

General Information	
Preliminary title of the European Partnerships	Towards more sustainable farming: agro-ecology living labs and research infrastructures
Short description of the partnership	The partnership will enable to grasp short to long-term agro-ecological processes at landscape level and will aim to accelerate the transition towards sustainable farming practices by boosting placed-based innovation in a co-creative environment.
Services directly involved	Lead Service: AGRI (Unit B-2) Other services: RTD, ENV, CLIMA, JRC
Context and problem definition	<p>Almost half EU land is farmed¹, making agriculture extremely important for natural environment and climate. Farming has a major influence in creating and maintaining the European countryside. However, unsustainable agricultural practices and land use can also have an adverse impact on natural resources, such as soil, water and air pollution, fragmentation of habitats and loss of wildlife. The use of fertilisers in agriculture is a significant source of nitrogen (over 50% of total discharge into surface waters) and phosphorus loading. Agriculture is considered the largest contributor to pesticide levels in EU surface and groundwater bodies (groundwater at risk appears to be generally located in areas of intensive agriculture), and about 7% of groundwater monitoring stations in the EU have reported excessive levels for one or more pesticides in recent years. Around 13% of arable land in the EU is estimated to be affected by moderate to high water erosion - which equates to an area of 140 000 km².</p> <p>The transition to more sustainable farming practices that maximise the use of ecological processes, as an alternative to practices that rely mostly on the use of inputs (e.g. synthetic fertilisers and pesticides) with potential negative impacts on the environment, is hindered by:</p> <ul style="list-style-type: none"> - insufficient knowledge on these ecological processes at relevant spatial and time scales; and - the lack of evidence on the economic and environmental performance of innovative ecological approaches in real-life specific conditions and farming systems. <p>Changing market and climate conditions and pressure on income tend to lead farmers to be risk-adverse. This is likely to increase in the future because of increased market volatility and extreme climatic events¹. At the same time, increasing input prices and societal demand for more sustainable farming practices can motivate change. Adoption by farmers of more ecological practices largely depends on the availability of well-adapted, cost-effective solutions and trustworthy information on their benefits both for the environment and for the sustainability of the farming activity.</p> <p>Living labs allow innovation users, scientists and civil society to collaborate in finding solutions to context-specific challenges in open innovation environments. The living lab approach is considered at the global level as a methodology that can speed up development and upscaling of innovative practices in farming. Discussions on the potential of living labs are currently on-going as part of the G-20 meetings of agricultural chief scientists (MACS).</p>

¹ https://ec.europa.eu/agriculture/cap-indicators/context_en

² https://ec.europa.eu/agriculture/sites/agriculture/files/consultations/cap-modernising/env_background_final_en.pdf

	<p>The EU has supported living labs for over ten years (notably under FP6) with a limited uptake in the farming and rural community so far. The introduction of the multi-actor approach under Horizon 2020 has triggered an increased interest in open innovation methods and the creation of living-lab-like approaches as part of the structure of several projects. These remain, however, short-term and theme-specific, and lack focus on specific national and regional contexts. The EU funded a research infrastructure on analysis and experimentation on ecosystems under FP7 (ANAE), as well as a stream of projects on integrated ecological approaches under Horizon 2020's societal challenge 2, addressing some of the major themes referred to above in a cross-European manner but without enough place-based attention.</p> <p>There is therefore a need to structure a network of longer-term experimentation spaces that will be better embedded in the national and regional knowledge and innovation ecosystems and will cater both for knowledge creation and innovation upscale needs.</p>
Objectives and expected impacts	<p>The partnership will aim to speed up the adoption of ecological approaches in farming systems by i) improving knowledge creation on the benefits of ecological processes applied to farming and ii) creating spaces for long-term, site-specific and real-life experimentation and innovation delivering easy-to-adopt practices. It shall contribute to achieving the objectives of the new Common agricultural policy 2021-2027 to foster sustainable development and efficient management of natural resources such as water, soil and air as well as climate adaptation and mitigation.</p> <p>The partnership will benefit all EU citizens by contributing to reducing the environmental impact of agriculture and offer the possibility to some of them to get involved directly in experimentations, therefore reconnecting consumers with producers. It will benefit producers by creating spaces in which they can experiment and test their own solutions for more sustainable practices, with the support of scientists. Finally, it will provide scientists with a network of close to the ground research sites which will deliver harmonised data in a long-term perspective.</p> <p>In this way, the partnership will set direction for knowledge creation and facilitate experiments in a long-term period, which will improve understanding of agro-ecological processes. It will operate in an integrated manner looking at ecological processes applied to farming in relation with agro-ecosystem biodiversity (below and above-ground, wild and cultivated) and ecosystem services; climate change adaptation and mitigation; integrated pest management; soil health; carbon sequestration; and enrichment of the soil flora. In doing so it will bring various scientific disciplines together across the EU and in relation with end-users.</p> <p>The partnership will do so by supporting a network of living labs/farms networks, promoting coordinated approaches and ensuring knowledge exchange at EU level. It will foster place-based open innovation, in co-creative environments (such as living labs including experimental farms or commercial farms) from the development of solutions to their piloting and upscaling on individual farms (network of commercial farms) as well as on groups of farms (complementarities between farms). Working on groups of farms is necessary to take into consideration the landscape scale and seek an impact at landscape level</p>
Necessity test: rationale for a European Partnership	<ul style="list-style-type: none"> Agro-ecosystem processes are very site and context-specific. They are complex and long-term due to the time needed to re-establish ecological equilibria. Their assessment therefore requires long-term approaches along with landscape scale coverage that go beyond individual farms and across Member State (MS) borders. Regular collaborative research is not suited to long-term and landscape-scale approaches but would benefit

	<p>from such a partnership for their research activities. A partnership allows to organise and coordinate an optimum collaboration between European, national and possibly regional funders to support highly relevant and impactful experimentation responding to local context challenges while enabling Europe-wide knowledge creation and sharing through common scientific methodologies and the structuring of a long-lasting R&I ecosystem.</p> <ul style="list-style-type: none"> ▪ Place-based innovation serves local sustainable development needs that contribute to the achievement of the global challenges embedded in the Sustainable Development Goals. In order to foster action at these levels, it is important that local / national / regional funders play an active role in structuring support to these approaches, which is not possible under centrally managed EU calls. ▪ Combining funding sources that support innovation for rural or regional development (such as EAFRD, ERDF, ESF, etc.) and EU funds coming from Horizon Europe is important in this context. Only a well-structured partnership approach can ensure coordination of activities at different scales, taking into account the timing of programming exercises. ▪ Regular collaborative R&I projects or support activities can contribute to launching facilities or networks but cannot sustain them in the long run or ensure MS coordination and involvement in the process, which are essential factors to ensure the long-term approaches that agro-ecological processes require. Involvement of MS, and where relevant regional and local authorities, provides for a more strategic approach in the longer-term along with a broader coverage of the EU territory, as it will facilitate MS's ownership of the process.
Relevant for the following parts of Horizon Europe	<p>Pillar II 'Global Challenges and European Industrial Competitiveness'</p> <p><input type="checkbox"/> Cluster Health</p> <p><input type="checkbox"/> Cluster Culture, creativity and inclusive society</p> <p><input type="checkbox"/> Cluster Civil Security for Society</p> <p><input type="checkbox"/> Cluster Digital, Industry and Space</p> <p><input type="checkbox"/> Cluster Climate, Energy and Mobility</p> <p><input checked="" type="checkbox"/> Cluster Food, Bioeconomy, Natural Resources, Agriculture and Environment</p> <p><input type="checkbox"/> Cross-cluster</p> <p><input type="checkbox"/> Pillar III 'Innovative Europe'</p>
Currently identified links with other partnership candidates / Union programmes	<p>Links should be built with activities aiming at the creation of agricultural knowledge and innovation systems under the CAP and with Regional policy support to innovation in the framework of smart specialisation (75% of smart specialisation strategies have a focus on agri-food).</p> <p>In addition, the following partnerships candidates are complementary and could cooperate: 1) "Biodiversity"; 2) "Environmental observation for sustainable agriculture".</p>
Does the proposed partnership build on currently active ones?	No
Expected type and composition of partners	<p>Partners:</p> <ul style="list-style-type: none"> • National / regional and local authorities including environmental authorities • Funding organisations • Research/innovation/education organisations <p>Stakeholders:</p> <ul style="list-style-type: none"> • Farmers and the wider farming / rural community • Civil society / NGOs • Land owners

	<ul style="list-style-type: none"> • Agricultural knowledge and innovation system (AKIS) <p>Inclusiveness:</p> <ul style="list-style-type: none"> • Theme: The partnership would cover issues related to agro-ecology as well as agroforestry, the whole organic sector and related sustainable agricultural systems (the partnership could also include consumers and other food chain stakeholders) • Geography: the partnership would cover a balanced and representative set of locations covering a range of farming systems / sectors, geographical and socio-economic contexts (including different pedo-climatic conditions) <p>Public engagement:</p> <p>The partnership will seek the involvement of citizens / consumers in living labs, to contribute from the perspective of product / value chain development and the coherence of the business model (socio-economic / behavioural sciences). The modalities of the involvement of those stakeholders will depend on the governance of the partnership (associate partners / consumer board).</p>
Contributions and commitments expected from partners	<p>Contributions: in cash and in kind from funders and managing authorities. In kind from stakeholders involved in the actual living labs and research infrastructures that would be funded through calls. In kind could include time, land or facilities devoted to on-site experimentation for example.</p>
Currently envisaged implementation mode(s).	<p><input type="checkbox"/> Co-programmed European Partnership</p> <p><input checked="" type="checkbox"/> Co-funded European Partnership</p> <p><input type="checkbox"/> Institutionalised European Partnership</p> <p><input type="checkbox"/> Article 185</p> <p><input type="checkbox"/> Article 187</p> <p><input type="checkbox"/> EIT-KIC</p>
Justification of the implementation mode	<p>The need to embed the R&I activities we aim to conduct through this partnership in the local and regional innovation ecosystems justify the involvement of national and regional authorities in their funding, while the need to connect them justifies EU's involvement.</p>
Proposed starting year	2023

ⁱ <https://ec.europa.eu/info/news/farmers-five-more-countries-receive-support-tackling-climate-related-problems>