POTENTIAL FOR CLIMATE SERVICES MARKET ENHANCEMENT AND RELATED INNOVATION FOR URBAN PLANNING

DELIVERABLE 4.3 – POLICY BRIEF

Raffaele Giordano[1]***, Ines Vaittinen***[2]***, Karoliina Pilli-Sihvola***[3]***, Ivan Portoghese***[1]***, Raffaele Matarrese***[1]

[1] Water Research Institute – National Research Council, Bari, Italy
[2] European Network of Living Lab, Brussels, Belgium
[3] Finnish Meteorological Institute, Helsinki, Finland

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WHAT HAMPERS THE USE OF CLIMATE SERVICES IN URBAN PLANNING?

There is a mounting international interest about **how to adapt urban areas to climate change**. This is mainly due to two reasons:

1) cities are everywhere

2) cities have high population density, capital assets, and key public and private services which makes them potential "hot spots" for climatic risk.

All this underscores the importance of climate change adaptation planning in cities. This process can be boosted by **improved use of climate services**.

Identifying and removing barriers and enhancing enablers for climate services market uptake for urban planning requires acknowledgment of the peculiarities of this sector: i) adaptation and mitigation are intertwined; ii) urban planning interventions for climate change adaptation focus on medium- to long-term time scales; iii) the urban planning process has a multi-actors dimension.

By means of interviews and workshops with urban planners and different stakeholders from two urban case studies, Helsinki and Bologna, we detected **the main barriers hampering climate service uptake, identified users' needs** and involved climate service users in a **co-development process** aiming at filling the gaps between the users and suppliers of climate services in urban planning.

KEY FINDINGS

USE OF CLIMATE SERVICES IN URBAN PLANNING VARIES

Although there is an increasing awareness of the role of informed decision making in urban planning for climate change adaptation, the use of climate services in the daily activities is still far from being the standard in most of the EU cities. Only few cities – Helsinki and Copenhagen to cite some examples – regularly use climate-related information for supporting urban planning. Yet, we know that uptake is spreading.

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URBAN CLIMATE SERVICES SHOULD BE ABLE TO WORK WITH DIVERSE DATA

Urban planning policies – i.e. land-use zoning, building and building codes, natural resource management, transportation, changes in the management of urban utilities such as waste and water – could facilitate adaptation. Therefore, having access to affordable, reliable and actionable climate-related information is of utmost importance. Planning processes for climate change adaptation are characterized by three main phases, i.e. understanding risks, planning the interventions, and monitoring and evaluating the effectiveness.

Each of these phases requires different information, with different temporal and spatial scales. In order to be effective, climate-related information needs to be integrated with socio-economic information, information on community and health. Others are meant to facilitate the sharing and access to previous experiences and consolidated knowledge (e.g. construction guidelines and best practices in adaptation).

Therefore, Climate Services for urban planning need to be conceived as platforms where different kinds of data and information can be integrated and retrieved.

CLIMATE SERVICES NEED TO FACILITATE THE SHARING OF INFORMATION

In complex organizations, such as large municipalities, most of the information needed for supporting the urban planning process for adaptation is already available. Nevertheless, the experiences collected in EU MACS showed that, often, the members of the organization have a limited knowledge of the information already available, notably beyond their own remit. This represents a barrier to the use of climate services.

Climate services need to be conceived not exclusively as supply of information, but also as shared platform though which the interactions among the different decision-makers are facilitated, enabling an effective information sharing process.

CLIMATE SERVICES SHOULD BE BASED ON INTEGRATED INFORMATION NEEDS

The information users, the information needed and how this information will be integrated in the urban planning process should be at the core of the CS design and implementation. Nevertheless, two key issues need to be addressed when designing CS for urban planning, that is: i) the information needs vary from one department to the other. This is mainly due to the different roles and responsibilities in a municipality. Therefore, efforts are needed in order to enable cooperation among the different departments within the municipality, and beyond the organization borders, involving other public institutions and private actors as well. Collaborative acquisition and use of CS is key in order to enhance the potential for CS market in urban planning. This, again, claims for innovative CS capable to integrated a wide range of data and skills.

CLIMATE SERVICES SHOULD BE CAPABLE OF HANDLING UNCERTAINTY

The measures contained in an urban plan for adaptation are characterized by long-term effects. This means that the uncertainty about the actual effectiveness of those measures is large. In this decision-making context, the adoption of the adaptive management approach – based on continuous monitoring and evaluation of the measures' effectiveness – could be useful to cope with the uncertainty. Therefore, the information provided through CS should allow urban planners to evaluate the effectiveness of the implemented measures, to learn from the observation, to detect unexpected side-effects, and to design adaptation measures.

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CO-DESIGN IS KEY FOR CLIMATE SERVICE DEVELOPMENT

The EU MACS findings demonstrated that co-designed approaches are needed to enhance the potential for CS market in urban planning. A Framework for Agile Living Labs was implemented in EU MACS. The process aimed at involving the users and producers in defining a common ground for climate service development.

The involvement of different stakeholders in defining the main characteristics of the climate service is a pre-requisite for overcoming the barriers to CS mainstreaming in urban planning.

The implemented approach aimed at drafting the architecture of climate services capable to meet the actual needs of the case studies through iterative cycles of prototyping and testing. The methodologies used allowed us to involve different potential users to define the main characteristics of a suitable CS and to test the functionality of the CS in supporting the collaborative decision-making process for adaptation to climate change. Moreover, the Living Lab approach highlighted the role of the citizens at the centre of the innovation process, as essential actors in creating sustainable, resilient, climate proof cities.

MAIN BARRIERS

The activities carried out within EU MACS allowed to detect the main barriers hampering the actual mainstreaming of CS in the urban planning for adaptation. It is worth noticing that the technical/scientific barriers cover only a limited set of the obstacles. Most barriers are related to the political and social dimensions of the urban planning process, as shown in the following table.

Type of Barriers	Sub-categories
Political	Short terms political cycles could represent a barrier to the adoption of long terms adaptation strategies
	Political focus is on mitigation rather than integrating also adaptation
	The fragmentation of the decision-making process hamper the design of a shared CS
	Lack of cooperation among the different department involved in the planning process
Economic	Insufficient human or financial resources
	Added-value of CS often unclear / difficult to measure
	Organizational setting, practices and routines are difficult to be changed
	Roles and responsibilities in urban adaptation are not always clearly defined.
Social	Different language vocabulary in science and practice
	Lack of community involvement in the planning process
	Lack of community awareness toward climate-related risks
Technological/scientific	Technical capacity within the organization
	Data format not coherent with data needs
	Missing standardization of information (forecast type, verification type, layout, terminologies)
	Difficulties in transferring tailored CS to other decision contexts
	Lack of cost/benefits assessment tools
	Lack of platform for enabling and supporting climate-related information sharing
Ethical	Missing or limited collaboration between providers and users (co-design)
	Lack of collaborative design, acquisition and use of CS
	Provision development is hampered by personnel / institutional interests
Legal/regulation	Reliance and/or dependence upon national policies and regulations
Others	Conflict time-scales or priorities (short-term interventions based on a long-term vision)

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CONCLUSIONS & RECOMMENDATIONS

Based on the EU-MACS analysis, the key solution to overcome the barriers in climate service use is to co-design climate services together with end users. This should be supported by rigorous SNA and information needs elicitation to better understand information flows and needs at the user side. Furthermore, co-designed climate services could account for the existing limits in the organization (e.g. municipality) information sharing process and could be adapted to the local institutional framework for urban planning. The experiments carried out in EU MACS demonstrated that a collaborative design, acquisition and use of CS, involving institutional actors, citizens and private actors, is feasible and can resolve broad scoped information need.

Most of the detected barriers to CS use relate to adaptation policy making: Mitigation is prioritised over adaptation; Short term policy cycles reduce the willingness to implement long-term adaptation measures; and the lack of tools for assessing the effectiveness of adaptation measures affects public awareness about the role of adaptation measures in reducing climate-related risks.

Full report: Giordano R., Pilli-Sihvola K., Harjanne A., Cortekar J., Matarrese R., Portoghese I., Bosello F., Del Piazzo E. (2018). Outlining the urban CS playing field – CS and risk management at urban level, the institutional structures, and the options for information sharing, EU-MACS Deliverable 4.1.

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