EVOLUCION Y FUTURO DE LOS SERVICIOS CLIMATICOS
EVOLUTION AND FUTURE OF CLIMATE SERVICES

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SUMMARY

Climate services are the provision of climate information for use in decision-making taking into account the context and values of those involved. As climate information is only one, possibly relatively minor, element of what is needed by those climate-sensitive decision makers, climate services need to be integrated with other information or services of relevance to the decision-makers. This creates much of the context to be taken into account in the co-production approaches typically used in climate services to create value. This presentation will describe the recent evolution, landscape, and market of climate services, the actors in the landscape, what climate services are being used for, and highlight some of the successes and gaps. The presentation will be based on experiences from research projects and service contracts.

More frequent extreme high temperatures and droughts are just some examples of the impacts that we are experiencing due to the combination of climate change and natural climate variability. Society at large is in dire need of preparing for climate change, mitigating its causes, and paving the way for a sustainable and equitable future. Communities, organisations, and institutions increasingly demand support to address their climate-sensitive, decision-making processes.

A key element for the adaptation to and mitigation of anthropogenic climate change is the availability and use of climate information of demonstrable quality for decision-making. Climate services, understood as the provision of climate information (where climate typically relates to time scales from months and longer) for use in decision-making taking into account the context and values of those involved, aim to address this need.

Climate services have been provided and used in some form since climate information was made available in the 20th Century, if not before, although they were not usually referred to as climate services at the time. It is during the course of this century that the term has started to gain traction and be used in a more formal way. This has been the result of major advancements in developing the scientific and technical capabilities that can be of use or value to society and decision-makers, and a growing interest in the potential value of the services from society and decision-makers.

Climate services are an integral part of the United Nations Framework Convention on Climate Change, the Intergovernmental Panel on Climate Change's Assessment Reports, national adaptation plans, investments in both the public and private sectors, and strategic decisions of a growing number of sectors. In all these cases, the co-production, with more or less involvement of the parties, of tailored climate information is the core of the service. It is important to note that climate information is often only one, possibly relatively minor, element of what is needed by the recipients of the climate service for their decisions. Climate services need to be integrated with other information or services of relevance to the decision-makers, which are part of the context to be taken into account by the climate service, to create value. This implies that climate service providers should identify and understand as many of the different links in the value chain as possible, identifying key actors to engage with or collaborate with to co-develop services of value. This is not a trivial task because the number and diversity of individuals and organisations that make up the landscape of climate services is continuously evolving.

A climate service is only worth delivering if it is going to be used by someone to influence an outcome. A demand-driven approach to the development of services, as opposed to a capability-driven approach, is therefore clearly important. Decision-makers are more likely to use the service when the providers strive for salience, credibility, and legitimacy of the information they provide and ensure the information is accessible, relevant and usable. There has been impressive progress made developing, delivering, and using climate services in what is a fairly new domain and market. However, climate services have been considered often of not having been sufficiently integrated into climate-sensitive sectors to be useful. This is partly due to the complexity of climate services needing to be user-tailored, co-produced, transparent, and accessible. Given this complexity, to analyse the climate

services it is useful to identify four interrelated components: a) the decision-making context, where climate services need to deliver value, b) the ecosystem of actors and co-creation processes involved, c) the different knowledge systems, information, and processes that contribute to developing successful climate services, and d) the delivery mode and its evaluation.

Standardisation is an approach that can play an important role in addressing some of the gaps identified in climate services and help create a market that satisfies the growing requirements. We are surrounded by standards and norms that describe how things should be produced, should work or are best developed and implemented. Even when in certain cases there are no formal standards, we can still find descriptions, sets of requirements or conventions generated by the communities involved that help to ensure product functionality, compatibility, and/or interoperability. Standards, protocols, recommendations, and best practices can guide us in the development, delivery, traceability, market stimulation, and improvement of climate services over time. They are the basis of quality-assured climate services, necessary for the development of a trustworthy market. However, there is not yet a set of climate services standards nor agreement on the criteria and spectrum of actors necessary for defining the standards and, whenever needed, best practices and guidance. The Horizon Europe Climateurope2 project will be presented as the strategy followed by the European Commission to develop bottom-up standards for climate services. The recommendations formulated will facilitate the soundness of the methods and approaches, ensure the traceability of the product, and lead to the necessary continuous improvement over time.

This presentation will describe the recent evolution and landscape of climate services, the actors in the landscape, what climate services are being used for, and highlight some of the successes and problems. The presentation will be based on our experience in many international activities over the past 15 years, particularly in European-funded projects where there has been a huge investment in developing climate services and stimulating a market.