

Literature-based guiding principles for high-quality Climate Services

Based on the literature review performed for the Deliverable 4.1, high-quality climate services should be designed and delivered in accordance with the following guiding principles:

- 1. Science-based:** Climate services should be based on credible science and evidence. Service providers should use the best available scientific data, models, and methods to develop and deliver climate information. References to peer-reviewed literature and / or official certificates (e.g., Certified Consulting Meteorologists of the American Meteorological Society (<https://www.ametsoc.org/index.cfm/ams/education-careers/careers/ams-professional-certification-programs/certified-consulting-meteorologist-program-ccm/>) can build confidence and trust in the user community.
- 2. User-focused:** Climate service providers should engage with users and stakeholders to understand their needs, priorities, and decision-making contexts. This will help ensure that climate information is relevant, usable, and actionable.
- 3. Transparent:** Climate services should be transparent about their data sources, methodologies, and assumptions. Climate service providers should clearly communicate the limitations and uncertainties of climate information to users and stakeholders to build and increase trust. Here standards and guidelines (e.g., such as the FAIR principles) can help the user community to develop trust in the product and to be aware of the limitations.
- 4. Collaborative:** Climate services should be developed and delivered through collaboration among different stakeholders, including scientists, policymakers, practitioners, and users. Service providers should engage in regular dialogue with users and stakeholders to ensure that climate information is useful and relevant. Feedback by the users provide valuable information to further improve the quality of the product. Thus, feedback and evaluation processes should be a vital part of the CS development.
- 5. Timely and accessible:** Climate services should be provided in a timely and accessible manner. Service providers should use user-friendly formats and platforms to deliver climate information to users, taking into account differences in literacy levels, languages, and technological infrastructure. Information should be easily locatable and (to the extent possible), be freely accessible.
- 6. Sustainable:** Climate Services should be designed to be sustainable over the long term. Service providers should ensure that their services are adequately resourced over time, and that they have the capacity to adapt to changing user needs, new scientific developments, and evolving policy contexts.
- 7. Equitable:** Climate service products should be freely accessible and usable to the extent possible, to ensure that they are available to users with limited resources. The outcome of a climate service should (to the extent possible) take equitable measures into account.

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By following these guiding principles, climate service providers can help ensure that their services are of high quality, and that they support effective decision-making and action on climate change. As pointed out in the discussions, the overall quality of a climate service depends on a number of factors and the context in which a specific service and product is used. Thus, even though many quality criteria might be fulfilled, a success cannot be guaranteed.

Reference:

Villwock, A., 2023: Literature-based guiding principles for high-quality climate services. Deliverable D4.1 of the Climateurop2 Project. Doi: [10.5281/zenodo.14033429](https://doi.org/10.5281/zenodo.14033429)