Climateurope2

Key Messages on standardisation of climate services

Climateurope2 synthesis report

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Introduction

The world is in dire need of preparing for the challenges posed by climate variability and change. This requires speeding up the energy transition and shifting investments, technology, business models, and social innovation towards a sustainable and equitable transformation. Availability and use of climate information of demonstrable quality for decision making is key in addressing these needs. However, the urgency and complexity of reporting climate risks, reducing emissions, and adapting to more frequent, extreme, and slow-onset events has created a fragmented market, where climate information seems disconnected from policy, business, and communities' needs and expectations.

Quality-assured and easy to access 'climate services,' encompassing the provision of actionable climate information for decision-making are needed to adequately and equitably inform and support climate adaptation and mitigation, bridging the gap between academic research and a growing market with a myriad of public and private actors.

Recognising the need for quality, salient, and credible climate services, Europe is working towards their standardisation, quality assurance, and certification. Standardisation refers to the process of building consensus across stakeholders, coordinated and structured by a legitimate standardisation body and leading to standards and guidance documents that benchmark products, processes, and services. However, the complex nature and fluid boundaries of climate services requires breaking them down into components, such as data and climate knowledge or the ecosystem of actors involved in a climate service, amongst others. These components facilitate the definition of suitable standardisation opportunities and other governance arrangements.

To understand what quality-assured climate services involve, which of their components can be benchmarked, and which institutional mechanisms are appropriate requires: i) in-depth analysis of the current market; ii) engaging and supporting the community of climate services; and iii) drawing lessons from both the experiences of the public and private sector providers alike.

Not all aspects of climate services are expected to be formally standardised, and equity (including aspects such as equal access and power balance) must be a central concern. The following key messages provide the current knowledge gathered through a joint effort at the European research level to identify an optimal strategy for benchmarking climate services and the most urgent recommended next steps [1].

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[1] These are the consolidated expert opinions of the Climateurope2 (CE2) consortium at the time of writing, which will mature and evolve over time.

1

The standardisation of climate services supports evidence-based resilience to climate impacts, green investments, and transformations to a sustainable future.

Climate services are essential for addressing the risks associated with climate variability and change, inform mitigation and adaptation pathways, and ensure robust sustainability reporting and disclosure to unlock sustainable finance. Yet, criteria supporting the quality of these services or how they may be fit for purpose need more guidance, regulation and agreed-upon legitimate standards. Standards, quality assurance, and certification schemes have the potential to enhance the quality, salience, credibility, and legitimacy of climate services, and raise the bar in the climate services market.

Lessons harvested from CE2 can catalyse the dialogue to formulate requirements to be considered in standardisation processes.

#SUSTAINABLE FUTURE

2

Breaking down climate services into interrelated components enables the assessment of their quality, efficiency, and effectiveness, and to distinguish what should not be standardised.

Climate services can be defined as the provision of climate information such that decision-making is facilitated. The service should include engagement between users and providers, be based on scientifically credible information and expertise, have an effective access mechanism, and respond to users' needs. Given the variety and complexity of climate services and their fluid boundaries, breaking down a climate service into a set of interrelated components is useful. The components identified by CE2 are 1) the decision context, 2) the ecosystem of actors and co-creation processes involved in co-producing, evaluating, and taking up climate services, 3) knowledge systems of different types, and related selection, evaluation, and translation processes, and 4) the delivery mode and its evaluation.

#CLIMATE SERVICES COMPONENTS

3

Climate services can be governed through both, formal standardisation processes and alternative institutional mechanisms.

There is no set of guidelines or standards regulating climate services, and the current landscape needs to be more diverse and cohesive. Climate services can benefit from a suite of design or technical standards that benchmark a minimum set of quality criteria for structural specifications (such as data provenance), performance standards setting outcome specifications (such as salience criteria), and procedural standards setting specifications for processes (such as co-production processes). Some components of climate services may not be fully suitable nor may require formal standardisation. In those cases, alternative forms of governance and institutional mechanisms can guide their suitability and quality.

#CLIMATE SERVICES GOVERNANCE

4

Climate services shall demonstrate to be user-focused, science-based, transparent, collaborative, timely, accessible, sustainable, and equitable.

Although there is no single set of quality, salience, and usability criteria for the totality of climate services, collecting existing scientific and technical knowledge and evidence from empirical studies for the different components enables identification of key requirements. Recognized factors are that deep understanding of decision contexts is key, as is learning from ongoing delivery of services (including stories of failures) and collecting empirical evidence as to what constitutes optimal co-design and co-production with users. Climate services fitness for purpose also depends on the interaction and interoperability across different types of knowledge and experiences.
A wide variety of stakeholder groups with different roles, interests and goals should be adequately involved in the climate services value chain in a balanced and democratic manner.

#BENCHMARKING

5

Climate services fitness for purpose require multidisciplinary, transdisciplinary, and multi-faceted competencies, including domain knowledge.

All decision contexts in the broad sense for which climate services are needed (including contexts in which the climate information is produced, the decision to which it applies, and its local, sectoral or regulatory context), are all important conditions for successful services. These conditions can influence the outcome and impact of a climate service and thus, also its quality, efficiency and salience for the decision at hand. Transdisciplinary approaches integrating scientific knowledge with sectoral and domain expertise are critical to take into account local specificities, cultural and normative contexts.
Thus, the integration of a multiplicity of competences and experience is required for climate services fit for purpose.

#MULTIPLE COMPETENCIES

6

Climate data-related guidance documents are available, although often incomplete and driven by providers rather than users.

Meteorological, hydrological and climate data are the elements of a climate service that have a more organised community, available requirements, quality criteria and technical documentation. However, key aspects remain unresolved, such as data provenance, traceability of derived indicators, and data interoperability, curation, and exploitation scenarios. In addition, the diversity of standards combined with the importance of integrating climate data with other type of data relevant for different decision contexts, remains a challenge. The merging of multiple knowledge systems, and fostering appropriate understanding during engagement and co-production with users, indicates that this relative maturity of climate data quality criteria falls short, requiring interfaces with other equally important knowledge systems.

#DATA AND INFORMATION

7

The supply side of the climate services market is growing, yet there is lack of clarity on best practices and the suitability of the services offered.

To date, the climate services market has been dominated by public providers who have played a key role in giving access to public climate datasets. There is an increasing number of private climate service providers, who aim to translate climate data to satisfy both public and business needs. Although the value of climate services (economic, social, cultural) is still poorly understood, it appears that market success is built on an understanding of decision-making contexts and on localising the service provision (e.g., in cities to assess health risks or for financial disclosures). Potential innovative climate service business models need further study, as not all (partly publicly funded) innovations have reached the market.

A taxonomy capturing success factors of climate services and their components will help identify standardisation opportunities.

#GROWING MARKET

8

Broadening the climate services community through contextualised engagement with stakeholders will advance services' uptake and quality.

The climate services community that has so far engaged with Climateurope2 consists primarily of research-focused participants. This may be limiting as there is the potential to miss out on insights from the private sector and other climate service professionals, as well as the wider climate service user community, whether in the public or private domains. Creating a tighter knit community will help advance knowledge sharing and open ways to benchmark climate services.

There will be no one size fits all: for example, engagement with the private sector will benefit from a sectoral approach. New creative engagement and communication strategies, including the use of art, need to be considered in reaching out to underrepresented stakeholders. Engagement needs to be respectful and mindful of inclusiveness and carbon emissions.

#COMMUNITY

9

Europe should aim to place equity at the centre of standardisation processes, the resulting standards, and the climate service community.

Placing equity at the centre of climate services governance is a choice Europe can make to avoid economic interests to dominate climate services. It is an ethical choice to work towards ensuring power balance, and equal access to information, resources, and support to adapt and mitigate the impacts of climate change to vulnerable and marginalised communities. At the same time, equity also has an efficiency value. A climate service should provide relevant data to the community it serves. In turn, users tend to have more trust in a climate service that they have contributed to build and over which they feel ownership.

Standardisation processes need to enshrine all types of mechanisms that ensure equity, empowering stakeholders with different capabilities and accessibility constraints to engage with the process.

#EQUITY

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