

# Standardisation of Climate Services to Better Support Climate Adaptation

Jorge Paz and Climateurope2 consortium

TECNALIA

6th European Climate Change Adaptation  
Conference 2023, Dublin, 21 June 2023

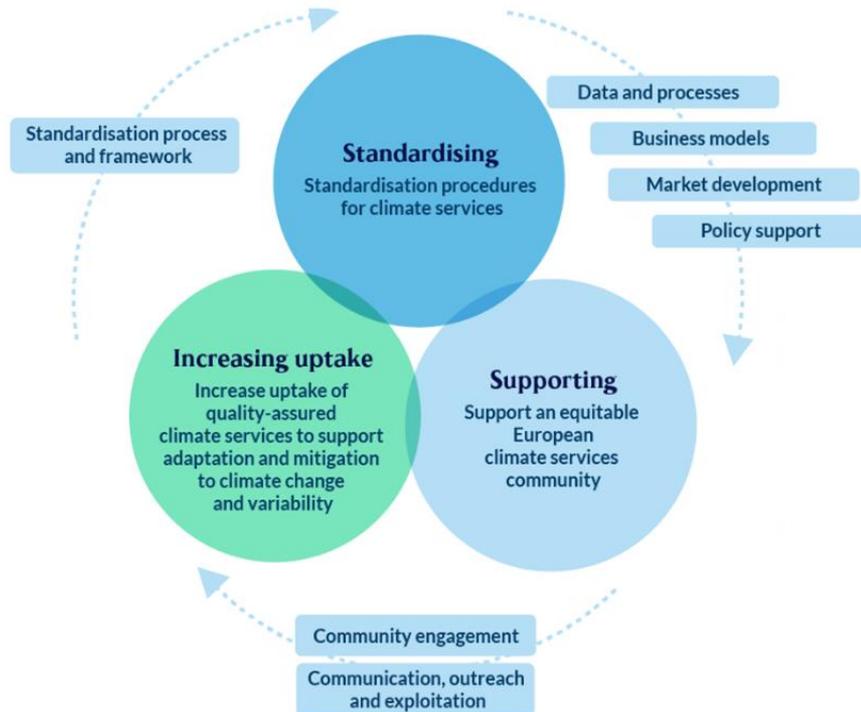
*This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101056933.*



Funded by  
the European Union



## Supporting and standardising climate services in Europe and beyond



**Climateurope2 is a Horizon Europe Coordination and Support Action** that will run from 2022-2027. The project aims to support and develop the community of climate services in Europe. It also aims to increase the uptake of climate services and their standardisation process. **Climate services** are information and knowledge that can help people and organizations deal with the impacts of climate variability and climate change.

**JOIN OUR NETWORK**

<https://climateurope2.eu>

## Target groups





European  
Commission

| **Climateurope2**

## CONTACT

jorge.paz@tecnalia.com  
asun.lerastclair@bsc.es

## CONNECT

infoclimateurope2@bsc.es  
climateurope2.eu

 @climateurope2

 climateurope2

# Thank you

*This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101056933. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.*



Funded by  
the European Union

# Chris Hewitt

Director, WMO Climate Services Branch

Formerly Head of International Climate Services, Met Office, UK

Honorary Professor, University of Southern Queensland, Australia

Honorary Professor, University of Bristol, UK



To what extent can standards enable the uptake of climate services and support climate adaptation?

---



# To what extent can standards enable the growth of the climate service market?

Murray Dale

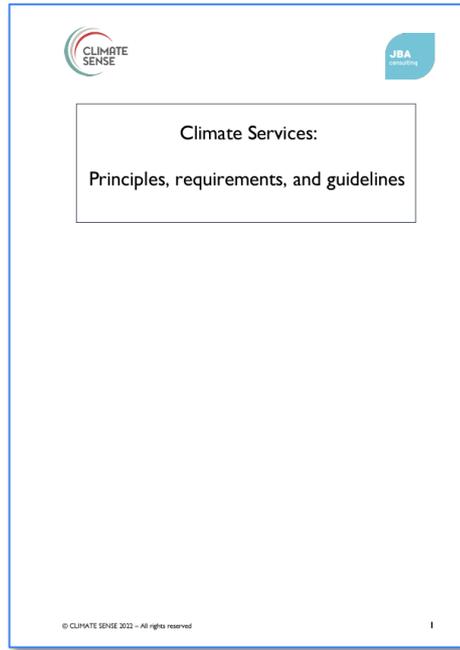
European Climate Change Adaptation conference

21<sup>st</sup> June 2023

[www.jbaconsulting.com](http://www.jbaconsulting.com)



# A standard for climate services



Released 1<sup>st</sup> November 2022

Available here:

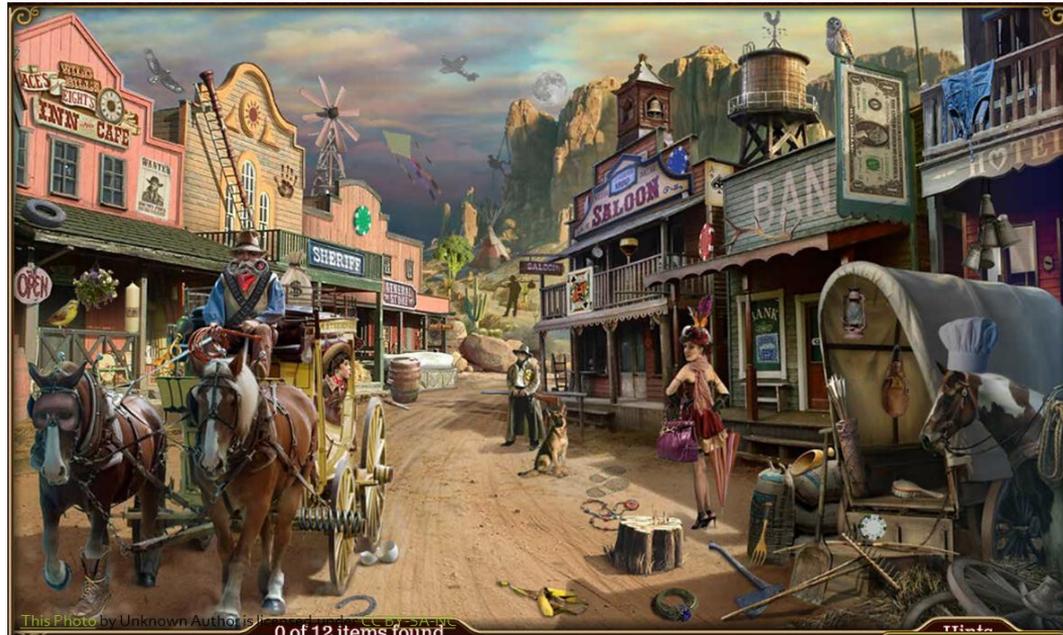


Type in 'climate services standard' in UKCR site search box

<https://www.ukclimateresilience.org/wp-content/uploads/2021/01/Climate-Services-Standard-Final-for-Publication.pdf>



# Why do this?



# Benefits of standards for climate services

1. A standard builds CONFIDENCE and TRUST in the services that are being provided and can be used
2. A standard will encourage climate service providers to improve the QUALITY of their services, by striving for demonstrable good practice
3. A standard will improve the TRANSPARENCY of climate service products and procedures
4. A standard will increase the ACCOUNTABILITY of climate service providers
5. A standard provides a BENCHMARK for climate services, aiming to reduce the prevalence or use of services which do not meet this standard
6. A standard can help CONNECT decisions and their implementation with the most appropriate climate services and/or products
7. A standard can SUPPORT PROVIDERS who are not comfortable offering a user-requested climate service, though could offer alternatives that better align with the standard principles
8. A standard can support ETHICAL considerations such as equitable access and integrity of climate services



# Standards growing climate services market?

1. 'Market' will dictate what climate services it wants
2. Providers of services have produced services, are producing and will produce services **with or without** a standard / guidance
3. Standards may not grow the market...
4. ...but they may improve the market, and, importantly, improve the services so that they result in better outcomes for users, e.g.
  - a) Avoiding 'poor info' on which to make decisions
  - b) Save reworking / save cost
  - c) Grow knowledge of users and providers of what services are possible / realistic
  - d) Ultimately help protect humanity and the environment from harmful climate impacts



# What are climate service users demanding that standards can contribute to?

Marta Terrado, BSC

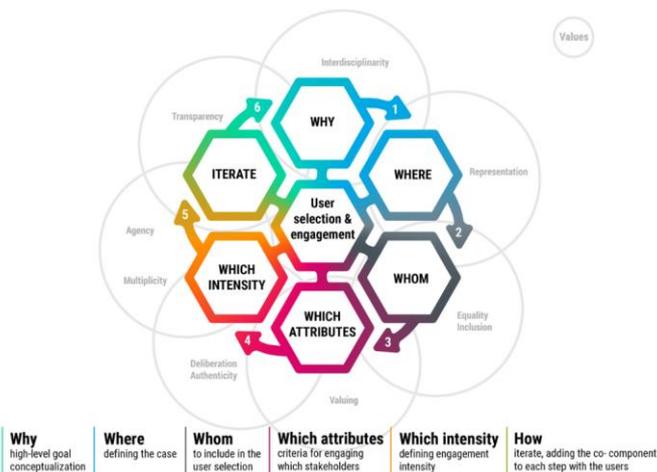
- **Guidance on how the data and information is intended (and not intended) to be used** (include details about data provenance, suitability, completeness, associated uncertainty and methodologies used to produce the data)
- **Help to identify climate service providers** – as well as **(types of) climate services** - that are more appropriate for them because they are more able to meet their needs (often difficult to navigate the plethora of offer)
- Ensure that the climate services they are using have the **level of quality needed** for their expectations (i.e. importance of providing a skill value)



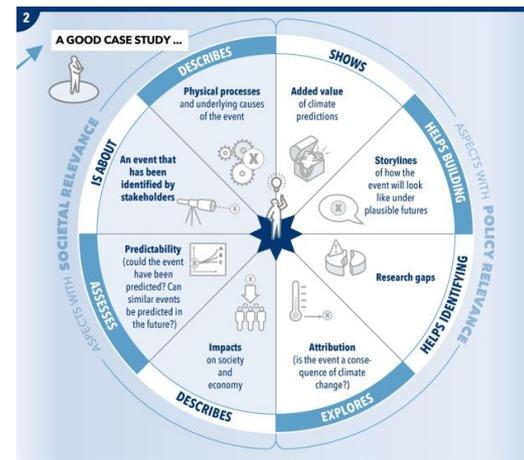
# What are climate service users demanding that standards can contribute to?

Marta Terrado, BSC

- **Guidance on user selection and engagement for coproduction**, integrating values of participatory science such as legitimacy, representativity and agency.
- **Apply appropriate methods to co-define the case study**: which time frames, variables, locations, resolution, uncertainty information, etc. are the most relevant regarding user needs and decision-making context.



Baulenas et al. (2023) User Selection and Engagement for Climate Services Coproduction. *Weather Clim.Soc.*



Terrado et al. (2023) Good practice for knowledge co-development through climate related case studies. *Clim. Risk Manage.*

# What are climate service users demanding that standards can contribute to?

Marta Terrado, BSC

- **Use inclusive visualisations** that apply a user-centered design approach, using interaction in a suitable way, paying attention to information architecture or selecting the right type of representation and visual encoding.

**Table 1** Recommendations from other disciplines and aspects that can improve the efficiency of climate services visualisations

Discipline	Aspects	Recommendation
User experience	User-centred design (UCD)	<ul style="list-style-type: none"><li>- Gather user requirements using participatory approaches</li><li>- Keep information simple and digestible</li><li>- Involve users from the initial analysis to the final evaluation stage</li><li>- Explore multiple visualisation options with users</li><li>- Assess user performance in quantitative and qualitative terms</li></ul>
	Interaction design	<ul style="list-style-type: none"><li>- Include interactive elements and visual features appropriate for users' skills in an intuitive way (e.g. select, zoom, sort and filtering options)</li><li>- Ensure that interactions have a visible response for users</li><li>- Use progressive disclosure of information when appropriate</li><li>- Include hyperlinks and tooltips for contextualisation</li><li>- Consider multi-device visualisation options</li></ul>
	Personalisation	<ul style="list-style-type: none"><li>- Allow users to customise the display reflecting individual preferences</li></ul>
	Error prevention and system status	<ul style="list-style-type: none"><li>- Avoid ambiguous visual encoding of key information</li><li>- Use selectors rather than open fields to minimise mistakes</li><li>- Use indicators of system status</li><li>- Use confirmation questions</li></ul>
	Information architecture	<ul style="list-style-type: none"><li>- Have a clear hierarchy of the information (e.g. take into account fields' dependencies, navigation)</li><li>- Adapt terminology and language to the user's context</li><li>- Use terminology consistently (e.g. avoid using different terms for the same concept)</li><li>- Reduce jargon and ambiguous terms</li><li>- Add tooltips and links to glossaries and extended descriptions</li><li>- Ensure that help documentation is easy to find</li></ul>



*Terrado et al. (2022) Towards more effective visualisations in climate services: Good practices and recommendations. Clim. Change*

# Getting to know the audience

Join at [menti.com](https://www.menti.com) use code 3148 9408

 Mentimeter

## Instructions

Go to

[www.menti.com](https://www.menti.com)

Enter the code

3148 9408



Or use QR code



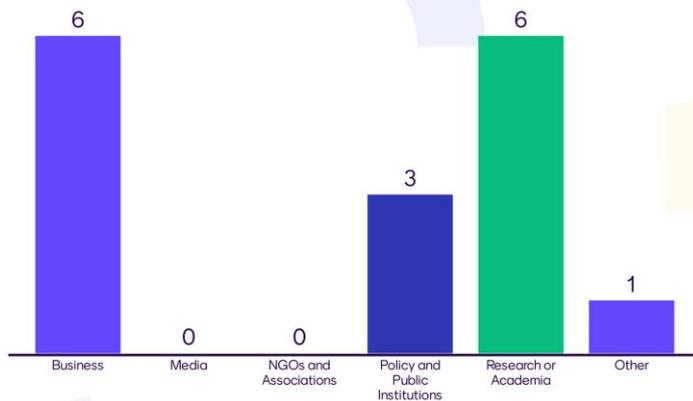
**tecnal:a**  
MEMBER OF BASQUE RESEARCH  
& TECHNOLOGY ALLIANCE

 **Barcelona  
Supercomputing  
Center**  
Centro Nacional de Supercomputación

# Menti results

Mentimeter

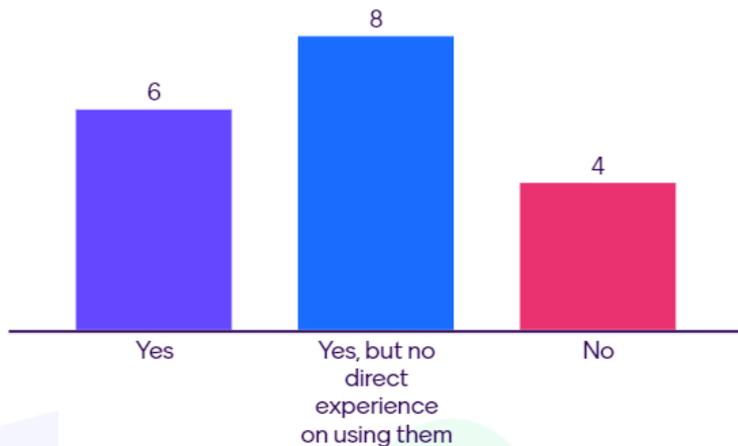
## What is your professional background?



16

# Menti results

Are you aware of the ISO standards on adaptation (e.g. ISO 14090 etc.)?



# Menti results



How can standards support climate services?

19 Answers

Speed up their development

By improving the quality of services they can stimulate demand in the services

Avoid maladaptation

Building trust and confidence

Assure transparency

Extent the term climate services to include those who are at the interface between providers of information and users

Sharing information in terms of inputs and outputs permittin an actual interoperability

Conventions on uncertainty estimates

Transparency



# Menti results



How can standards support climate services? 19 Answers

Strive for equity / justice

Customer rights

Transparency and confidence

Providing benchmarks and frameworks for new products

They can give guidance on how better engage users in their design and ensure the quality of data and processes

building a community

Create standardised conventions, remove rogue actors

Should really just provide the minimum protection for the consumer - as in all industries. Don't make it protectionist.

Facilitating information and communication (by alignment to existent practitioners tools and templates)

