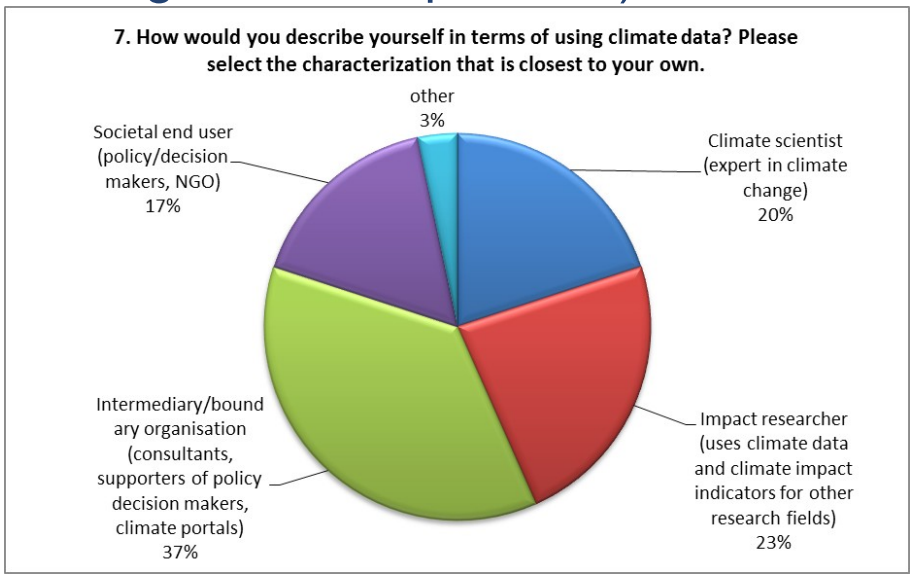
User requirements capture (ongoing)

- Meetings (CLIPC- EEA meeting, May, 2014; CIRCLE2 conference, March, 2014; EIONET Workshop on 'Climate Change Impacts, Vulnerability and Adaptation', 24 June 2014, Copenhagen, Network of European Environmental Protection Agencies, Sept. 2014)

- Database > 500 potential users
- Online survey:
  - 73 pos. responses
  - 53 will participate
- Qualitative interviews



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Results on line survey

Summary:

User type	Top 3 features ranked by majority as Very important/important
Climate scientist	Free open access Availability and quality of metadata Verifiability of information and data provided
Impact researcher	Free open access Accessibility of data Amount of data available
Intermediary/boundary organization	Explanations of climate data and climate impact indicators Usage of understandable language Free open access
Societal end user	Usage of understandable language Diversity of subjects Free open access

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Intellectual Property Rights Management

- The Copernicus enabling legislation is clear that Copernicus data will be free at the point of access (at least to designated users …..).
- Controls on data access may be implemented to monitor usage levels, manage resources, enable data recall, or gain agreement to term of use.
- For all of these, the costs in terms of reduced flexibility and … (e.g. under international copyright legislation, users have a duty to respect the interests of the IPR owner.)

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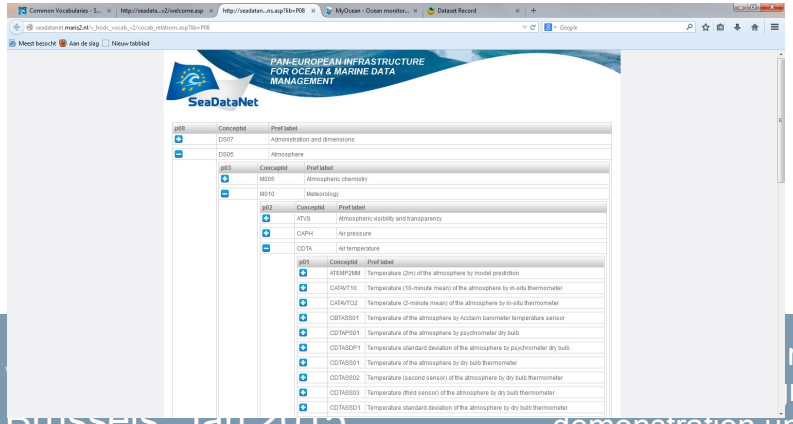
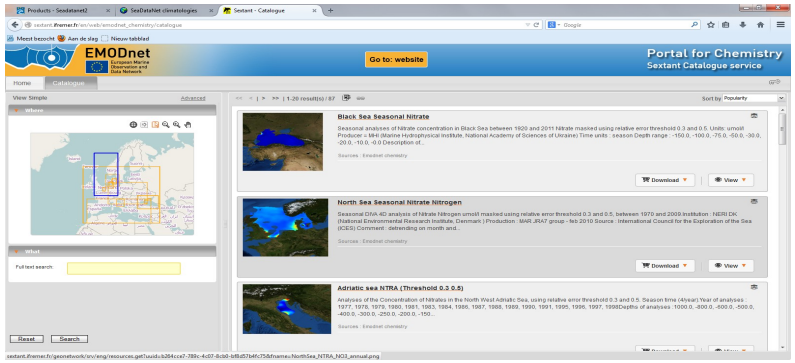
Knowledge base

- Catalogue (Scientific information) –- harvested ISO metadata and Digital Object Identifiers for citation;
- Commentary –- from the user community via CHARMe; including quantitative quality information;
- Technical documentation – e.g. Common Information Model, ngEO;
- Glossary of terminology – searchable, structured vocabularies using “Simple Knowledge Organization System” (following SeaDataNet);
- Literature – searchable registry of grey literature.





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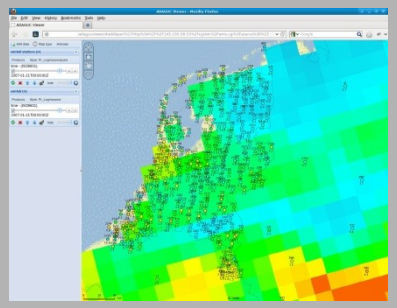
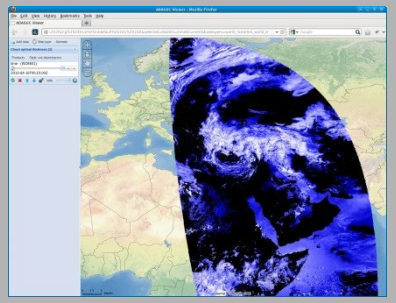
Climate Information Platform for Copernicus

Observations

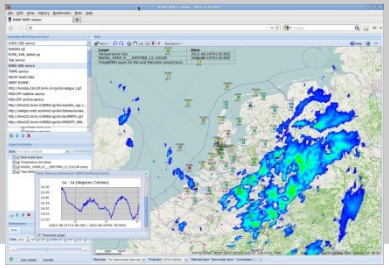


Radar

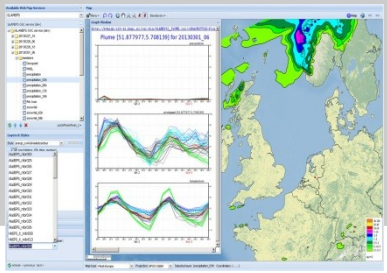
Satellite



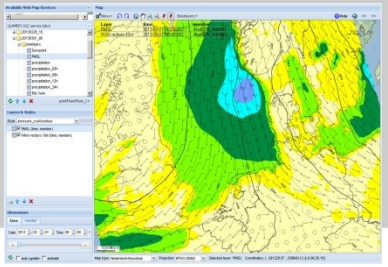
Timeseries



Ensembles



Meteorology



Visualisation framework based on KNMI AGUDUC service.

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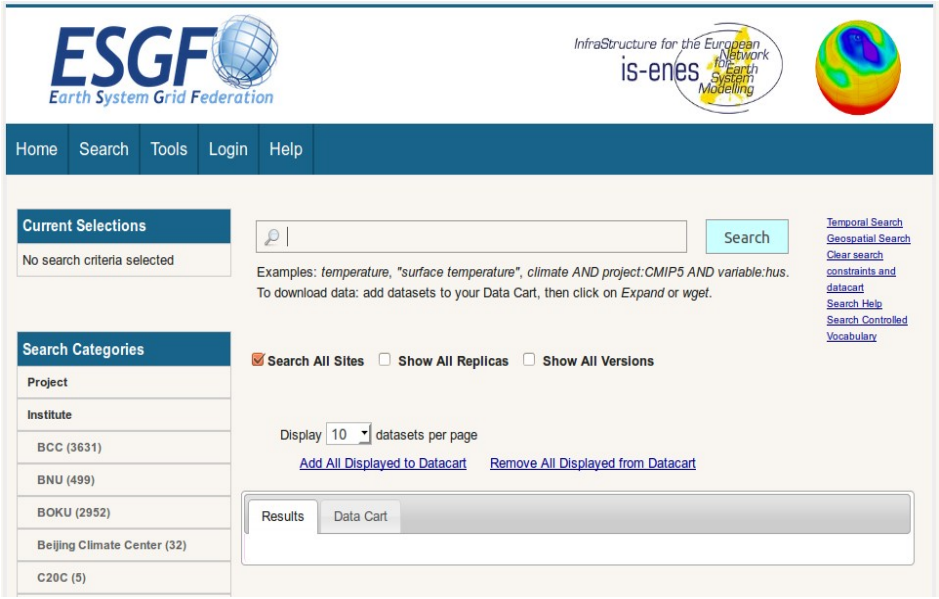
CLIPC Architecture

The Earth System Grid Federation provides a baseline for the CLIPC architecture

- Single sign-on through the ESGF OpenID system.
- Controlled vocabularies to support structured navigation between and within datasets;
- Direct access to data via OPeNDAP
- Distributed services

Extensions

- Support for tape storage
- Extending vocabularies for new data categories
- Improving vocabulary management
  - –- linked to SeaDataNet implementation of British Oceanographic Data Centre vocabulary service
- Interoperability with ESA ngEO services;



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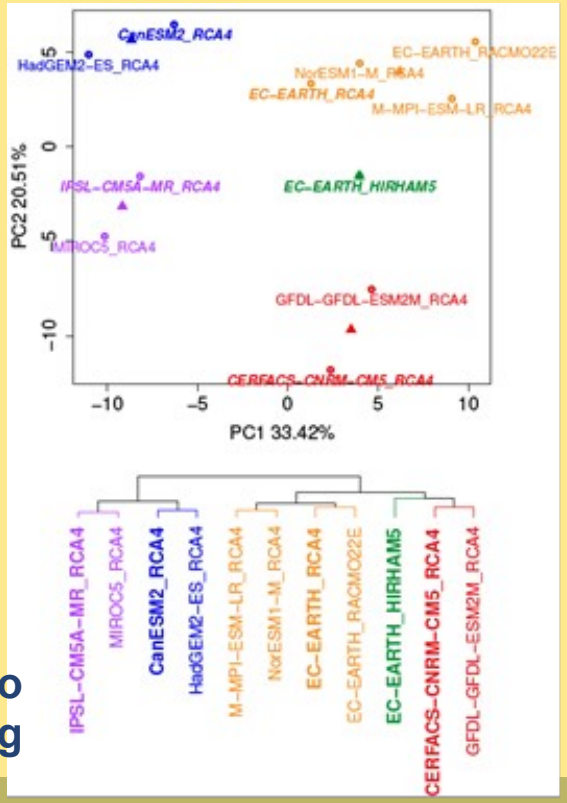
Bias-Correction Intercomparison Project
Multi-project initiative to develope authoritative bias-adjusted datasets

- Working at three spatial resolutions:
  global (GCM) scale ~100-200 km
  CORDEX EUR-44 ~50 km
  CORDEX EUR-11 ~12 km

CLIPC is addressing the demand for harmonised data through bias adjustment and reduced ensembles



Generation of reduced ensembles to support impacts modelling

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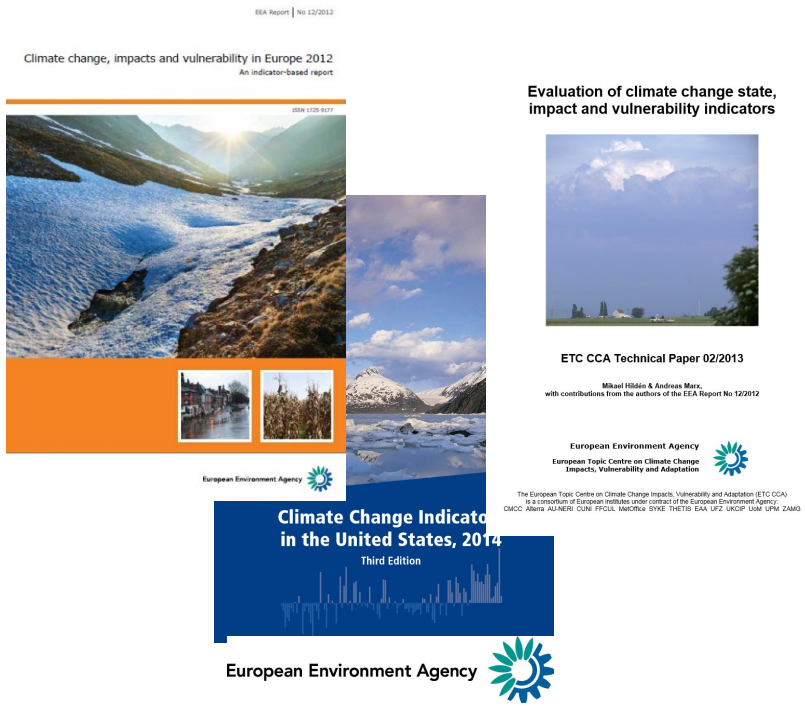
Documentation of climate change and impact indicators

- Review of existing frameworks
- Process discussed at workshop with European Environment Agency;
- 2nd meeting with EEA, April 2015, to discuss support for 2016 EEA report on climate change impacts and vulnerability.



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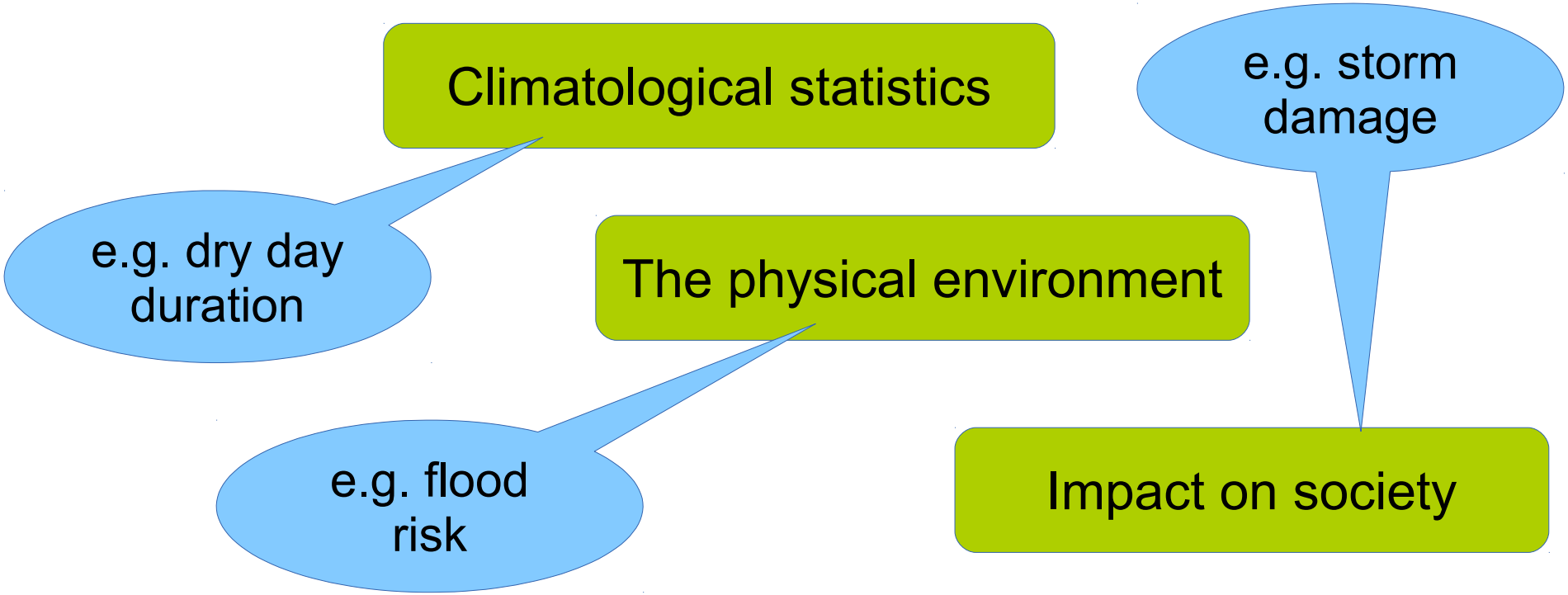
Existing indicators documented, in 3 tiers …...



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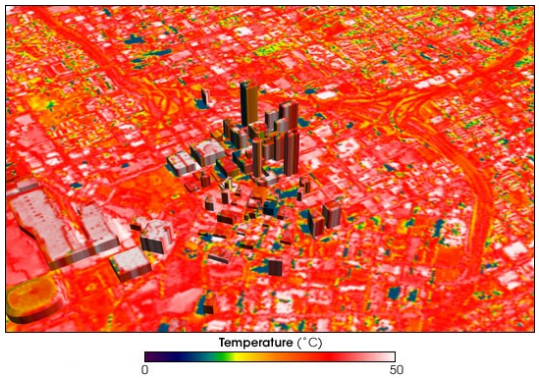
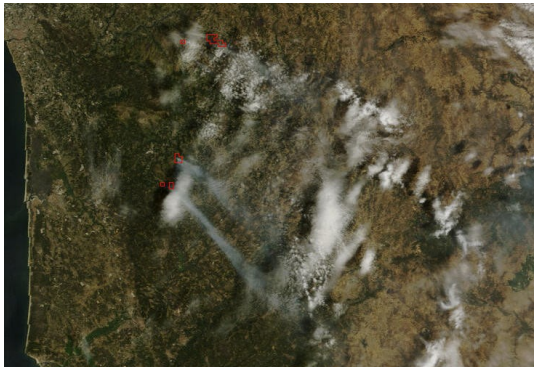
Existing indicators documented, in 3 tiers, and 3 themes:

Urban



Thermal image of Atlanta (US) (Wikipedia)

Rural



2013 fires (Portugal) (Uni. Freiburg)

Water

Elbe river (Germany) (Wikipedia)

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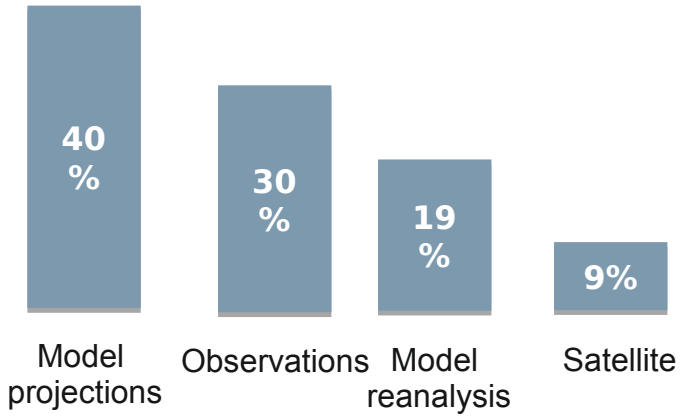
Indicator database

Description of methodological base	Nr
Transformation of a single climate variable	33
Metric combining several climate variables	12
Metric aggregating climate & non-climate data	12
Metric from bio-physical data other than climate	9
Output of biophysical or economic model.	1

- 81 entries to date;
- Tier 3 indicators hard to capture;
- Tier 1 nicely covered (but more work on the urban theme).



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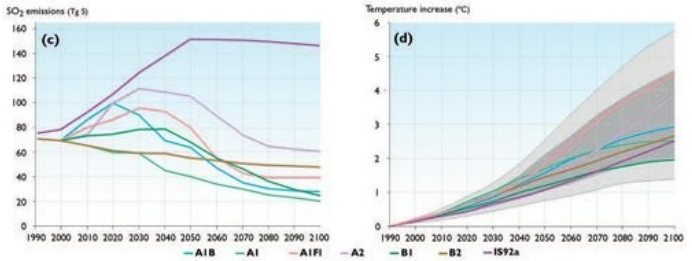
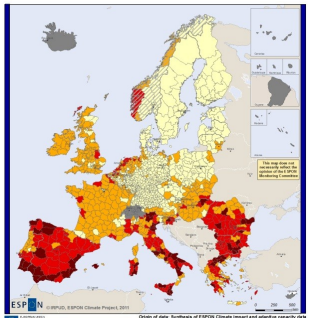
Scenario-based exploration tools

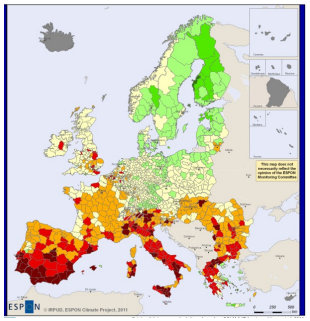
Objective: Interactive tools that allow users to explore alternative scenarios of climate change impacts.

Currently

- Reviewing existing sensitivity scenarios
- Assessing needs and requirements for modified/additional scenarios







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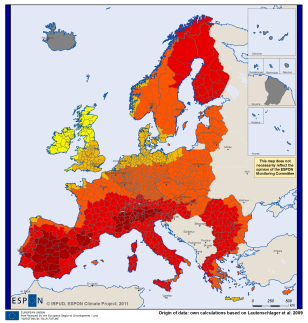
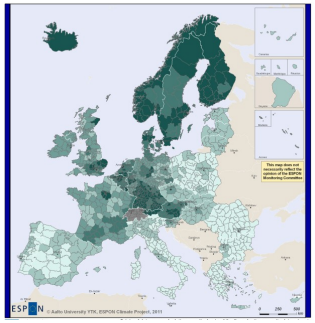
Indicator comparison tools

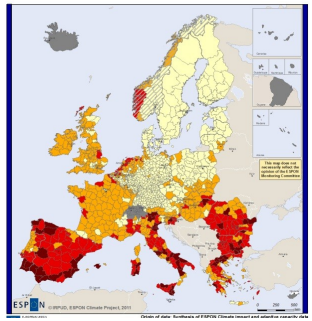
Objective: Interactive tools that allow users to compare, rank or aggregate impact indicators.

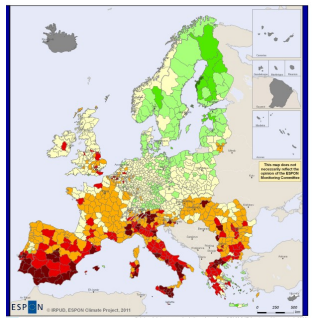
Currently

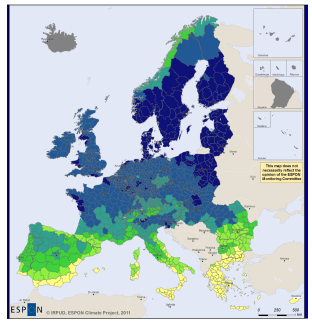
- Exploring existing comparison tools
- Exploring user needs











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THANK YOU!