



*A European research  
and innovation*

# Roadmap

## for Climate Services

**Andrea TILCHE**  
European Commission

Research and  
Innovation

# A strategic approach to Climate Services in Horizon 2020



- Horizon 2020 "Societal Challenges": solution-oriented research and innovation, policy development through R&I targeted funding
- Focus in Horizon 2020 SC5 on very few policy priorities addressing solutions to climate change challenges:
  - The development of a market for **Climate Services**
  - The development of a medium-to-long-term **deep decarbonisation** initiative
  - The attention to climate change hot spots: the **Arctic**

## Climate Services

*The transformation of climate-related data – together with other relevant information – into customised products such as projections, forecasts, information, trends, economic analyses, assessments (including technology assessments), counselling on best practices, development and evaluation of solutions and any other service in relation to climate that may be of use for the society at large.*

# The road to the Roadmap



- Workshop on Climate Services (18 March 2014) in Brussels
- SC5 Advisory Group report on Climate Services (May 2014)
- Establishment of an Expert Group for drafting a Roadmap (June 2014)
- Roadmap publication (February 2015)
- Workshop for the Roadmap presentation (17 March 2015)

## Expert Group composition

### **Roger Street, Rapporteur**

Director of the UK Climate Impacts Programme (UKCIP), University of Oxford and member of the Joint Programming Initiative on Climate

### **Martin Parry**

Centre for Environmental Policy, Imperial College London and Department of Geography, University of Birmingham

### **Jesse Scott,**

Member of the Gas, Coal, and Power Markets team, International Energy Agency, Paris

### **Daniela Jacob,**

Acting Director of the Climate Service Centre 2.0, an independent establishment at the Helmholtz-Zentrum Geesthacht, Hamburg

### **Tania Runge,**

Senior Policy Advisor, Copa-Cogeca secretariat  
Chair of the Stakeholder Advisory Board of FACCE JPI

The work was carried out in cooperation with various Commission Services and with the participation of ECMWF, the EIT Climate-KIC, and the SC5 Advisory Group.

# Decision Making under a Changing Climate

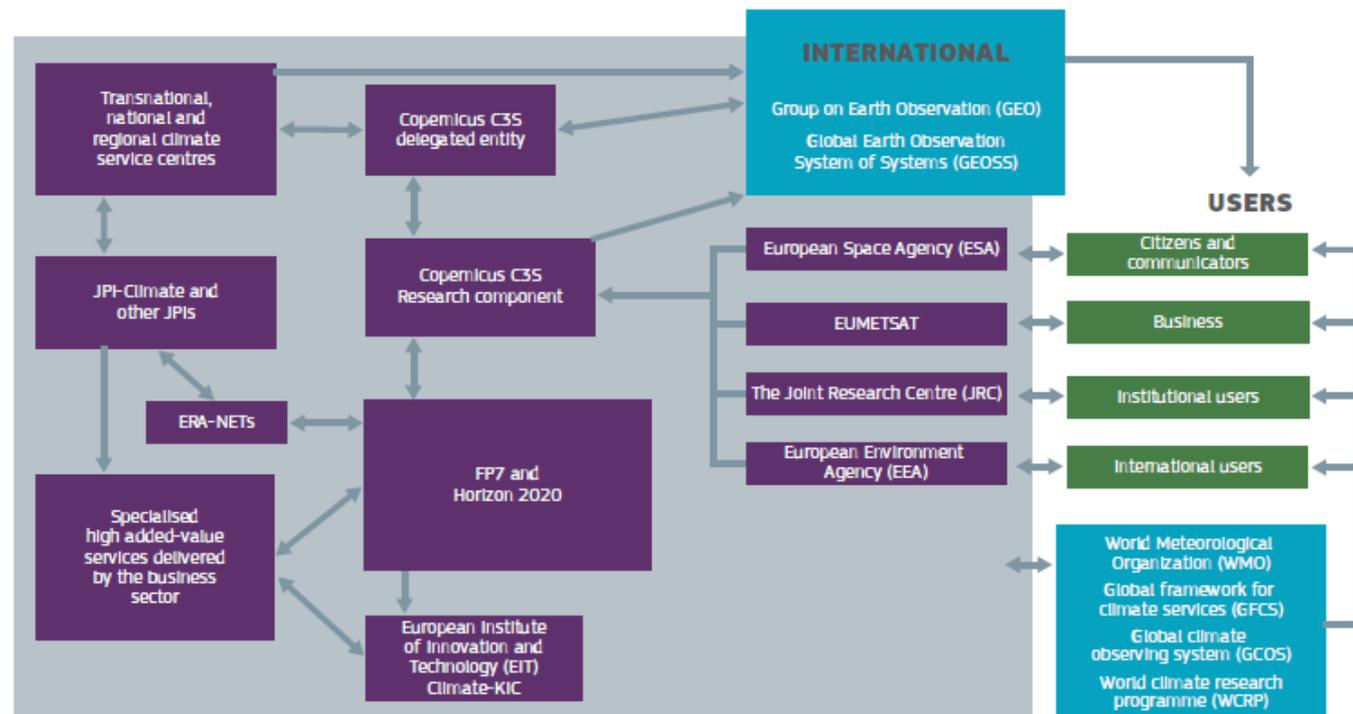


- Enabling a range of decision makers to make more informed decisions in relation to risks, opportunities and response management
- Demand is relatively unknown (fragmented)
  - The potential is largely untapped;
  - Community and infrastructure insufficient to support development; and services are primarily supply-driven and to some degree user informed
- Move to ***user-driven and science informed*** – service focus to climate services
- Enabling the growth of a "market of CS" where public and private sector entities collaborate to realise the vision

# Linking the Vision to the Context

- This implies a cooperation among different initiatives and institutions, where the public sector should secure the delivering on a free and open access of a broad layer of data and data products, allowing the delivering by downstream actors (public or private) of specialised and targeted climate services to specific users
- Contributing to and benefiting from the GFCS

Scheme of relationships within the European climate services landscape



# Linking the Vision to the Context Stakeholders' Perspectives



## **Drivers or reasons encouraging the use of climate services:**

- Economic benefits (cost savings); corporate social responsibility and policy push

## **Constraints in using climate services:**

- Difficulty in integrating what available with decision logic/framing; different timeframes; and difficulty translating implications into economic/monetary terms
- Reluctance to adopt new decision-making and planning methods

## **Attributes and modes of required services:**

- Reliability, fit-for-purpose, and usability
- Bulk of core, publicly funded data are expected to be accessible free of charge – willingness to pay for customised, integrated services where benefits are demonstrated
- Trust is important as it is the use of existing communities as an entry point ←

## **Preferred user-provider relationships:**

- Public administration/academia – Private sector/consultants ←

# The Roadmap Challenges



3 main Challenges, articulated on 9 Main Activities and 25 Specific Actions over three different time frames

Use of trans-disciplinary approaches (co-design, co-development) and demonstration of the real added value provided in order to fuel market growth

Focus on early wins and mature sectors initially (starting with a call for ideas), but also addressing the challenges associated with less mature sectors and areas

Pilot studies to test and validate proposed methods

Demonstration projects and case studies to promote and to enhance learning

# The Roadmap Challenges

Enabling  
market growth



European  
Commission

Main activities	Specific actions
<b>Challenge 1: Enabling market growth</b>	
1.1: <i>Assessing the nature of climate services market.</i>	(a) Assessing the climate services market (demand and supply). (b) Translating users' needs into services and access required. (c) Exploring the public and private domains of the market.
1.2: <i>Growing the climate services market.</i>	(a) Developing foresight into perspective market growth: identifying untapped potentials, and measures to promote market growth. (b) Establishing the means of enhancing the awareness of, and promoting, climate services. (c) Developing appropriate business models for the provision of climate services.
1.3: <i>Demonstrating the added value.</i>	(a) Identifying mature markets and front-runners. (b) Demonstrating the impacts and full value of climate services as standalone services and/or integrated into broader decision-support systems.

**Understand the demand and supply sides** of the market across Europe and support them as they evolve and grow

Identify where there is **potential for growth**

Critical are **synergistic relationships between key players on the supply side** – C3S and national climate services, and private sector providers and purveyors

**A vibrant healthy market dynamic**

- Broad and consistent layer of public, **free and open access** data, data products, model results, indices and climate information
- Also be used to promote the growth of actors providing **customised high added-value services** and service products to users



Main activities	Specific actions
<b>Challenge 2: Building the market framework</b>	
2.1: Communities and infrastructures to support and grow the climate services market.	(a) Developing a viable climate services community that engages users, providers, purveyors and researchers. (b) Building and widening capacity for climate services development, provision and use. (c) Computing, data and information technology (IT) infrastructure required to develop, deliver and support access/use of climate services.
2.2: Standards, quality assurance and control, access and legal aspects.	(a) Demonstrating credibility and assuring quality of climate services. (b) Implications of limited, and open and free access to data and information for services supply and demand. (c) Liability in providing climate services and market implications. (d) Intellectual property (IP) implications of co-design, co-development and co-delivery.
2.3: International cooperation.	(a) Engaging the European climate service community internationally. (b) Supporting the growth of climate service capacities (demand and supply) within least developed countries (LDCs), with a focus on Africa.

- Building and supporting the sustainability of a viable/vibrant European climate service **community** – engaging users, providers and purveyors, innovators and researchers
- Building and **widening the capacity** of those using, developing and delivering climate services across Europe – investments in growing the market in Europe and internationally
- Ensuring a **computing and IT infrastructure** that can support the market and its growth
- Improve the **framework conditions**, by addressing barriers, standards, IP, QA/QC, legal issues
- Engage in **international cooperation** (GFCS)



Main activities	Specific actions
<b>Challenge 3: Enhancing the quality and relevance of climate services</b>	
3.1: Information frameworks in support of climate services.	(a) Integration of physical and socioeconomic data and information.
	(b) Developing standards and protocols for data in support of vulnerability and risk assessments, and decision-support systems.
	(c) Establishing confidence in, and the role of uncertainty, in climate services and decision-support systems.
3.2: Strengthening the scientific basis and relevance of climate services.	(a) Improving modelling and prediction capacity relevant to improve climate services.
	(b) Developing tools and supportive resources needed by users - local, national and transnational.
	(c) Identifying and evaluating the implications of scientific development on climate processes in terms of improving climate services.
3.3: Climate information and end-users' needs: innovations and products.	(a) Making better use of available climate information and knowledge
	(b) Making innovations in service products and presentation.

Engaging users, providers, purveyors and researchers to co-design, co-develop and co-evaluate the improvements and innovations needed to better inform decision-making processes and the resulting decisions

- Drawing on and **integrating** the **physical**, land-use, socio-economic and other **non-physical data and information** and framing them to support decision-making processes
- Including appropriate framing of the associated **uncertainties**
- Improve **modelling and predictive capabilities** at various space and time scales through a wide R&I agenda
- Make results and information more **understandable and usable**

# Towards Roadmap Implementation



Benefits of an agenda and shared approach:

- Add value to existing investments in Copernicus, GEOSS and Climate-ADAPT
- Support development of national climate services and the growth of the associated business sectors

Focus on solution-oriented investments with H2020 acting as a bridge between the users and the science

Timeframe for implementation:

- Short-term 2015-2017;
- Medium-term 2017-2020 and
- Long-term defined as 2020 and beyond.



A flourishing climate service market has the potential to provide the intelligence for a resilient and low-carbon Europe

This Roadmap will help establishing a framework for engaging the relevant actors and stakeholders, and the basis for finding solutions and pathways that facilitate the development of the market that will deliver benefits to society

Demand-driven and science informed!

