

## Policy Brief: Agriculture, Forestry, and other Land Use

### 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

- The Agriculture, Forestry, and other Land Use sector (Fig. 1) **faces risks and challenges due to climate change**, relating to freshwater, soil, extreme events, and biodiversity.
- The sector is also **uniquely positioned for Greenhouse Gas (GHG) mitigation** approaches through emission reduction and carbon sequestration.
- Innovative Climate Services, utilising Earth Observation data and technologies, have the potential to address these challenges and opportunities.
- **Pre-commercial procurement (PCP) of these services drives innovation** and enables public authorities to procure solutions that best address their needs to increase the adaptation, mitigation, and resilience of their sector.



### Recommendations

- To meet the EU's targets for the AFOLU sector of a net reduction of 310 Mt CO<sub>2</sub> equivalent by 2030 [6], **innovative solutions are required**.
- Climate Services utilising Earth Observation data can support the sector **in harnessing its full potential for carbon sequestration** as well as support its resilience to the multifaceted risks posed by climate change.
- A PCP call enables stakeholders from the AFOLU sector to trigger the development of innovative solutions that can **address the sector's main challenges and opportunities**.

#### 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 the market 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 the Agriculture, Forestry, and other Land Use (AFOLU) sector are widely documented and include droughts, soil erosion and degradation, extreme weather events, forest fires, extreme temperatures, as well as biodiversity loss, all of which can affect yields and productivity. The AFOLU sector is also **uniquely positioned in facilitating GHG mitigation**, by reducing its own emissions, acting as a carbon sink, and even enable mitigation in other sectors [4].

Climate Services (Box 2), especially those utilising Earth Observation data (Box 3), are increasingly used to monitor the health and sustainability of AFOLU systems, to optimise their outputs, and track their carbon capture potential [5]. **Pre-commercial procurement 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

The EU's land use change and forestry (LULUCF) sector regulation was revised in May of 2023 and will specifically include emissions from the agricultural sector from 2031 [6]. The decision was made to regulate the AFOLU sector more holistically and to set joint emission targets. The regulation thus calls for an **EU-wide target of -310 Mt CO<sub>2</sub> equivalent of net removals** for the AFOLU sector by 2030, reversing the current trend of declining net removals from the sector [6].

The revised regulation makes specific note of the increased use of **land monitoring through digital mapping, remote sensing, and Earth Observation** to enhance the quality of monitoring, reporting, and verification (MRV) of emissions and removals [6].

## Opportunities

Climate Services provided innovative solutions to the AFOLU sector for risk reduction, effective resilience policies and adaptation planning in the face of the risks posed by climate change and the demands of changing carbon removal policies.

For example, the development of the best possible Climate Services to **support these removal monitoring goals** can be triggered by a PCP approach.

Climate Services procured through a PCP call can further increase the AFOLU sector's resilience to the risks posed by climate change through the **timely supply of climate and weather 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

The AFOLU sector is exposed to a variety of risks caused by climate change, but due to its high potential for carbon sequestration it is a **key driver of change and emission reductions**. Innovative Climate Services, procured through a PCP call, can provide key insights to support the monitoring of carbon removal as well as the strengthening of the sector's resilience to climate change impacts.

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### References:

- [1] [Roadmap for Climate Services](#) (2015)
- [2] [University of Alberta](#) (2023)
- [3] [European Space Agency](#) (2020)
- [4] [IPCC](#) (2022)
- [5] [EUSPA](#) (2022)
- [6] [European Parliamentary Research Service](#) (2023)
- [7] [European Commission](#) (2023)