Climateurope2

Climateurope2: Climate services, standards, provenance and more

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Climate risk and adaptation

Climate risk assessment and climate adaptation require access to reliable climate information. Climate services is the set of procedures that develops such information in context.

Storm Daniel, 11 September 2023
Derna, Libya, more than 400 mm recorded in 24 hours

EUCRA impact chain for heat and drought risk assessment

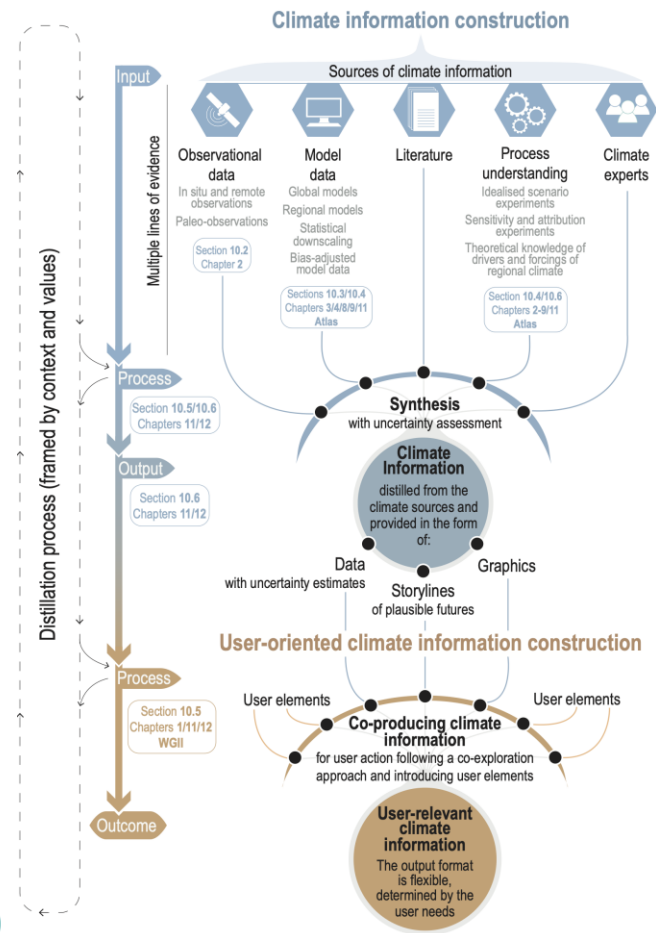# Climate information and services

Fig. 10.1 (AR6 WGI)

What about quality?

What about quality?

Can we be confident in the service provided?
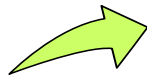
Poor quality leads to
- waste of time and money
- poor decisions
- frustration
- reputation damage

Quality management is central to ensure a reliable service useful to users

with the purpose of
- demonstrating that the service is a trusted source
- characterising quality dimensions in a clear and traceable way
- guiding users with information to make their own decisions
- providing a vehicle that will trigger actions to improve the service

Quality assurance of climate services

Quality assurance assesses the fitness-for-purpose of climate services against standards from multiple angles: tools, workflows, data, applications, provenance, documentation, user engagement, etc.

For instance, software quality assessment should be based on the standard ISO/IEC 9126 and extensions (e.g., ISO/IEC 25010:2011).
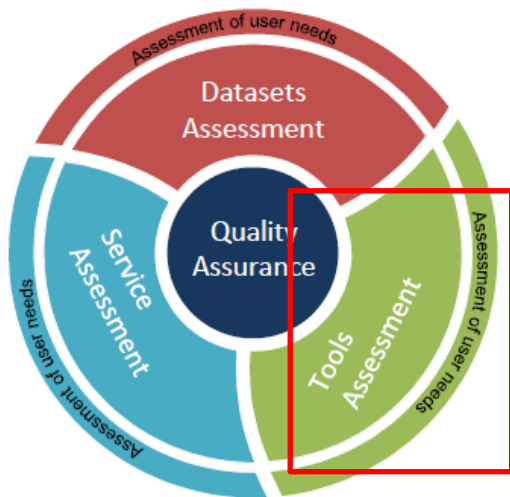
Objectives and structure

Standardising

Development of standardisation procedures for climate services

Supporting

Support of an equitable European climate services community

Increasing uptake

Enhancement of the uptake of quality-assured climate services to support climate adaptation and mitigation

CSA Horizon Europe, Sep 2022-Feb 2027
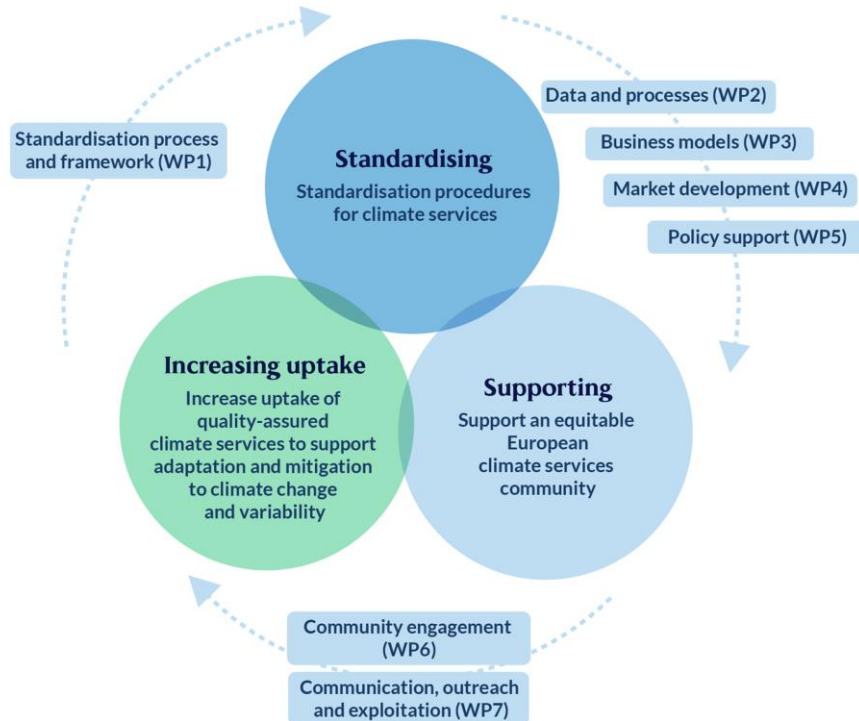
Objectives and structure

Standardising

Development of standardisation procedures for climate services

- O1.1 Estimate the maturity of the climate services components
- O1.2 Proceed with the standardisation of the components of climate services and the interoperability of the standards
- O1.3 Develop a quality management approach for the verification of climate services

Standardisation process and framework (WP1)

Standardising
Standardisation procedures for climate services

Data and processes (WP2)

Business models (WP3)

Market development (WP4)

Policy support (WP5)

Increasing uptake
Increase uptake of quality-assured climate services to support adaptation and mitigation to climate change and variability

Supporting
Support an equitable European climate services community

Community engagement (WP6)

Communication, outreach and exploitation (WP7)

Objectives and structure

Supporting

Support of an equitable European climate services community

- O2.1 Sustain a community of European climate services actors, including underrepresented groups
- O2.2 Develop an interactive platform and support service
- O2.3 Integrate ethical, political, anthropological and sociological perspectives from social sciences and humanities

Standardisation process and framework (WP1)

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Objectives and structure

Increasing uptake

Enhancement of the uptake of quality-assured climate services to support climate adaptation and mitigation

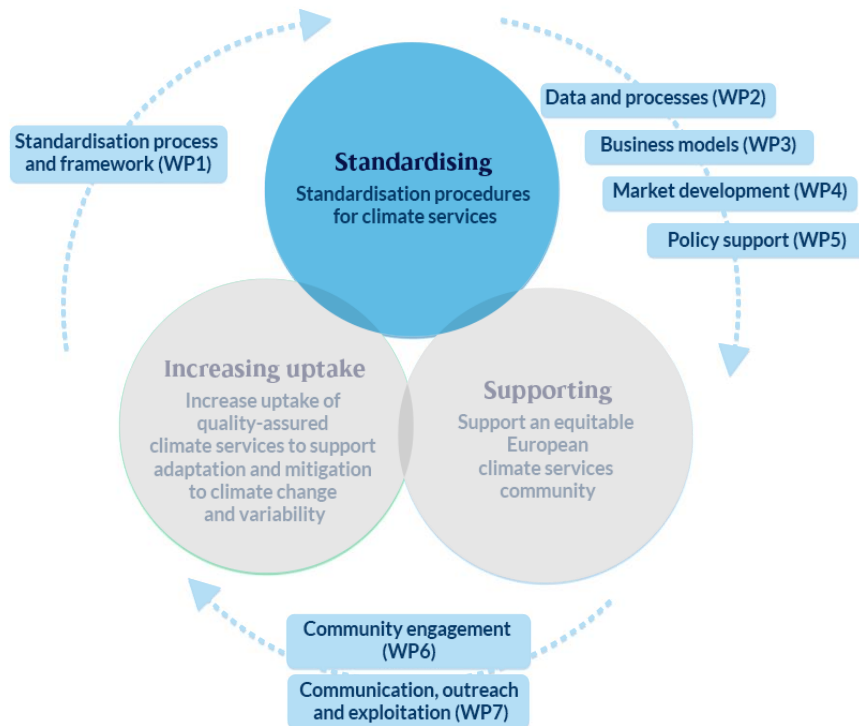- O3.1 Develop a strategy for the accreditation of climate services
- O3.2 Provide recommendations for improving tools to enhance the salience, credibility and legitimacy of climate services
- O3.3 Promote trust between supply and demand
- O3.4 Assess current business models and the scalability of market solutions

Standardisation process and framework (WP1)

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Community and audience

- Climate services (CS) users
- CS providers and purveyors
- CS projects and initiatives

- Standardisation community
  (e.g. ISO, CEN-CENELEC)
- National standards organisations

- EC Project Officer
- Project Partners

- Climate scientists / researchers
- Other disciplines
  (e.g. disaster risk reduction)
- Data providers *(e.g. C3S, ESA, EEA)*
- European and international projects and initiatives
  (e.g. GFCS, IPCC, IPBES, DestinE)

- Intergovernmental institutions
  (e.g. WMO, FAO)
- European Commission and DGs
- National, regional and local policy and decision-makers

- Economic sectors
  (e.g. energy, agriculture, infrastructure)
- European business associations
  (e.g. WindEurope)

- Climate, environmental, and economic journalists
- Mass media

- Civil society
- NGOs
- Youth
- Public opinion at large

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Climate Services Community
Governments & policymakers
Standards community
Business Sector
Consortium & EC project officer
Journalists
Scientific community
Citizens

Target groups

Elements for standard recommendations

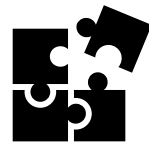| Landscape	Glossary	Framework	WP2-5
Clarify the existing landscape of technical, procedure, and performance norms and standards and identify initiatives supporting standardisation of climate services	Create a glossary mapping of sectoral vocabulary	Develop a framework for standardisation of climate services	Synthesis of WPs 2-5 results

Updates: ongoing

v1: ongoing

Standards revelant for CS components: stakeholder engagement + co-creation	More than 13 terms to discuss + consensus scoping	Framework refinement

Provenance in climate information

A cacophony of climate information sources is available, and this happens in a growing market with no clearly defined standards. What about the adequacy of the information sources? How is product quality addressed? As open as possible, as restricted as necessary.

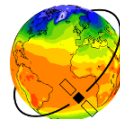## METACLIP
METAdata for CLImate Products

2 followers http://www.metaclip.org

Popular repositories

metaclipR   Public

Forked from Predictia/metaclipR

The climate4R extension for the METACLIP Provenance Framework

● R   ★ 3   ⑂ 1

IPCC WGI Interactive Atlas

A novel tool for flexible spatial and temporal analyses of much of the observed and projected climate change information underpinning the Working Group I contribution to the Sixth Assessment Report, including regional synthesis for Climatic Impact-Drivers (CIDs).

Participate in the user testing survey 🔗   Errata and problem reporting ⌗   License and citation ⚎   Contact ✉

What is the ESMValTool?

The Earth System Model Evaluation Tool (ESMValTool) is an open-source community-developed diagnostics and performance metrics tool for the evaluation and analysis of Earth System Models (ESMs). ESMValTool allows for a comparison of single or multiple models against predecessor versions and observations. The aim of the ESMValTool is to take model evaluation to the next level by facilitating analysis of many different ESM components, providing well-documented source code and scientific background of implemented diagnostics. Traceability and documented source code and scientific background of implemented diagnostics. Traceability and

Diagnostic script interfaces

In order to communicate with diagnostic scripts, ESMValCore uses YAML files. The YAML files provided by ESMValCore to the diagnostic script tell the diagnostic script the settings that were provided in the recipe and where to find the pre-processed input data. On the other hand, the YAML file provided by the diagnostic script to ESMValCore tells ESMValCore which pre-processed data was used to create what plots. The latter is optional, but needed for recording provenance.

Provenance

When ESMValCore (the `esmvaltool` command) runs a recipe, it will first find all data and run the default preprocessor steps plus any additional preprocessing steps defined in the recipe. Next it will run the diagnostic script defined in the recipe and finally it will store provenance information. Provenance information is stored in the W3C PROV XML format. To read in and extract information, or to plot these files, the prov Python package can be used. In addition to provenance information, a caption is also added to the plots.

What about provenance in this case?

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Maximum air temperature in Yakutsk, Russia average) | 2041-2070 | RCP 4.5

INFORMATION

https://climateurope2.eu/
https://earth.bsc.es/climateurope2

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