

Policy Brief: Sustainable Urban Communities

The PROTECT Project

PROTECT supports urgent action for **climate adaptation, mitigation, and resilience**. It enables public authorities to use state-of-the-art public procurement approaches in order to identify solutions – **Climate Services (CS) based on Earth Observation** – that best fit the specific and systemic needs of the public demand. The focus is on five application domains, namely: Energy & Utilities, Sustainable Urban Communities, Agriculture, Forestry and other Land use, Marine and Coastal Environments and Civil Security and Protection. PROTECT will source and assess existing and high-potential CS solutions and technologies that use Earth Observation data. It will engage with an extensive and varied community of procurers, facilitate the definition and aggregation of their needs and functional requirements for climate services, explaining, fostering and supporting a ‘buying with impact’ approach. PROTECT will **prepare the operational ground for one or more joint, cross border or coordinated pre-commercial procurement (PCP) processes**. At policy level, it will provide decision-makers for procurement, climate and policy, at EU, national, regional and local levels, with practical recommendations and guidelines to boost the use of innovation procurement for climate action.

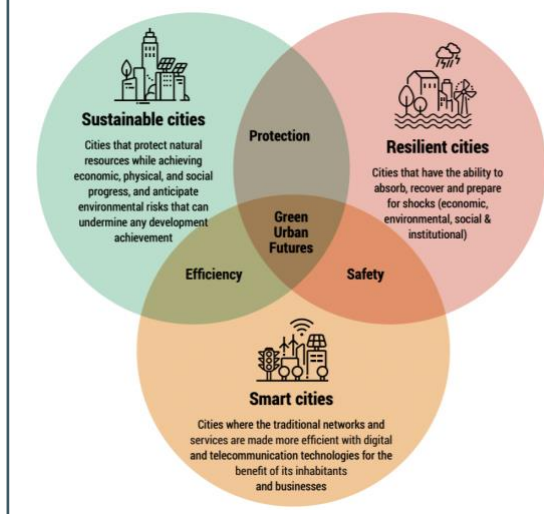
Summary

- Urban communities are growing globally, but cities are also **threatened by the effects of climate change**, such as extreme temperatures and weather events, resource scarcity, and air pollution [1].
- The trend towards sustainable urban communities requires innovation in the fields of **transport, circular economy, health, and air quality** monitoring [1].
- Climate Services using Earth Observation data can **support the development of climate-resilient urban infrastructure** and the monitoring of air pollution and urban emissions, promoting urban sustainability.

Recommendations

- To improve the air quality in European cities and meet the EU’s ambitious zero pollution targets **innovative solutions are required**.
- Climate Services utilising Earth Observation data can support urban communities in **monitoring air quality** as well as support its resilience to the multifaceted risks posed by climate change.
- A PCP (Box 1) call enables stakeholders from urban communities to trigger the development of innovative solutions that can **address the main challenges and opportunities** cities are exposed to.

Fig 1. Net-zero development in cities [1].



Box 1: Pre-commercial procurement

Pre-commercial Procurement (PCP) is a specific approach to procure R&D services that involves competitive development in phases, risk-benefit sharing under market conditions, and where there is a clear separation between the PCP and the deployment of commercial volumes of end-products (potential follow-up **Public Procurement of Innovative solutions - PPI**). PCP identifies the best possible solutions that can develop, by comparing alternative solution approaches from different technology vendors in parallel. By steering the development of innovative solutions towards concrete public sector needs, PCP may trigger industry to initiate R&D that was previously unthought-of. In PCP, procurers are thus demanding customers, who are articulating advanced solution requirements as potential future early adopters of the developed solutions (which will be selected in a separate PPI procurement that follows the completion of the PCP).

Introduction

The **risks and challenges posed by climate change for urban communities are multifaceted**, including air pollution, extreme temperatures, the urban heat island effect, urban flooding, and general resource scarcity, for example freshwater scarcity due to droughts or pollution of groundwater [2]. Urban communities also harbour **significant human, financial, and natural capital**, which puts them at the forefront of the development of innovative solutions to tackle the challenges they face and move towards becoming sustainable and resilient in the face of climate change [3].

Climate Services (Box 2), especially those utilising Earth Observation data (Box 3), are increasingly used to support urban planning and development, as well as for the monitoring of air quality in cities. **Pre-commercial procurement (PCP) of these services is a key driver** in the development of innovative Climate Services that aim to address the risks and challenges posed by climate change.

Box 2: Climate Services

Climate services describe the transformation of **climate-related data** — together with other relevant information — into customized products such as projections, forecasts, information, trends, economic analysis, assessments (including technology assessment), 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. As such, these services include data, information and knowledge that support adaptation, mitigation, and disaster risk management (DRM) [1].

Policy developments

With 97% of urban dwellers in Europe exposed to air pollution, the EU's policies targeted at improving air quality explicitly mention that **cities are at the forefront** of implementing pollution-relevant laws, policies, and programmes [5]. The EU's **Zero Pollution Action Plan** aims to reduce the number of premature deaths due to air pollution by 55% by 2030 [5]. The goal is for **European Cities to be climate neutral by 2050** [5], enabling cities to become sustainable, resilient, and smart (Fig 1.).

The EU's **Green City Accord**, with 100 city signatories, has set ambitious goals to tackle air pollution, water quality issues, threats to urban biodiversity, implementation of a circular economy, and reduction of urban noise pollution, which are **tracked with mandatory indicators** [6].

Opportunities

Urban communities can act as platforms for innovation [1], which is reflected in the EU's Urban Agenda naming **innovative and responsible public procurement** as one of its 14 priority themes [4]. The Urban Agenda specifically highlights the potential of PCP to develop innovative solutions for the challenges urban communities face.

Climate Services procured through a PCP call thus increase urban communities' resilience to the risks posed by climate change through the **timely supply of climate, weather, and air quality data, models, and predictions** that are tailored to the specific stakeholder needs.

Box 3: Earth Observation

Environmental observation involves collecting and monitoring information and data regarding changes and trends in industrial, economic, and global environments. These pieces of data help researchers understand changing environments to inform potential changes in things like climate change policies and disaster relief plans [2]. **Earth Observation (EO)** is defined as the process of acquiring observations of the Earth's surface and atmosphere via remote sensing instruments. The acquired data is usually in the form of digital imagery [3]. EO satellites have been essential to identifying and monitoring climate change and it supports mitigation and adaption measures by providing vast amount of EO data.

Conclusions

With 75% of Europeans living in urban environments, Urban Communities are exposed to a variety of risks in the face of climate change, but they are also **uniquely positioned and equipped with capital to address those risks**.

Innovative and responsible sustainable Climate Services, procured through a PCP call, can provide key insights to support the reduction of air pollution, as well as **support urban communities in increasing their resilience** to the impacts of climate change and extreme events.

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References:

- [1] [UN Habitat](#) (2022)
- [2] [UN Habitat](#) (2021)
- [3] [European Environment Agency](#) (2023)
- [4] [EU Urban Agenda](#) (2021)
- [5] [European Commission](#) (2021)
- [6] [Green City Accord](#) (2022)