



MArket Research for a Climate  
services Observatory

# A panorama of climate services in Europe

Climate Sprint: Accelerating Climate Solutions

S2S4E Innovation Camp

Paris, 13 November 2019

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This project has received funding from the EU's Horizon 2020 research and innovation programme under Grant Agreement No 730272.

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# Understanding the market of climate services in Europe: the MARCO project



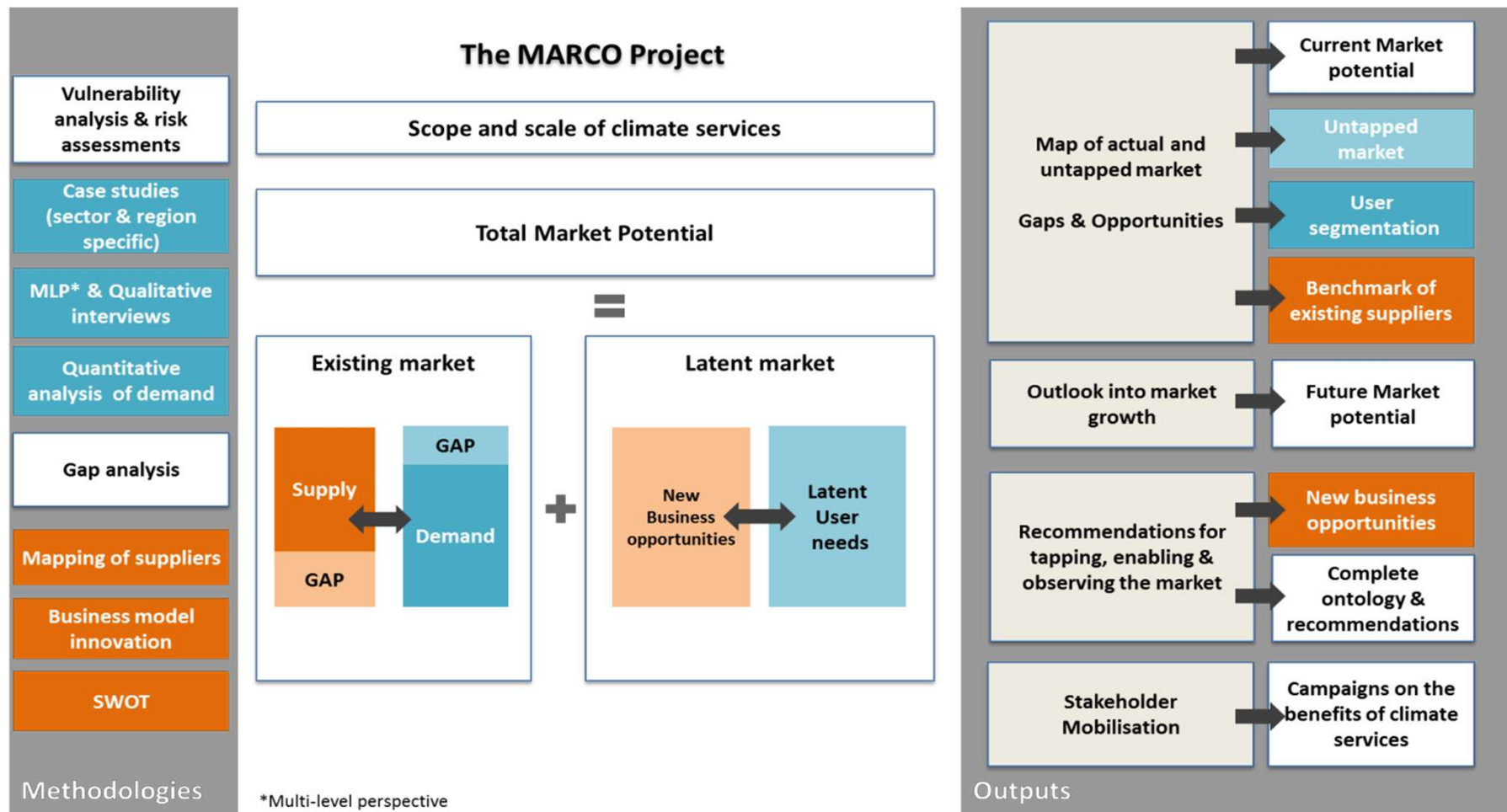
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# Objectives of the MARCO project

Gathering a consortium of market research firms, climate scientists, climate services practitioners, and innovation actors, to

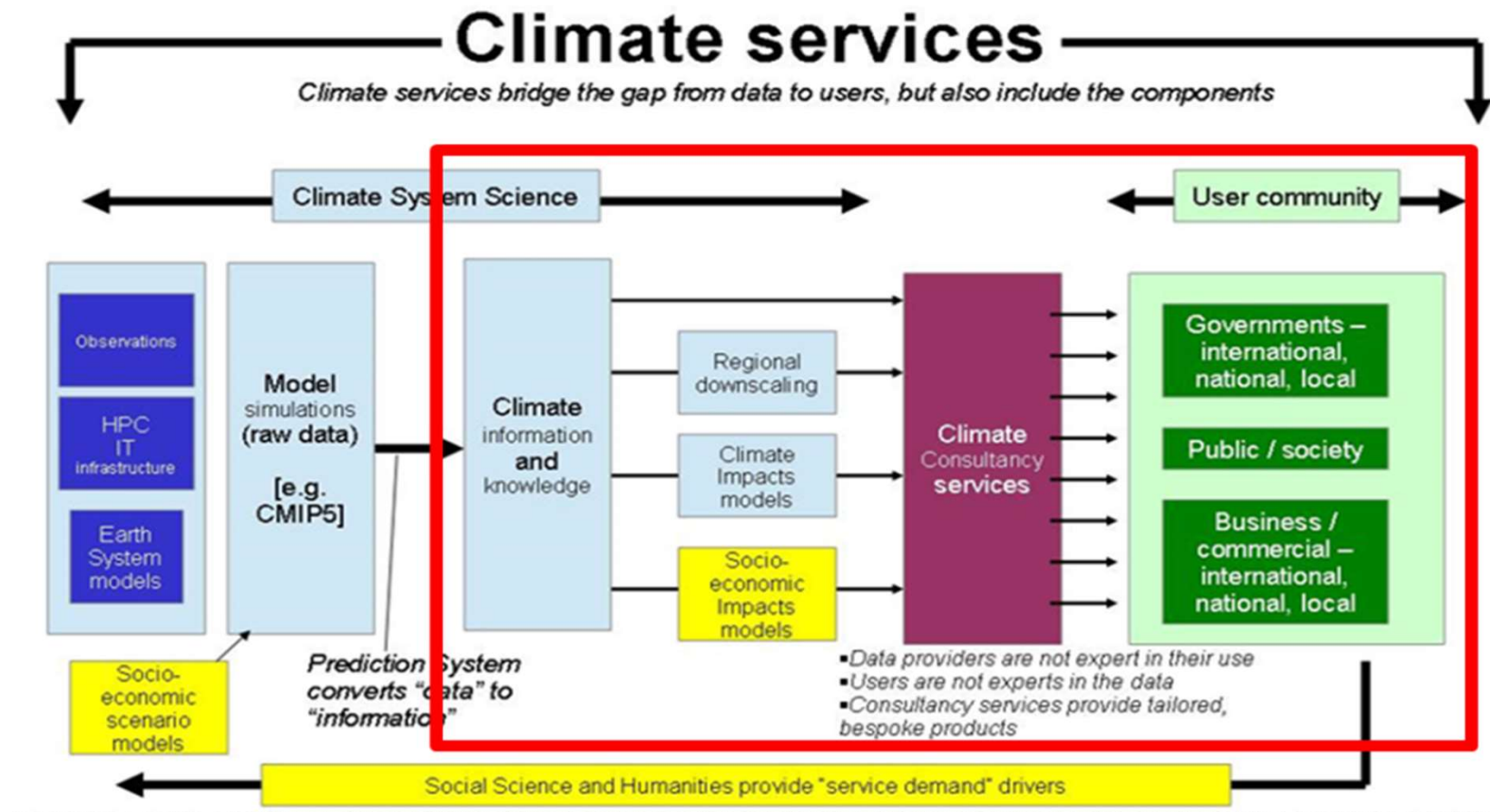
- Assess the EU CS market with an integrated approach
  - Benchmark existing suppliers and their business models
  - Quantify and qualify CS needs at EU level
  - Investigate case studies for validation
- Forecast future user needs and assess market growth
- Lead to market opportunities and promote market growth
  - Identify market opportunities and new potential CS
  - Raise awareness and connect CS providers and users
  - Make recommendations on CS market structuration & observation

# MARCO project approach



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# EU Roadmap & MARCO



# The MARCO consortium

Identifying market opportunities



Smith



Providers' Database



New business models, market intelligence



Resilience monitoring & Forecast



Raising awareness



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# Bird eye's view of MARCO outcomes

**Identifying market opportunities**

9 case studies + Market size assessment + Qualitative demand analysis (trends, needs, competitors, uses, advantages...)

**Providers' Database**

1 supplier database with 500+ entries

**New business models, market intelligence**

Mapping of business models + Innovation models

**Resilience monitoring & Forecast**

Forecast and market potential on sectors

**Raising awareness**

Posters + 5 infographics on case studies + 1 video

# Snapshots on market demand & users' needs

- 90% of companies impacted by climate-related events within past 3 years / only 30% responded to those threats
- CS market growing by 6-8% per year but still immature: demand is largely latent
- CS presence not always easy to detect
- Climate change knowledge varies dramatically across sectors and users
- Many interviewees not readily able to say if they use CS or not
- Some reasons for not using CS:
  - data imprecision, inability to access reliable data
  - climate information considered more relevant to other roles
  - climate issues not high priority for the company
  - lack of awareness that climate information can be used at all
  - not having yet considered the benefits of incorporating climate information into traditional work duties





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# SWOT analysis EU / US



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# SWOT for the EU CS market (against US): institutional arrangements



# SWOT for the EU CS market: users



# SWOT for the EU CS market: suppliers



# SWOT for the EU CS market: inputs



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# The MARCO case studies



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# A trailblazing set of 9 case studies



**REAL ESTATE**  
DENMARK



**CRITICAL ENERGY  
INFRASTRUCTURES**  
GERMANY & POLAND



**FORESTRY & AGRICULTURE**  
FRANCE



**TOURISM**  
AUSTRIA



**WATER & SANITATION**  
CATALONIA



**MINING SECTOR**  
EU



**LEGAL SERVICES**  
UK



**RENEWABLE ENERGY**  
DENMARK



**URBAN INFRASTRUCTURE**  
GERMANY



# Case studies: framework conditions (1)

Case Study	Framework Conditions (positive)	Framework Conditions (negative)
<i>Real Estate (Copenhagen)</i>	+ 2011 Copenhagen Adaptation Plan sets clear overall strategy + DGNB Certificate adopts lifecycle approach to buildings + Demand is boosted by EU Flood Risk & Water Framework Directives	– Fragmented value chains: risk is not 'owned' – Investment in R&D and new service types is low – Basis for standards, policies, contracts is outdated
<i>Mining Sector (EU)</i>	+ Driven by TCFD and insurers, (larger multi-national) firms increasingly manage climate risks + Environmental Impact Assessments can drive uptake of climate services	– Adaptation frameworks are often unsupported by action – Tech advance uptake is slow, risk awareness low – Legal guidance/standards on managing climate risk are lacking





## Case studies: framework conditions (2)

Case Study	Framework Conditions (positive)	Framework Conditions (negative)
<i>Water &amp; Sanitation (Catalonia)</i>	<ul style="list-style-type: none"> <li>+ Nat'l and reg'l climate adaptation plans prioritise the water sector</li> <li>+ Catalonia's 2017 Climate Change Law addresses the water sector</li> <li>+ Water Framework Directive mandates integrated basin management</li> </ul>	<ul style="list-style-type: none"> <li>– The industry behaves reactively in response to risk and regulation</li> <li>– Sector-specific services &amp; narratives aimed at decision-makers are lacking</li> <li>– Public sector leadership is poor, climate resilience regulation wanting</li> </ul>
<i>Legal Services (UK)</i>	<ul style="list-style-type: none"> <li>+ UKELA, IBA, CIEL, ABA are putting climate risk on the sector's agenda</li> <li>+ Common Law is increasingly tested &amp; applied with regard to climate-related risk</li> </ul>	<ul style="list-style-type: none"> <li>– Sector-specific / framework adaptation regulation is poor</li> <li>– Sector knowledge regarding climate-related risk is low</li> <li>– Professional guidance &amp; training on climate-related legal issues still remain negligible</li> </ul>



# Case studies: CS needs by sector (1)

Case Study	Main Activities	Climate Service Needs
<i>Real Estate (Copenhagen)</i>	<ul style="list-style-type: none"> <li>- Urban zoning and planning</li> <li>- Master planning</li> <li>- Building design</li> <li>- Selection of materials</li> </ul>	<ul style="list-style-type: none"> <li>- Assessment of cost benefits &amp; co-benefits of real estate adaptation</li> <li>- Low-cost, business-oriented climate risk screening during feasibility stage</li> <li>- Future climate vulnerability of city parameters (e.g., peak storm flows)</li> <li>- &gt;certainty in short-medium term projections</li> </ul>
<i>Mining Sector (EU)</i>	<ul style="list-style-type: none"> <li>- Asset planning (e.g. permitting)</li> <li>- Decommissioning</li> <li>- Disaster planning &amp; management</li> </ul>	<ul style="list-style-type: none"> <li>- Extreme rainfall projections (&gt;20 years): intensity, duration, seasonality</li> <li>- Improved certainty in climate projections, clear statement of probability</li> <li>- Easier access to a central repository of climate data and information sources</li> </ul>



## Case studies: CS needs by sector (2)

Case Study	Main activities	Climate Service Needs
<i>Water &amp; Sanitation (Catalonia)</i>	<ul style="list-style-type: none"><li>- Water collection and purification</li><li>- Distribution</li><li>- Waste water transit and treatment</li><li>- Environmental management</li></ul>	<ul style="list-style-type: none"><li>- 'Translation' of climate information to public and private decision makers in an accessible format (incl. clear narrative)</li><li>- Improved high spatial resolution (seasonal) forecasts and decadal projections, applied to operational and strategic management of the water system</li></ul>
<i>Legal Services (UK)</i>	<ul style="list-style-type: none"><li>- Litigation prosecution / defense</li><li>- Compliance and due diligence</li><li>- Advice on duties and risks</li></ul>	<ul style="list-style-type: none"><li>- Capacity building to improve practice-specific understanding of climate-related risks</li><li>- Refined narrative statements of climate-related information (incl. certainty)</li><li>- Integrated, multi-variable socio-economic climate projections &amp; impact models</li></ul>



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# Recommendations from the MARCO project



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# Recommendations: identifying market opportunities

- *Recommendation 1: Strengthen market development in Central and Eastern Europe*
- *Recommendation 2: Support market development in new priority sectors*
- *Recommendation 3: Link public and private providers to develop more advanced climate services*
- *Recommendation 4: Develop more advanced / sophisticated climate services on seasonal to decadal time scales*

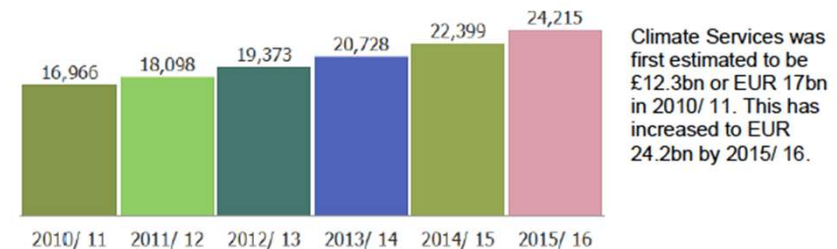


Table 4 - Priority sectors in the future

According to impacts, risks and vulnerabilities assessment	According to market growth rates
Water, Agriculture, Forestry, Biodiversity but also Energy, Transportation, Mining, Tourism, Health, Critical Energy Infrastructures	Agriculture, Forestry, Health Care, Tourism, Energy, Critical Energy Infrastructures, Mining

# Recommendations: providers' database & CS access

- *Recommendation 1: Increase visibility of climate service providers on a “market place”*
- *Recommendation 2: Improve and mainstream the taxonomy and/or the classification of climate services*
- *Recommendation 3: Develop a user-friendly tool to enable the selection of appropriate climate services*

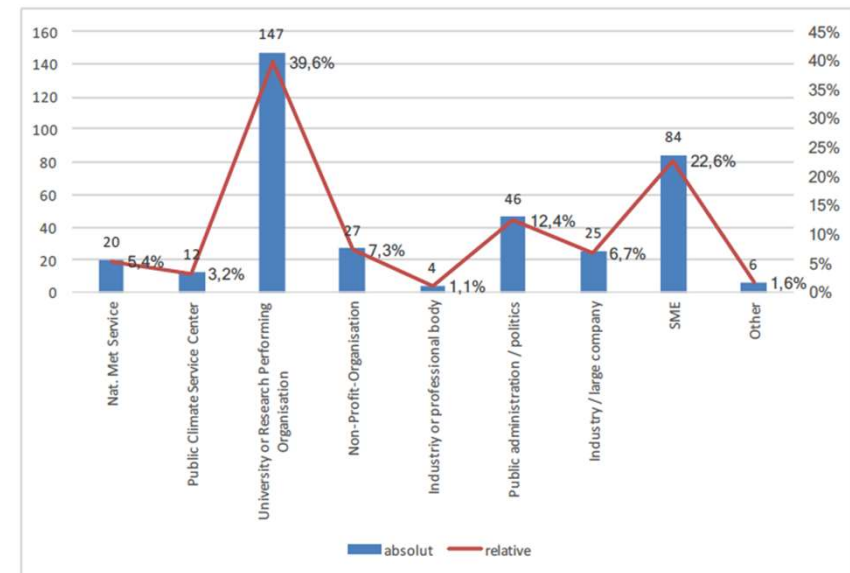


Figure 5: Absolute numbers of types of CS providers and relative share of total sample



# Recommendations: new business models, market intelligence

- *Recommendation 1: Develop more creative and diversified business models for specific types of providers*
- *Recommendation 2: Develop specific investment instruments / programmes oriented towards SMEs and early-stage developments*
- *Recommendation 3: Foster public-private partnerships*

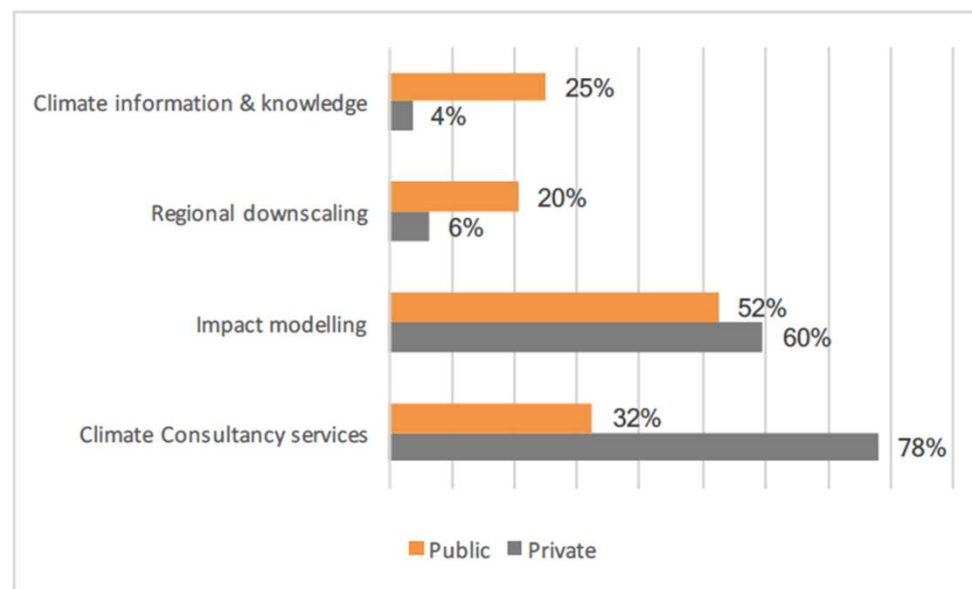


Figure 9: Relative share of public and private CS providers engaged in CS related activities



# Recommendations: resilience monitoring and forecast

- *Recommendation 1: Engage with the climate services community to challenge the market Intelligence*
- *Recommendation 2: Strengthen and harmonise climate resilience legal frameworks*
- *Recommendation 3: Track climate finance schemes and investments*

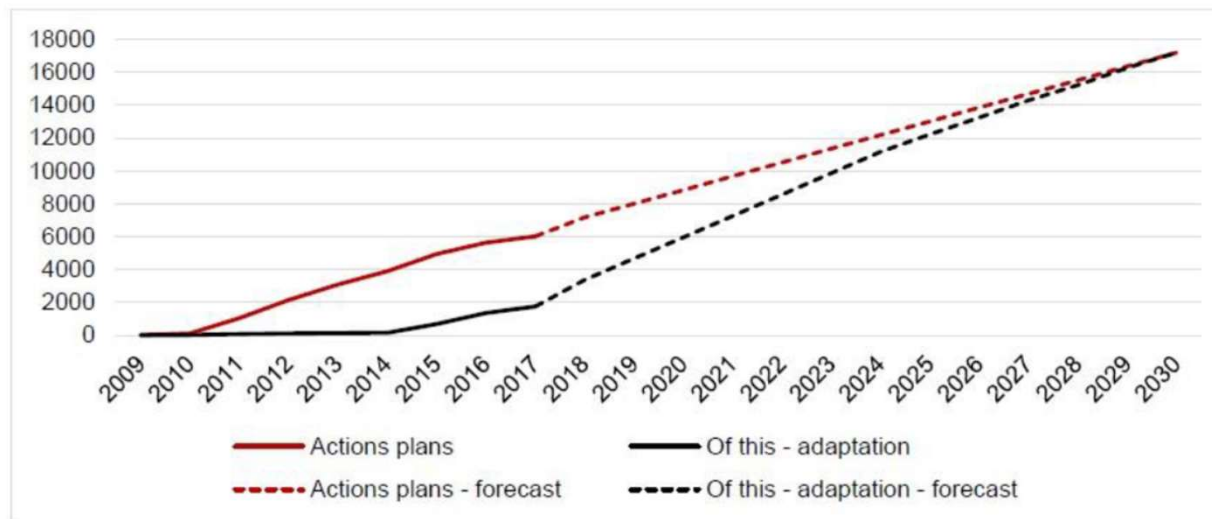


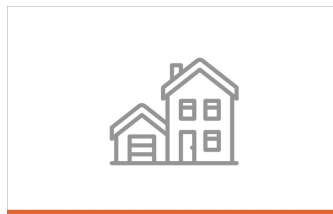
Figure 6 - Forecast for 2018-2030 - number of signatories to the Covenant of Mayors of Energy and Climate.



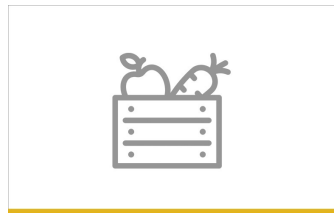


# Recommendations: raising awareness

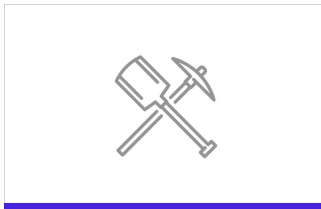
- *Recommendation 1: Showcase success stories*
- *Recommendation 2: Raise awareness of specific sectoral or regional climate-related risks and opportunities*



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# Towards an “Observatory” of the EU climate services market?



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# Prospects for a Market Observatory / Support Platform for Climate Services in the EU (1)

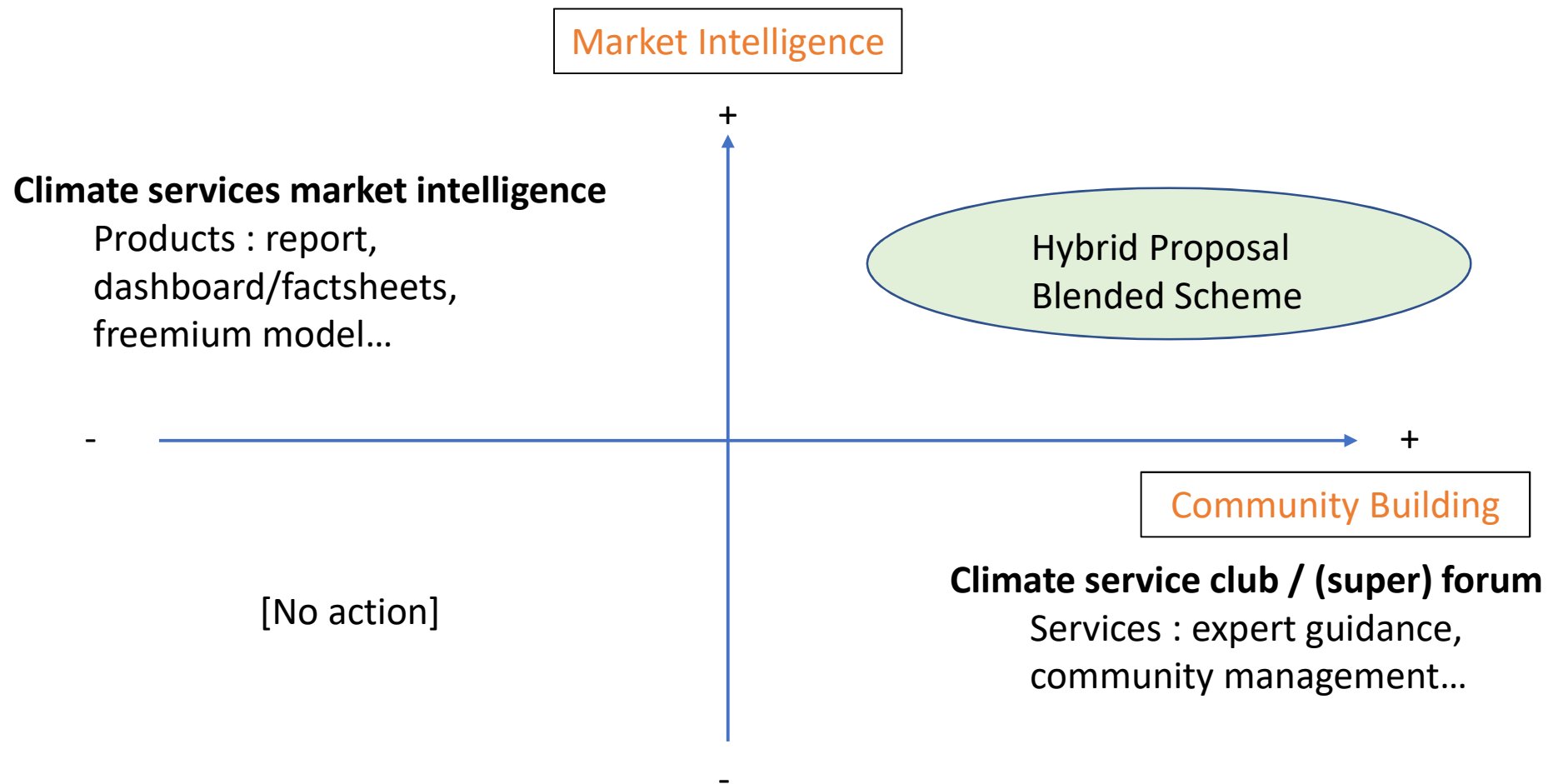
A **key challenge** is the lack of insight in, and overview of the climate services market across all types of actors:

- Significant variation in the understanding what a climate service constitutes
- Variety of indications of experts, active in different segments, on what are crucial next developments in terms of products and supporting innovations (e.g. in visualisation)

Recommendation: set up a **resource** on climate services

- providing **up-to-date quantitative** and **qualitative information** on the conditions of the climate services market, and
- fostering the **exchange of good practices** and **matchmaking features**

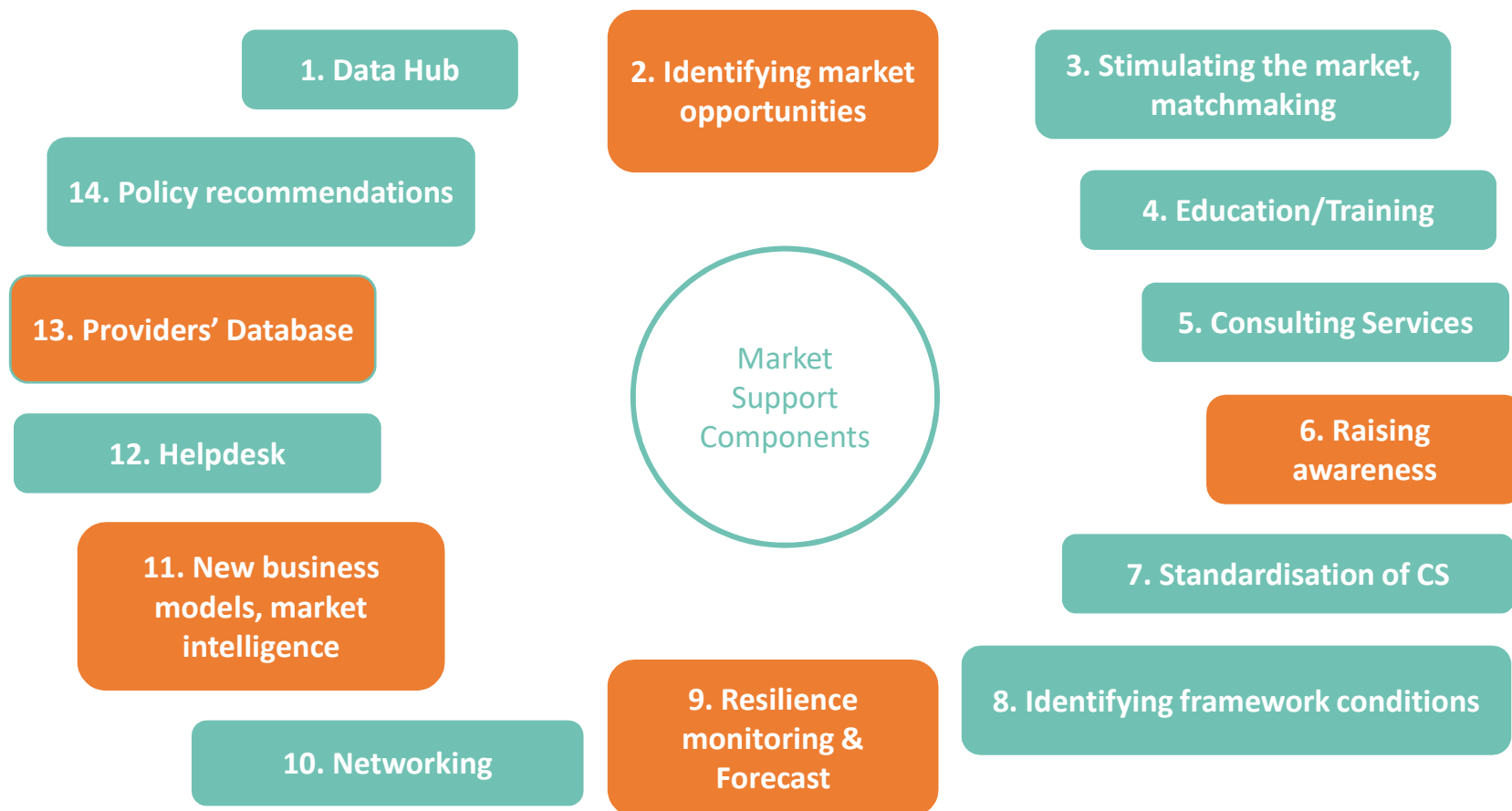
# Prospects for a Market Observatory / Support Platform for Climate Services in the EU (2)



# Identification of Market Support Components



# Support components addressed by MARCO



# Prospects for a Market Observatory / Support Platform for Climate Services in the EU (3)

## **Building on existing initiatives:**

- Copernicus C3S and CDS, EM-DAT, EEA monitoring data, Oasis Hub
- Progress fostered by ERA4CS and pursued by JPI Climate-led AXIS, with emphasis on the integration of physical and socioeconomic data
- GFCS, plus impact from TCFD & HLEG recommendations
- National platforms and instruments
- CSP, Climateurope...
- City and region networks such as ICLEI, C40, Covenant of Mayors etc.: disseminating and streamlining the integration of climate services in territorial climate, environment and energy action plans

# Prospects for a Market Observatory / Support Platform for Climate Services in the EU (4)

- For some components, need to clarify the information landscape, articulate existing mechanisms and facilitate navigation between them in more seamless ways
- For others, need to more substantially develop parts of the landscape where current offer is much more fragmentary and incomplete
- Wide margin of progression required to increase consistency across the market of climate services and understanding of the market for all categories of providers, purveyors, users and decision-makers
- Synergies with H2020 EU-MACS outcomes
- Feeding into other H2020 activities
- Benefit from EIT Climate-KIC partnership and other relevant ecosystems



# EU-level policy scenarios for climate service market development: State-centred

- State seen as only authoritative actor able to enforce sufficient action and oversee fairness
- State concerned that market failures prevent adequate and equitable resilience, raising risks for welfare losses and extra public sector costs in the future
- Climate intelligence constituent element of policy decision-making in most / all sectors
- Market of climate services vastly benefits from a broad array of duties to consider climate issues
- Separation of private and public CS domains not essential, yet may exist to some extent due to lobbying or EU legislation

# EU-level policy scenarios for climate service market development: business-centred

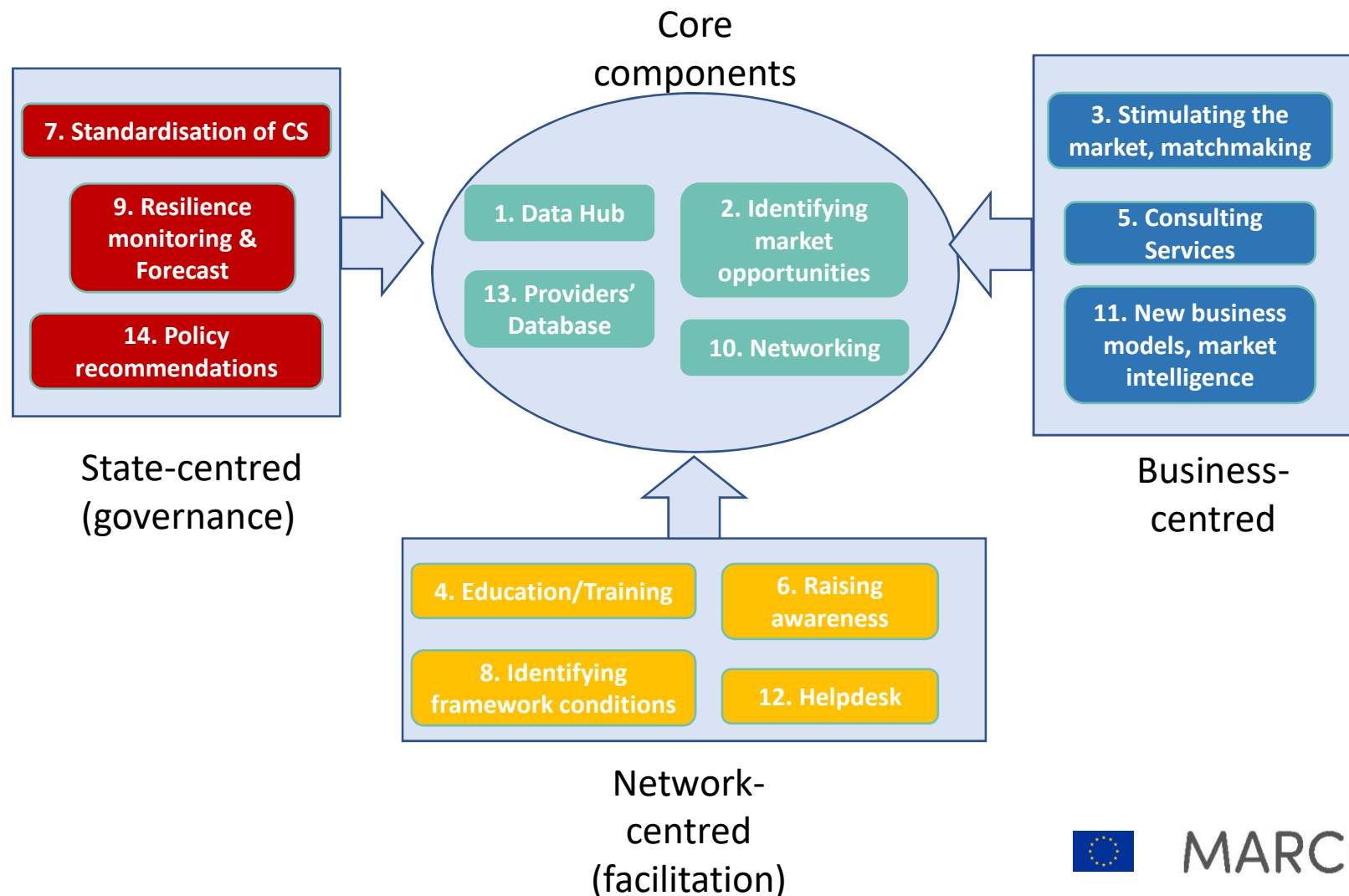
- Private actors can themselves best assess what is beneficial, provided that information is reliable and accessible
- Commercial provision generally seen as preferable over public provision
- Climate considered as far as market actors are willing to do so
- Urge for a commercially viable CS market, business interest in mind (e.g., CS support innovation in strategic high-tech industries or service sectors)
- State intervention only when self-regulation is difficult (e.g., international standards, quality assessment)
- Separation of private and public CS domains is a leading principle of this policy regime

# EU-level policy scenarios for climate service market development: network-centred

- Stakeholders capable of assessing own benefits, while seeing benefits of collaboration, especially by region or sector
- State deferring initiative to stakeholders but playing an important role in supporting & resourcing R&D, education, open data, etc.
- Regionalization and sectorization causing new coherence challenges for the state (e.g., equity in results  $\neq$  equity in resourcing); climate intelligence needs to be considered in public-private policy
- More local and citizen involvement may radically change innovation and its policy
- New forms of collaboration (public-private; across scales and definitions of costs & benefits) may require new legislation
- Market orientation towards citizen welfare and well-being



# Prospects for a Market Observatory / Support Platform for Climate Services in the EU (5)



# Observatory role in State-centred scenario

## International standardisation of climate services

- public authorities providing consistent, comparable & improved climate-related methodologies to all organisations engaged in climate action
- observatory in charge of (sectoral) standards establishment processes to support certification along an EU “Climate Accountability and Risk Directive”

## Observatory performing resilience monitoring and evaluation

- to track & measure socio-economic + environmental benefits of quality-assured CS
- showcasing effective integration within decision-making and development planning
- forecasting components to enable better long-term planning and foster systemic thinking independently from particular interests

## Policy recommendations: observatory pivotal in

- advocating the extensive use of climate services in different sectors
- proposing policy developments to ensure stronger match between market developments and actual needs

# Observatory role in business-centred scenario

Stimulating the market and fostering matchmaking: observatory to

- jointly define case-specific rules of engagement, s.t. developing services address actual needs, and best practices can be replicated to other sectors/regions
- enable matchmaking & creative interaction space between providers, purveyors and users, fostering synergetic collaborations, welcoming and guiding new market stakeholders

Brokering and other consulting services: observatory to

- offer advisory and tailored support system to private businesses willing to implement climate-proof options
- invite private businesses to implement packaged climate risk assessment modules, in order to evaluate climate vulnerability and identify options to address those risks

New business models and market intelligence: observatory to

- ensure that latest developments feed into comprehensive market intelligence, incl. regular analyses of evolutions and trends
- help SMEs to identify market niches, test innovative solutions, promote up-scaling of CS
- promote new, innovative business models that could attract new investors



# Observatory role in network-centred scenario

Education and training: observatory to play a critical role in building competences and ensuring the sharing and dissemination of best practices

Raising awareness: observatory to showcase

- communication products to inform public on growing scope of CS implementation
- successful case studies to incentivise businesses to better assess needs of climate risk management + citizens to increase climate literacy and adopt climate-proof solutions

Identifying framework conditions: observatory to

- focus on enabling conditions (infrastructural, technical, human and institutional organisational capacities) required to develop, provide and promote high-quality CS
- help civil society to foster greater coordination across (public and private) stakeholders and advocate more ambitious climate action as a societal goal

Helpdesk for any interested stakeholder in climate action and risk management, to

- identify appropriate existing services & link with knowledgeable experts
- improve the accessibility to climate solutions for non-expert stakeholders



# Supporting the different stakeholders of the value chain

	Climate Service Providers	Climate Service Purveyors	Climate Service Users	Policy Makers
<b>INPUTS</b>	<p>Practice transparency in use of climate-related data and in assumptions</p> <p>Monitor and communicate the benefits and cost-effectiveness of using climate services to key user groups</p>	<p>Foster the co-design of climate services</p>	<p>Engage in an intuitive marketplace that enables users to easily access providers that are capable of meeting their requirements</p>	<p>Strengthen cooperation and coordination between EU-initiatives, e.g. between public and private activities, and across different sectors</p>
<b>OUTPUTS</b>	<p>Develop climate services that address the capacities, language, performance indicators, and risk management systems of end-users</p>	<p>Explore new market niches following projections of future demand for products and services based on various climate change scenarios</p>	<p>Take part in training modules which demonstrate the added value of applying climate information</p>	<p>Increase incentives through legislation to take climate change into account</p>





# Next developments

- Keeping the momentum, updating data within a dynamic market
- Involving committed partners (also with EU-MACS consortium)
- Further engaging with other EC services (e.g DG RTD)
- Ensuring financial sustainability (e.g. blended financial mechanism, paid memberships)



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# Thank you!

*Coming soon (early 2020): a dedicated issue of the  
Journal of Climate Services, based on outcomes from the  
H2020 MARCO and EU-MACS projects*

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