Climateurope2

Understanding the value of Climate Services for the Public Sector in Europe

One of the aims of CE2 is to identify the values and benefits that CS offers to society based. This work on values and benefits followed a literature review conducted and stakeholder consultations. Local decision-makers were interviewed, covering different jurisdictional levels (small towns, cities and regions) covering Northern, Southern, Eastern and Western Europe.

The findings suggest that a systematic evaluation of CS in Europe is rather limited and reveals a complex landscape where the ambition of evidence-based adaptation collides with significant scientific, institutional, and practical constraints. Whilst CS have become central to risk management, urban planning, and policy development, their real value is rarely straightforward, and their widespread uptake cannot be taken for granted.

According to the outputs from the conducted interviews, the value of CS is determined by several interlinked factors. The quality of climate data, including accuracy, lead time, specificity, and spatial resolution, profoundly affects its usefulness. However, credibility and users' trust are equally vital, especially given widespread preference for short-term, historical data over uncertain long-term projections. The ecosystem of actors, including risk perception, awareness, and past experiences, shapes engagement with CS, with users more likely to act if they perceive risks as relevant and urgent.

Sectoral context further complicates matters: different industries and governance levels require tailored approaches, as value is perceived through varying lenses (economic, social, resilience, regulatory compliance). Methodological approaches for assessing CS value range from quantitative (cost-benefit analyses, simulations) to qualitative (case studies, interviews), with an ongoing debate about the best balance between ex-ante and ex-post evaluations. Notably, the lack of standardised metrics and frameworks severely hampers comparison, learning, and scaling of best practices.

Leading frameworks, such as those from Lazo et al. (2008), WMO (2015), and the WISER programme, stress the importance of holistic, context-sensitive evaluation that integrates stakeholder engagement and covers economic, social, and environmental dimensions. Yet, realworld practice remains inconsistent, often lacking robust monitoring, clear baselines, or systematic evaluation processes. This deliverable ultimately argues for a deliberate, structured approach to CS evaluation, rooted in transparent methodology, user-centred design, and explicit articulation of both benefits and limitations, which is essential if CS are to fulfil their promise of supporting effective climate adaptation and risk management.

Key findings highlight several recurring realities:

1. Value is context-dependent and often only partially realised

The evidence underscores that the value of CS is not intrinsic, but highly dependent on their context of use, sectoral needs, and the decision environments of the end users. The best technical service is ultimately meaningless if it does not fit with institutional priorities, timelines, or with the sociopolitical context. Many European CS described in the literature remain research-driven prototypes, with limited transition to operational services once project funding expires. The consequence is a fragmented landscape where good practice and effective services rarely scale up or endure.

2. Persistent barriers limit uptake and impact

The persistent barriers to effective CS use are numerous and widely shared across sectors and regions:

- Lack of standardisation: There is little harmonisation in the methods, metrics, or frameworks for evaluating CS. This makes cross-comparison or cumulative learning exceptionally difficult. Even leading frameworks (Lazo, WMO, WISER) are not consistently or rigorously implemented.

- Data and capacity gaps: Many cities and regions struggle with limited access to highresolution, credible data and a lack of in-house technical capacity to process, interpret, and act upon CS. Even where technical skill exists, institutional inertia, staff shortages, and budgetary constraints are endemic.

- Decision-relevance and trust: CS are often poorly tailored to the needs and capacities of real users. The mismatch between modelled data scales and real-world planning needs is acute. Trust in CS is undermined by uncertainties that are rarely communicated effectively or by conflicting data from multiple providers.

- Unclear governance and fragmented provision: Many municipalities report ambiguous mandates and a lack of clear national guidance, resulting in ad hoc or inconsistent approaches to CS understanding, adoption and use.

3. Benefits go beyond economics, but remain hard to capture

While economic assessments (such as the cost-loss approach and cost-benefit analysis) are well-established, most studies continue to focus narrowly on immediate, quantifiable gains. Yet the social and environmental benefits, improved resilience, reduced vulnerability, public safety, and equity, are often the most valued by local actors, even though they are harder to monetise or systematically document. The literature and stakeholder consultations alike reveal that intangible benefits, such as increased community trust, improved communication, or better targeting of vulnerable groups, are both real and insufficiently captured by current evaluation approaches.

4. The need for genuine co-production and institutional learning

Perhaps the most consistent lesson is that CS deliver greatest value when they are co-produced with, and for, their end users. Success depends not just on technical excellence but on continual engagement, capacity building, and two-way dialogue. When local knowledge and lived experience are combined with technical data, adaptation planning becomes more realistic and actionable. However, co-production is labour-intensive, requires long-term investment, and is vulnerable to shifting political and funding priorities.

5. Recommendations for a way forward

The promise of climate services in Europe is far from fully realised. The technical foundations exist, but their societal value remains conditional and fragile, highly dependent on user engagement, local context, and institutional commitment. **Only through a sustained focus on fit-for-purpose design, rigorous and transparent evaluation, and genuine partnership with end users will CS move beyond experimental pilots to deliver on their potential as drivers of climate resilience and risk reduction.**

- **Adopt and Adapt Robust Evaluation Frameworks:** Any CS initiative must be underpinned from the beginning by a fit-for-purpose evaluation framework that systematically considers economic, social, and environmental benefits. While standardising metrics across Europe may be unrealistic, a common process for evaluation design, including transparent reporting of methods and assumptions, would substantially improve comparability and learning.

- **Invest in Local Capacity and Data Accessibility:** National and European bodies must support local authorities with both technical training and the infrastructure to access, process, and use climate data at the right scale. Investments in open data, user-friendly platforms, and ongoing professional development are critical if CS are to become embedded in routine decision-making.

- **Prioritise Communication and Trust Building:** Clear, honest communication of uncertainty and limitations must become the norm. Without this, trust in climate services will erode, regardless of technical advances. Equally, mechanisms for gathering and acting on user feedback must be routine, not exceptional.

- **Support Institutional Change and Stable Funding:** The chronic dependence on short-term project funding undermines continuity and institutional learning. Stable, long-term financing and clear governance arrangements are prerequisites for building the institutional memory and capacity needed for CS to have enduring impact.

Keywords: climate services, public sector, adaptation, standards, values, benefits, evaluation methods.