EN

Annex VIII

Horizon Europe

Work Programme 2025

9. Food, Bioeconomy, Natural Resources, Agriculture and Environment

Table of contents

Introduction

The Horizon Europe mandate for Cluster 6 is to provide research and innovation opportunities to strengthen and balance environmental, social and economic goals and to set human economic activities on a path towards sustainability. Therefore, the underlying paradigm of Cluster 6 is the need for a transformative change of the EU economy and society to reduce environmental degradation, halt and reverse the decline of biodiversity and better manage natural resources while meeting the EU's climate objectives and ensuring food and water security, taking into account the evolving geopolitical context and building on the new research and innovation (R&I) priorities outlined in the Horizon Europe Strategic Plan 2025-2027[1].

Activities in this work programme will contribute to all Key Strategic Orientations (KSOs) defined by the Horizon Europe Strategic Plan 2025-2027, namely:

1. The green transition;
2. The digital transition;
3. A more resilient, competitive, inclusive and democratic Europe.

To contribute to these programme-level KSOs, Cluster 6 will deliver on six specific expected impacts as defined in the Horizon Europe Strategic Plan 2025-2027. In this work programme, each expected impact has been declined into one or two specific destination(s) (see table below). This destination-based work programme structure follows a thematic centre-of-gravity approach, but activities in a given destination may be of a cross-cutting nature and will often contribute to several expected impacts. The specific contribution to the overall expected impacts is explained in the introductory text of each destination.

Expected impact (Strategic Plan 2025-2027)	**Destination (Cluster 6 work programme)**
27. Fostering mitigation of and adaptation to climate change in areas and sectors covered by Cluster 6.	Destination 5: Land, oceans and water for climate action
28. Putting biodiversity on a path to recovery, and protecting and restoring ecosystems and their services.	Destination 1: Biodiversity and ecosystem services
29. Achieving healthy soils and forests, as well as clean air, fresh water and marine water, whilst ensuring water resilience and the transition to a clean, competitive and circular economy and sustainable bioeconomy.	Destination 3: Circular economy and bioeconomy sectors Destination 4: Clean environment and zero pollution
30. Ensuring healthy food and nutrition security by	Destination 2: Fair, healthy and

[1] Horizon Europe strategic plan 2025-2027 - Publications Office of the EU (europa.eu)

making agriculture, fisheries, aquaculture and food systems sustainable, resilient, inclusive and within planetary boundaries.	environmentally friendly food systems from primary production to consumption
31. Sustainably developing rural, urban and coastal areas.	Destination 6: Resilient, inclusive, healthy and green rural, coastal and urban communities
32. Developing innovative governance models and tools enabling sustainability and resilience.	Destination 7: Innovative governance, environmental observations and digital solutions in support of the Green Deal

Activities under Cluster 6 will support the new innovation agenda for Europe and help accelerate the ecological transition required by the European Green Deal[2] in order to achieve climate neutrality by 2050 as established by the European Climate Law[3]. This will be done by preserving Earth's natural carbon sinks and stocks in ecosystems, including soils and plants, forests, farmed lands and wetlands and the marine environment. This will substantially reduce GHGs from the forestry and agricultural sectors and transform the food system. In addition, activities will foster innovation to develop the circular economy and exploit the potential of biological resources for renewable products. This will reduce the EU's dependence on non-renewable resources and help reduce emissions/waste from industrial processes by using more sustainable bio-based systems. At the same time, it will avoid trade-offs that could damage biodiversity and will promote synergistic measures to protect biodiversity.

In addition to the EU's climate policy, R&I will support the objectives of the EU farm to fork strategy, the EU biodiversity strategy for 2030 [4] and the Kunming-Montréal Global Biodiversity Framework[5], the EU's new circular economy action plan[6], the EU zero pollution action plan [7], the EU industrial strategy, the EU bioeconomy strategy, the EU forest strategy, the EU soil strategy for 2030[8], the sustainable blue economy strategy, the long-term vision for the EU's rural areas[9], the chemicals strategy for sustainability and the EU plastics strategy.

R&I in this cluster will help meet the long-term priority objectives to 2030 set out in the 8th Environment Action Programme[10] and will contribute to ensuring that policy development is firmly anchored to the latest science and knowledge**.** This cluster will also contribute to achieving the target of dedicating 10% of the MFF 2021-2027 to biodiversity as of 2025.

2 A European Green Deal | European Commission (europa.eu)
3 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R1119.
4 EUR-Lex - 52020DC0380 - EN - EUR-Lex (europa.eu)
5 https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf.
6 EUR-Lex - 52020DC0098 - EN - EUR-Lex (europa.eu).
7 EUR-Lex - 52021DC0400 - EN - EUR-Lex (europa.eu).
8 EUR-Lex - 52021SC0323 - EN - EUR-Lex (europa.eu).
9 The long-term vision for the EU's rural areas: key achievements and ways forward - European Union (europa.eu)
10 https://ec.europa.eu/environment/strategy/environment-action-programme-2030_en.

Protecting and restoring the integrity of ecosystems and their capacity to deliver a wide range of essential services, therefore putting Europe's biodiversity on a path to recovery by 2030, as required by the EU biodiversity strategy for 2030, is fundamental to achieving the European Green Deal objectives. Avoiding loss of biodiversity (from genes to species and ecosystems) could also help avoid threats to human health in the future. R&I will address challenges in this area, including by enabling transformative changes. In 2025, this cluster will improve knowledge about the state of biodiversity, the role of ecosystems and their services and support their restoration, in line with the objectives of the EU Nature Restoration Law. This cluster deals with agriculture, forestry, aquaculture and fisheries, food and bio-based systems, which all directly depend on ecosystem services. These sectors have profound environmental impacts and are also particularly affected by the global environmental changes, while providing opportunities for economic and social sustainability in the context of Europe's strategic autonomy. In particular, climate adaptation and biodiversity needs will have to be considered for their transformation. R&I activities will include solutions addressing indirect drivers of biodiversity loss, which also affect the climate and our resilience to adapt to it.

Cluster 6 will steer and accelerate the transition to sustainable, healthy and inclusive food systems to effectively achieve the objectives of the farm to fork strategy. It will empower farmers, fishers and aquaculture producers to transform their production methods more quickly and efficiently and make the best use of nature-based solutions, technological, digital and social innovations and transferable knowledge. This will accelerate climate mitigation and result in positive environmental outcomes, increase climate resilience and reduce dependency on pesticides and antimicrobials fostering multi-disciplinary approaches including the One Health approach. Furthermore, it will also provide consumers with affordable, safe, nutritious, healthy and sustainable food. R&I will also stimulate i) practices at all stages of the food system from production to processing, ii) services, iii) the use and valorisation of waste and by-products and iv) surplus management. This will ensure safe and sustainable food and enable a shift to sustainable and healthy diets. R&I will also support the design, implementation and monitoring of the common agricultural policy (CAP), the common fisheries policy (CFP) and the EU General Food Law.

Improved knowledge and innovations will be key to achieving the transition towards a sustainable and circular economy and the zero-pollution ambition of the European Green Deal to halt and prevent pollution, by addressing issues concerning fresh and marine waters, soils, nutrients as well as the environmental performance of processes. R&I will support EU environmental legislation and policies that target a higher level of protection for biodiversity, soil, water, air and marine resources, including the Birds Directive [11] and the Habitats Directive [12], the EU pollinators initiative [13], the water legislation including the Water Framework Directive[14], the Marine Strategy Framework Directive[15], the revised Ambient Air

11 EUR-Lex - 32009L0147 - EN - EUR-Lex (europa.eu).
12 EUR-Lex - 31992L0043 - EN - EUR-Lex (europa.eu).
13 EUR-Lex - 52018DC0395 - EN - EUR-Lex (europa.eu).
14 EUR-Lex - 32000L0060 - EN - EUR-Lex (europa.eu).
15 http://data.europa.eu/eli/dir/2008/56/oj

Quality Directives[16], the EU waste legislation[17], the Ecodesign for Sustainable Products Regulation[18], the EU maritime policy and the EU Arctic policy as well as the objectives of the proposal for a directive on soil monitoring and resilience and of the proposal for a regulation on a Forest Monitoring Framework.

The cluster will help develop resilient and vibrant rural, coastal, urban, and peri-urban areas in line with the Commission priority 'An economy that works for people' and the long-term vision for rural areas. It will help achieve thriving rural innovation ecosystems by supporting and/or establishing synergetic initiatives such as living labs, smart villages, start-up villages, EIP-AGRI operational groups and an S3 platform. It will develop new governance models to implement the European Green Deal initiatives, needed to ensure a fair and just transition and that no one is left behind. This cluster will help in the use, uptake and deployment of environmental observations and take advantage of digital solutions in line with the EU priority 'A Europe fit for the digital age'.

To be more effective in achieving a positive impact, the proposals should synergise with relevant initiatives funded at EU level, including the Knowledge and Innovation Communities (KICs) of the European Institute of Innovation and Technology (EIT). In particular, the innovation ecosystems created and nurtured by the EIT KICs can help build communities or platforms for coordination and support actions, sharing knowledge or disseminating and making best use of the project results.

Furthermore, Horizon Europe is the R&I support programme in a system of European and national funding programmes that shares policy objectives. Through the programme, special attention will be given to ensuring cooperation between universities, scientific communities and industry, including small and medium-sized enterprises, and people and their representatives. This allows bridging gaps and reducing inequalities between genders, territories, generations and regional cultures, in particular to support women innovators and care for the needs of young people in shaping Europe's future. Calls could take the form of EU synergy calls, meaning that projects that have been awarded a grant under the call could also receive funding under other EU programmes, including relevant shared management funds. In this context, project proposers should consider and actively seek synergies with, and, where appropriate, possibilities for further funding from other R&I-relevant EU, national or regional programmes such as the European Regional Development Fund (ERDF), the European Social Fund Plus (ESF+), the Just Transition Fund (JTF), the European Maritime Fisheries and Aquaculture Fund (EMFAF), the European Agricultural Fund for Rural Development (EAFRD), the LIFE Programme, InvestEU and private funds or financial instruments.

The ERDF focuses, among others, on the development and strengthening of regional and local R&I ecosystems and smart economic transformation, in line with regional/national smart specialisation strategies. It can support investment in research infrastructure, activities for

16 https://environment.ec.europa.eu/topics/air/air-quality_en.
17 https://environment.ec.europa.eu/topics/waste-and-recycling/waste-law_en.
18 EUR-Lex - 52022PC0142 - EN - EUR-Lex (europa.eu)

applied research and innovation, including industrial research, experimental development and feasibility studies, building research and innovation capacities, uptake of advanced technologies and roll-out of innovative solutions from EU R&I Framework Programmes.

In this work programme, synergies are also sought with the work of the European Space Agency (ESA) to ensure complementarity and mutual benefits regarding R&I actions conducted by ESA. Such synergies will contribute to the European Commission-ESA Earth System Science initiative to support significant breakthrough in the areas covered by the Cluster.

Research on a societal and political framework is necessary to achieve the transformation expected and R&I investments under Cluster 6 will therefore emphasise the essential role played by the social sciences and humanities (SSH) for the accelerating the green transition as well as gender aspects, inter- and trans-disciplinary and systems approaches. R&I will build on existing research infrastructures.

Cluster 6 activities will sustain the EU's ambition in international fora in areas of paramount importance such as biodiversity, climate change, the management of natural resources, seas and ocean, zero pollution, sustainable agriculture, food safety and food and nutrition security. In line with the EU's global approach to research and innovation, the 2025 work programme will remain almost completely open to Non-Associated Third Countries, so that they can participate in all topics. In support of the global gateway strategy, projects involving international partners should lead to increased scientific knowledge and transfer of technology among partner countries, enabling global challenges across the world to be addressed and sustainable growth and jobs to be created. Cooperation should take place in a value-based way, creating linkages, not dependencies. Legal entities established in China are not eligible to participate in Innovation Actions in any capacity. Please refer to the Annex B of the General Annexes of this Work Programme for further details.

The cluster is strongly committed to the UN Sustainable Development Goals (SDGs)[19] which have an important impact on food, bioeconomy, natural resources, agriculture and the environment, notably SDG 2 (Zero hunger), SDG 3 (Good health and well-being), SDG 6 (Clean water and sanitation), SDG 8 (Decent work and economic growth), SDG 9 (Industry, innovation and infrastructure), SDG 11 (Sustainable cities and communities), SDG 12 (Responsible consumption and production), SDG 13 (Climate action), SDG 14 (Life below water) and SDG 15 (Life on land) with their specific targets to achieve a better and more sustainable future for all.

For topics in this cluster, the consortia should consider their possible contribution to Joint Research Centre (JRC) relevant platforms for capitalizing on the knowledge developed in their projects, and becoming more policy relevant, contributing in terms of data, indicators and knowledge. For instance:

[19] THE 17 GOALS | Sustainable Development (un.org).

- Life Cycle Assessment (LCA) and its relevant application to value chain assessment, with reference to the European Platform on Life Cycle Assessment (EPLCA, https://eplca.jrc.ec.europa.eu/) and make reference to the Environmental footprint method when applying LCA (https://ec.europa.eu/environment/eussd/smgp/index.htm);

- raw materials, with reference to the Raw Materials Information System (RMIS, https://rmis.jrc.ec.europa.eu/);

- soil and soil related issues, with reference to the European Soil Observatory (ESO, https://ec.europa.eu/jrc/en/eu-soil-observatory);

- natural capital accounting, with reference to the Integrated Natural Capital Accounting (INCA) platform (https://ecosystem-accounts.jrc.ec.europa.eu);

- biodiversity, with reference to the EC Knowledge Centre for Biodiversity, (https://knowledge4policy.ec.europa.eu/biodiversity_en);

- food systems and food security, with reference to the EC Knowledge Centre for Global Food and Nutrition Security (https://knowledge4policy.ec.europa.eu/global-food-nutrition-security_en);

- bioeconomy, with reference to the EC Knowledge Centre for Bioeconomy (https://knowledge4policy.ec.europa.eu/bioeconomy_en);

- EU and African Union (AU) cooperation, with reference to the Africa Knowledge Platform (https://africa-knowledge-platform.ec.europa.eu);

- Earth and environmental observations, with reference to the EC Knowledge Centre on Earth Observation (https://knowledge4policy.ec.europa.eu/earthobservation_en).

Specific requirements for multi-actor projects:

Proposals submitted for topics, which include a request to follow the multi-actor approach must meet all of the requirements below. The multi-actor approach described here - a form of responsible R&I, aims to make the R&I process and its outcomes more reliable, demand-driven, shared and relevant to society. It also aims to have these outcomes shared more extensively. This entails more than just widely disseminating a project's results, or listening to the views of a board of stakeholders. A multi-actor project ensures the genuine and sufficient involvement of a targeted array of actors, which serves the objectives of the topic. These actors include: i) researchers, ii) farmers / farmers' groups and associations, iii) foresters / foresters' groups and associations, iv) aquaculture producers, v) fishers / fishers' groups and associations, vi) advisors, vii) food and bioeconomy businesses, viii) other businesses, ix) consumer associations, x) local communities, xi) citizens, xii) civil society organisations including NGOs and social economy actors, and xiii) government representatives. Which key actors are relevant to participate depends on the objective of the proposal. They are essentially

the (end-) users[20] of the project results who are backed up by any other useful intermediaries and actors who can contribute with further expertise and innovative ideas relevant to the topic's objectives, and support communication and dissemination. The genuine and sufficient involvement of such actors should take place all over the whole course of the project: from participation in development of the project idea, planning and experiments to implementation, communication and dissemination of results and to a possible demonstration phase. Building blocks for the project proposal are expected to come from science as well as from practice: it is a 'co-creation' process. Practitioners and (end) users are to be involved, not as a study-object, but to use their practical and local knowledge and/or entrepreneurial skills to develop solutions and create 'co-ownership' of results for (end-) users and practitioners. This will contribute to and speed up the acceptability and uptake of new ideas, approaches and solutions developed in the project.

Therefore, a multi-actor project proposal must include the following elements:

- It must demonstrate how the proposed objectives and planning are targeting the needs/problems/challenges of and opportunities for the (end-)users of the project results;
- It must demonstrate how the description of the project concept and in particular the composition of the consortium reflects a balanced choice of relevant key actors who have complementary types of knowledge (scientific, practical, etc.), and must ensure that project results which should be ready for practice are broadly implemented;
- It must demonstrate how the project intends to use existing practices and tacit knowledge. This should be illustrated in the proposal with a sufficient number of high-quality knowledge exchange activities outlining the precise and active roles of the different non-scientific actors in the work. The cross-fertilisation of skills, competencies and ideas between actors should generate innovative findings and solutions that are more likely to be applied on a wide scale;
- It must demonstrate how the project will facilitate the multi-actor engagement process by making use of the most appropriate methods and expertise;
- It must demonstrate the project's added value: how it will complement existing research and best practices;
- It must demonstrate how the project will result in practical and ready to use knowledge, approaches, tools or products, that are easily understandable and freely accessible;
- It must demonstrate how these outputs ready for practice will feed into the existing dissemination channels most consulted by the (end-) users of the project results in countries and regions.

[20] An "(end-) user" of project result is a person who is him/herself putting the project results into practice.

In addition, to ensure EU-wide communication in all areas related to the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI)[21] and the common agricultural policy (CAP) specific objectives[22], in particular agriculture, forestry and rural development, this knowledge must also be summarised in an appropriate number of 'practice abstracts' in the common EIP-AGRI format[23].

For areas falling outside the remit of EIP-AGRI and CAP specific objectives, other similarly effective solutions ensuring dissemination at EU level should be sought.

Where applicable, it is strongly recommended that interactive innovation groups, such as EIP-AGRI Operational Groups funded under Rural Development Programmes, become involved.

21 For the areas covered by the EIP-AGRI see section 8 (pp.8-9) of the Commission Communication 2012(79) final: eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0079&from=EN : Increased agricultural productivity, output, and resource efficiency, the bioeconomy, biodiversity, climate, ecosystem services and soil functionality, products and services for the integrated supply chain, and food quality, food safety and healthy lifestyles.

22 For areas covered by the CAP specific objectives see Article 6 of the Regulation (EU) 2021/2115 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2021.435.01.0001.01.ENG.

23 The EIP common format for "practice abstracts" is available at: https://ec.europa.eu/eip/agriculture/en/eip-agri-common-format.

Calls

Call - Cluster 6 Call 01

HORIZON-CL6-2025-01

Overview of this call[24]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)			Expected EU contribution per project (EUR million)[25]	Indicative number of projects expected to be funded
		2025	2026	2027		
Opening: 06 May 2025 Deadline(s): 17 Sep 2025						
Destination - Biodiversity and ecosystem services						
HORIZON-CL6-2025-01-BIODIV-01: Additional activities for the European Biodiversity Partnership: Biodiversa+	COFUND	20.00	20.00	20.00	Around 60.00	1
HORIZON-CL6-2025-01-BIODIV-02: Strengthening the capacity of citizen science in biodiversity observation	CSA	4.00			Around 4.00	1
HORIZON-CL6-2025-01-BIODIV-03: Strengthening taxonomic approaches for biodiversity	RIA	24.00			Around 12.00	2
HORIZON-CL6-2025-01-BIODIV-04: Large-scale in situ biodiversity observations	RIA	24.00			Around 12.00	2

[24]

[25] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

for better understanding of biodiversity state, drivers of its decline and impacts of policies						
HORIZON-CL6-2025-01-BIODIV-05: Assessing and modelling ecosystems' dynamic processes to guide restoration activities and to improve models used for climate	RIA	15.00			Around 5.00	3
HORIZON-CL6-2025-01-BIODIV-06: Assessing and modelling socio-economic impacts of nature restoration	RIA	16.00			5.00 to 6.00	3
HORIZON-CL6-2025-01-BIODIV-07: Living labs and lighthouses co-creating innovative solutions for forests and freshwater ecosystems restoration	RIA	12.00			Around 6.00	2
HORIZON-CL6-2025-01-BIODIV-08: Integrated and coordinated approaches for coral reefs and associated ecosystems (mangroves and seagrass beds) conservation, restoration, and adaptation potential	RIA	12.00			Around 6.00	2
HORIZON-CL6-2025-01-BIODIV-09: Strengthening pathways to alternative socio-economic models for continuous improvement of biodiversity	RIA	14.00			Around 7.00	2
HORIZON-CL6-2025-01-BIODIV-10: Understanding the perceptions of and improving communication on the biodiversity crisis and	RIA	6.00			Around 3.00	2

nature restoration benefits to sustain citizen engagement and democratic governance						
HORIZON-CL6-2025-01-BIODIV-11: Supporting the implementation of nature restoration measures for the social, economic and environmental sustainability of farming systems	RIA	11.00			5.00 to 6.00	2
HORIZON-CL6-2025-01-BIODIV-12: Breeding for resilience: enhancing multi-stress tolerance in crops	RIA	14.00			Around 7.00	2
Destination - Circular economy and bioeconomy sectors						
HORIZON-CL6-2025-01-CIRCBIO-01: Novel circular business models to enable the just transition to a sustainable and circular economy	IA	10.00			Around 5.00	2
HORIZON-CL6-2025-01-CIRCBIO-02: Improving ecodesign of products and development of testing methods for products prioritised under the Ecodesign for Sustainable Products Regulation	RIA	8.00			Around 4.00	2
HORIZON-CL6-2025-01-CIRCBIO-03: Product Environmental Footprint (PEF) of policy and market-relevant product groups	RIA	8.00			Around 4.00	2
HORIZON-CL6-2025-01-CIRCBIO-04: Development and testing of Extended Producer Responsibility schemes (EPR) within the	IA	10.00			Around 5.00	2

priority Circular Economy Action Plan value chains						
HORIZON-CL6-2025-01-CIRCBIO-05: Consumption patterns and environmental awareness as enablers of transition to circular economy	IA	12.00			Around 6.00	2
HORIZON-CL6-2025-01-CIRCBIO-06: Open Topic: Innovative solutions for the sustainable and circular transformation of SMEs	IA	10.00			Around 5.00	2
HORIZON-CL6-2025-01-CIRCBIO-07: Indicators for the transition to sustainable and circular economy	RIA	8.00			Around 4.00	2
HORIZON-CL6-2025-01-CIRCBIO-08: Demonstration, deployment and upscaling of circular systemic solutions in cities and regions (Circular Cities and Regions Initiative)	IA	18.00			Around 9.00	2
HORIZON-CL6-2025-01-CIRCBIO-09: Bioprospecting and optimized production of the terrestrial natural products: new opportunities for bio-based sectors	IA	11.00			Around 5.50	2
HORIZON-CL6-2025-01-CIRCBIO-10: Unleashing the potential and advancing the impact of the digitalization/AI of the bio-based value chains	IA	10.00			Around 5.00	2
HORIZON-CL6-2025-01-CIRCBIO-11: Support to the	CSA	2.00			Around 2.00	1

EU Biotechnology and Biomanufacturing Initiative: scoping action						
HORIZON-CL6-2025-01-CIRCBIO-12: Demonstration of reduced energy use and optimised flexible energy supply for industrial bio-based systems	IA	11.00			Around 5.50	2
HORIZON-CL6-2025-01-CIRCBIO-13: Harmonizing and optimising composting plants performances in Europe	CSA	2.00			Around 2.00	1
HORIZON-CL6-2025-01-CIRCBIO-14: Reconstructing areas affected by conflicts: the role of the bio-based solutions	RIA	8.00			Around 4.00	2
HORIZON-CL6-2025-01-CIRCBIO-15: Bioprospecting and optimised production of marine/aquatic natural products in the omics & artificial intelligence era	IA	12.00			Around 6.00	2
HORIZON-CL6-2025-01-CIRCBIO-16: European partnership: Forests and Forestry for a Sustainable Future	COFUND	30.00			Around 30.00	1
Destination - Clean environment and zero pollution						
HORIZON-CL6-2025-01-ZEROPOLLUTION-01: Innovative and advanced monitoring and modelling systems for revised air quality policies	RIA	10.00			Around 10.00	1

HORIZON-CL6-2025-01-ZEROPOLLUTION-02: Environmental impacts from the production of agricultural crops for bio-based industrial systems	CSA	2.00			Around 2.00	1
HORIZON-CL6-2025-01-ZEROPOLLUTION-03: Substances of concern and emerging pollutants from bio-based industries and products: mapping and replacement	IA	10.00			Around 5.00	2
HORIZON-CL6-2025-01-ZEROPOLLUTION-04: Environmental biotechnology applications in service of remediation of polluted ecosystems	RIA	8.00			Around 4.00	2
HORIZON-CL6-2025-01-ZEROPOLLUTION-05: Towards a comprehensive European strategy to assess and monitor aquatic litter including plastic and microplastic pollution	RIA	6.00			Around 6.00	1
HORIZON-CL6-2025-01-ZEROPOLLUTION-06: Cumulative impacts of marine pollution on marine organisms and ecosystems	RIA	12.00			Around 6.00	2
HORIZON-CL6-2025-01-ZEROPOLLUTION-07: Provide digital solutions tailored to small and medium-sized farms to monitor and sustainably manage water, nutrients, other inputs and natural resources	IA	8.00			Around 8.00	1

HORIZON-CL6-2025-01-ZEROPOLLUTION-08: Reducing pollution from the food and drink industries	IA	12.00			Around 6.00	2
Overall indicative budget		410.00	20.00	20.00		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - Cluster 6 Call 02

HORIZON-CL6-2025-02

Overview of this call[26]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)			Expected EU contribution per project	Indicative number of projects
		2025	2026	2027		

26

					(EUR million)[27]	expected to be funded
Opening: 06 May 2025 Deadline(s): 04 Sep 2025						
Destination - Fair, healthy and environment-friendly food systems from primary production to consumption						
HORIZON-CL6-2025-02-FARM2FORK-01: Additional activities for the European partnership on accelerating farming systems transition - agroecology living labs and research infrastructures	COFUND	30.00	30.00		Around 60.00	1
HORIZON-CL6-2025-02-FARM2FORK-02: Additional activities for the European partnership on animal health and welfare	COFUND	40.00	40.00		Around 80.00	1
HORIZON-CL6-2025-02-FARM2FORK-03: Overcoming the barriers for scaling up circular water management in agriculture	IA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-FARM2FORK-04: Enhancing plant protein production to bolster the resilience of agricultural systems and EU self-sufficiency in plant protein feed	RIA	11.00			Around 5.50	2
HORIZON-CL6-2025-02-FARM2FORK-05: Emerging and future risks to	RIA	12.00			Around 6.00	2

[27] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

plant health						
HORIZON-CL6-2025-02-FARM2FORK-06: Developing innovative phytosanitary measures for plant health - focus on systems approach for pest risk management	RIA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-FARM2FORK-07: Improving grassland management in European livestock farming systems	RIA	16.00			Around 8.00	2
HORIZON-CL6-2025-02-FARM2FORK-08: Fostering animal breeding and genetics for climate change adaptation and mitigation, improved robustness and resilience	RIA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-FARM2FORK-09: Innovating for on-farm post-harvest operations, storage and transformation of crops into food and non-food products	IA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-FARM2FORK-10: Exploring the potential of controlled environment agriculture (CEA)	RIA	6.00			Around 6.00	1
HORIZON-CL6-2025-02-FARM2FORK-11: Diversifying aquaculture production with emphasis on low-trophic species	IA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-FARM2FORK-12: Towards	IA	12.00			Around 6.00	2

modern, integrated, and effective fisheries monitoring, control and surveillance (MCS) systems in Europe						
HORIZON-CL6-2025-02-FARM2FORK-13: Nutrition and Mental Health	RIA	10.00			Around 5.00	2
HORIZON-CL6-2025-02-FARM2FORK-14: Raising citizen awareness on alternative proteins derived from biotechnology	CSA	2.00			Around 2.00	1
HORIZON-CL6-2025-02-FARM2FORK-15: Nutrients produced by microbes utilising CO2 from the air, with the support of biotechnology	IA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-FARM2FORK-16: Making food systems more resilient to food safety risks through the deployment of technological solutions	IA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-FARM2FORK-17: Research and innovation for food waste prevention and reduction at household level through measurement, monitoring and new technologies	RIA	8.00			Around 4.00	2
HORIZON-CL6-2025-02-FARM2FORK-18: Additional activities of the European partnership on sustainable food systems for people, planet and climate	COFUND	35.00			Around 35.00	1

HORIZON-CL6-2025-02-FARM2FORK-19: Developing agroecology living labs and lighthouses under the Food and Nutrition Security and Sustainable Agriculture (FNSSA) partnership	RIA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-FARM2FORK-20: Developing a joint AU-EU Agricultural Knowledge and Innovation System (AKIS) supporting the Food and Nutrition Security and Sustainable Agriculture (FNSSA) partnership	RIA	6.00			Around 6.00	1
HORIZON-CL6-2025-02-FARM2FORK-21: Nutrition in emergency situations - Ready-to-use Supplementary Food (RUSF) and Ready-to-use Therapeutic Food (RUTF)	RIA	8.00			Around 4.00	2
Destination - Land, ocean and water for climate action						
HORIZON-CL6-2025-02-CLIMATE-01: The ocean-climate-biodiversity nexus and marine carbon dioxide removal (mCDR)	RIA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-CLIMATE-02: The ocean-climate-biodiversity-people nexus: uncovering safe operating space for safeguarding the integrity and health of the global ocean	RIA	19.50			Around 6.50	3
HORIZON-CL6-2025-02-CLIMATE-03:	RIA	10.00			Around	2

Understanding and managing medium and longer-term challenges and opportunities for agriculture stemming from shifting climatic zones and changing agroecological environments					5.00	
HORIZON-CL6-2025-02-CLIMATE-04: Monitoring, reporting, verification and mitigation of non-CO2 greenhouse gas emissions and related air pollutants from agriculture	RIA	12.00			Around 6.00	2
HORIZON-CL6-2025-02-CLIMATE-05: Strengthening the resilience of water systems and water sector to climate and global socio-economic change impacts	IA	18.00			Around 6.00	3
HORIZON-CL6-2025-02-CLIMATE-06: Additional activities for the European Partnership Water Security for the Planet (Water4All)	COFUND	23.00	23.00	24.00	Around 70.00	1
Destination - Resilient, inclusive, healthy and green rural, coastal and urban communities						
HORIZON-CL6-2025-02-COMMUNITIES-01: Adapting to and mitigating demographic trends in rural areas through evidence-based planning and innovative solutions	RIA	13.00			Around 6.50	2
HORIZON-CL6-2025-02-COMMUNITIES-02: Exploring and improving access to housing in rural areas and developing the houses and villages of the	RIA	6.00			Around 6.00	1

future						
HORIZON-CL6-2025-02-COMMUNITIES-03: Research and Innovation solutions for resilient coastal communities in the Atlantic	IA	6.00			Around 6.00	1
HORIZON-CL6-2025-02-COMMUNITIES-04: Creating urban co-creation spaces for driving sustainable food system transformation	RIA	12.00			Around 6.00	2
Overall indicative budget		423.50	93.00	24.00		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - Cluster 6 Call 03

HORIZON-CL6-2025-03

Overview of this call[28]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[29]	Indicative number of projects expected to be funded
		2025		
Opening: 06 May 2025 Deadline(s): 24 Sep 2025				
Destination - Innovative governance, environmental observations and digital solutions in support of the Green Deal				
HORIZON-CL6-2025-03-GOVERNANCE-01: Improving understanding and analytical capacity of farmers bargaining power and interactions with the upstream and downstream operators in the agriculture and food value chains	RIA	6.00	Around 6.00	1
HORIZON-CL6-2025-03-GOVERNANCE-02: Upscaling payments for environmental services with result-based, collective or spatially coordinated approaches for more support targeted towards the delivery of agri-environment-climate public goods	IA	12.00	Around 6.00	2
HORIZON-CL6-2025-03-GOVERNANCE-03: Boosting the attractiveness of agriculture and the connection between the farming community and society	RIA	6.00	Around 6.00	1
HORIZON-CL6-2025-03-GOVERNANCE-04: Operationalisation of bioeconomy	RIA	4.50	Around 4.50	1

[28] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2025.

[29] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

sustainability principles				
HORIZON-CL6-2025-03-GOVERNANCE-05: Exploring options to resolve land and sea use competition	RIA	9.00	Around 4.50	2
HORIZON-CL6-2025-03-GOVERNANCE-06: Strengthening and connecting bioeconomy networks	CSA	4.40	Around 4.40	1
HORIZON-CL6-2025-03-GOVERNANCE-07: Strengthening the European Research Area by enhancing the bioeconomy research and innovation ecosystem in BIOEAST countries	CSA	4.00	Around 4.00	1
HORIZON-CL6-2025-03-GOVERNANCE-08: Effective environmental observing systems and associated governance	RIA	10.00	Around 5.00	2
HORIZON-CL6-2025-03-GOVERNANCE-09: Delivering Earth Intelligence to accelerate the green and digital transition	IA	15.00	Around 7.50	2
HORIZON-CL6-2025-03-GOVERNANCE-10: Improving and integrating polar observation systems in response to user requirements at local, regional, and international level	RIA	16.00	Around 8.00	2
HORIZON-CL6-2025-03-GOVERNANCE-11: Enhancing sustainable rural development through digital twins for rural communities, agriculture and forestry	RIA	12.00	Around 6.00	2
HORIZON-CL6-2025-03-GOVERNANCE-12: Increasing knowledge flows to practice within Agricultural Knowledge and Innovation Systems (AKIS) via thematic networks	CSA	3.00	Around 3.00	1
HORIZON-CL6-2025-03-GOVERNANCE-13: Strengthening knowledge and skills of advisors and integrating them into Agricultural Knowledge and Innovation Systems (AKIS) via an EU advisory network	CSA	7.00	Around 7.00	1
HORIZON-CL6-2025-03-GOVERNANCE-14: Preparing farmers, their workforce and	RIA	5.00	Around 5.00	1

advisors to the future of agriculture by providing the relevant knowledge and skills at the right time and place				
HORIZON-CL6-2025-03-GOVERNANCE-15: Supporting the implementation of Horizon projects with multi-actor approach (MAA) and boosting the use of their results in practice	CSA	6.00	Around 6.00	1
Overall indicative budget		119.90		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Destinations

Destination - Biodiversity and ecosystem services

Under destination “Biodiversity and ecosystem services”, R&I in 2025 provides scientific support to the development and implementation of EU environmental legislation and of European Green Deal initiatives. This destination is based on the vision developed in the EU biodiversity strategy for 2030 and supports its implementation, pursuing the orientations of the Work Programmes 2021-2022 and 2023-2024, and notably focuses on the EU Nature Restoration Law and other new European Green Deal initiatives such as the proposal for an EU soil monitoring and resilience law, the proposal for an EU forest monitoring law and the EU Taxonomy for Sustainable Activities (specifically the Environmental Delegated Act) and the EU action plan: protecting and restoring marine ecosystems for sustainable and resilient fisheries. R&I activities continue to support the environmental objectives of the common agricultural policy and reflect the strong interconnections between the EU biodiversity strategy for 2030 and the farm to fork strategy, including the pollinators initiative.

R&I on biodiversity and ecosystems services, if translated into action, contribute to a clean environment for the EU and Associated Countries, including water, soil, air, health, climate adaptation and risk (including disaster risk) reduction, sustainable bioeconomy and blue economy policies.

This destination also contributes to the twin green and digital transition. Where relevant, advantage should be taken of the use of advanced digital technologies and tools such high-performance computing, Artificial Intelligence (AI) and Environmental Observation where appropriate.

This destination supports the EU leadership in the relevant international fora in line with the Commission priority 'A stronger Europe in the world' and develops analysis and tools for the implementation of the Kunming-Montreal Global Biodiversity Framework. Its activities serve the objectives of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the Intergovernmental Panel on Climate Change (IPCC) and of the potential International/Intergovernmental Panel for Ocean Sustainability (IPOS).

Proposals for topics under this destination should set out a credible pathway contributing to “**putting biodiversity on a path to recovery, and protecting and restoring ecosystems and their services**” of the Strategic Plan 2025-2027, and more specifically to one or more of the following impacts:

- improved knowledge, innovations, methods, pathways and tools are available to protect healthy ecosystems and to restore degraded ones ensuring the provision of ecosystem services, including for adaptation and/or mitigation to climate change;

- the ongoing biodiversity crisis and its consequences, the benefits of ecosystem services and the need to protect and restore them are better understood. Policymakers and all

relevant sectors of society are aware and well informed thereof, and fully grasp opportunities of biodiversity protection and restoration. Society is on a path of transformative change;

- farmers, foresters, and land managers test and implement biodiversity-friendly practices while safeguarding long-term sustainability and food security;
- progress towards reaching the goals and targets of the Kunming-Montréal Global Biodiversity Framework contributes to reducing the pressure on biodiversity and to ensuring sustainable development worldwide.

R&I under Destination "Biodiversity and ecosystem services" will mostly deliver under Key Strategic Orientation (KSO) 1 of Horizon Europe Strategic Plan 2025-2027: Green transition and to a lesser extent KSO 3: A more resilient, competitive, inclusive and democratic Europe.

Spending under this destination counts 100% against the target for biodiversity expenditure under Horizon Europe. In addition, most of the activities, especially in the area of ecosystem restoration, contribute to the target for climate expenditure.

The Work Programme 2025 supports additional activities of the European Biodiversity Partnership Biodiversa+, while ensuring complementarity of actions with other instruments.

Synergies are sought with:

- EU missions, in particular "A Soil Deal for Europe" and "Restoring our ocean and waters by 2030" in topics dealing with nature restoration;
- Horizon Europe partnerships: in addition to Biodiversa +, several co-funded partnerships under Cluster 6 notably Water4All, sustainable blue economy and agroecology;
- JRC activities, notably the EC Knowledge Centre for Biodiversity (KCBD) and its Science Service for Biodiversity (SSBD), the Competence Centre on Participatory and Deliberative Democracy, the European Technical Support Centre for the Global Biodiversity Framework as requested by the Convention on Biological Diversity, European regional centre for biodiversity and the Global Knowledge Support Service for Biodiversity (GKSSB).

To maximise the impacts of R&I under this destination, international cooperation is encouraged in topics as appropriate. International cooperation is sought, in particular in topics that support IPBES, the implementation of the Kunming-Montreal Global Biodiversity Framework, the Sustainable Development Goals, the Paris Agreement and related international agreements such as the Agreement on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ).

Under this destination there is a substantial need for more fundamental research and therefore there is a majority of Research and Innovation Actions (RIAs).

This destination benefits from interdisciplinarity and trans-disciplinarity, including the contribution of social sciences and humanities (SSH), and takes into due account gender and other social categories and their intersections to ensure promotion of democracy and a socially just transition where relevant. Furthermore, it strives to take full advantage of the potential of nature restoration and nature-based solutions, to deliver multiple social, economic and environmental co-benefits.

Consolidating biodiversity knowledge for nature and society

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-01-BIODIV-01: Additional activities for the European Biodiversity Partnership: Biodiversa+

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 60.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 60.00 million.
Type of Action	Programme Co-fund Action
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). The proposal must be submitted by the coordinator of the consortium funded under HORIZON-CL6-2021-BIODIV-02-01 and HORIZON-CL6-2023-BIODIV-01-18. This eligibility condition is without prejudice to the possibility to include additional partners.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions. If the proposal is successful, the next stage of the procedure will be grant agreement amendment preparations. If the outcome of amendment preparations is an award decision, the

	coordinator of the consortium funded under HORIZON-CL6-2021-BIODIV-02-01: European partnership rescuing biodiversity to safeguard life on Earth will be invited to submit an amendment to the grant agreement, on behalf of the beneficiaries.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: This action is intended to be implemented in the form of an amendment of the grant agreement concluded pursuant to topic HORIZON-CL6-2021-BIODIV-02-01. For the additional activities covered by this action: • The funding rate is 30% of the eligible costs. • Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants. • Financial support provided by the participants to third parties is one of the primary activities of this action in order to be able to achieve its objectives. The EUR 60 000 threshold provided for in Article 204(a) of the Financial Regulation No 2018/1046 does not apply. • The maximum amount of FSTP to be granted to an individual third party is EUR 7 000 000. This amount is justified since provision of FSTP is one the primary activities of this action and it is based on the extensive experience under predecessors of this partnership. The starting date of grants awarded under this topic may be as of the submission date of the application. Applicants must justify the need for a retroactive starting date in their application. Costs incurred from the starting date of the action may be considered eligible (and will be reflected in the entry into force date of the amendment to the grant agreement).
Total indicative budget	The total indicative budget for the topic is EUR 60 million committed in annual instalments over years 2025-2027 (EUR 20 million from the 2025 budget, EUR 20 million from the 2026 budget and EUR 20 million from the 2027 budget).

Expected Outcome: The third instalment of the partnership is expected to further contribute to the expected outcomes specified in topics HORIZON-CL6-2021-BIODIV-02-01 and HORIZON-CL6-2023-BIODIV-01-18, for continuation of the activities in line with already agreed outcomes. In addition, during the third instalment, the partnership is also expected to

contribute to the objectives of the EU Nature Restoration Law, which supports climate change mitigation and adaptation.

Scope: The objective of this action is to continue to provide support to the European Biodiversity Partnership Biodiversa+ identified in the Horizon Europe Strategic Plan 2021-2024 and implemented under the previous topics HORIZON-CL6-2021-BIODIV-02-01 and HORIZON-CL6-2023-BIODIV-01-18, and in particular to fund additional activities (which may also be undertaken by additional partners) in view of its intended scope and duration, and in accordance with Article 24(2) of the Horizon Europe Regulation. It is expected that the partnership's additional activities will contribute to the objectives of the EU Nature Restoration Law which contributes to the Union's overarching objectives concerning climate change mitigation and adaptation.

The consortium which applied to and received funding under HORIZON-CL6-2021-BIODIV-02-01 and HORIZON-CL6-2023-BIODIV-01-18 is uniquely placed to submit a proposal to continue the envisioned partnership. Not only did this consortium submit the proposal leading to the identification of the partnership in the Horizon Europe strategic planning 2021-2024, it has also implemented the partnership through co-funded annual calls in years 2021-2024 based on this planning and further to topics HORIZON-CL6-2021-BIODIV-02-01 and HORIZON-CL6-2023-BIODIV-01-18. In this context, the current consortium has particular expertise in relation to the objectives of the Partnership, the activities to be implemented in particular FSTP calls or other calls/scope of calls clearly required/envisioned pursuant to initial proposal/partnership, and other relevant aspects of the action. In practice, another consortium could not continue the activities of the Partnership underway without significant disruption to the ongoing activities, if at all.

The scope of the application for this call on the European Biodiversity Partnership Biodiversa+ should focus on the flagship programmes 2025-27 according to the partnership's co-created strategic research and innovation agenda for seven years, which includes calls for research projects, biodiversity- and ecosystems monitoring and science-based policy advisory activities, and all horizontal activities to allow the Partnership to operate and to achieve its five specific objectives.

It is expected that the partnership continues to organise joint calls on an annual base and therefore it should factor ample time to run the co-funded projects. It should build on, and widen, the data availability in European Research Infrastructures federated under the European Open Science Cloud.

The partnership should collaborate closely with the EC Knowledge Centre for Biodiversity and its Science Service currently being set up by the Horizon Europe project BioAgora, and seek to collaborate with EU space programmes (Copernicus, Galileo) to foster the use of emerging or operational space technologies for policy development. Moreover, the partnership should describe specific activities foreseen in order to strengthen the complementarities with other related Missions and Partnerships.

While the award of a grant to continue the Partnership in accordance with this call should be based on a proposal submitted by the coordinator of the consortium funded under HORIZON-CL6-2021-BIODIV-02-01 and HORIZON-CL6-2023-BIODIV-01-18, and the additional activities (which may include additional partners) to be funded by the grant should be subject to an evaluation, this evaluation should take into account the existing context and the scope of the initial evaluation as relevant, and related obligations enshrined in the grant agreement.

Taking into account that the present action is a continuation of topic HORIZON-CL6-2021-BIODIV-02-01 and HORIZON-CL6-2023-BIODIV-01-18, and foresees an amendment to an existing grant agreement, the proposal should also present in a separate document the additional activities and additional partners, if any, to be covered by the award in terms of how they would be reflected in the grant agreement.

The partnership should pool the necessary financial resources from the participating national (or regional) research programmes with a view to implementing joint calls for transnational proposals resulting in grants to third parties.

HORIZON-CL6-2025-01-BIODIV-02: Strengthening the capacity of citizen science in biodiversity observation

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy

	Community (2021-2025). [30].

Expected Outcome: In supporting the implementation of the European Green Deal, the EU biodiversity strategy for 2030 and the EU Nature Restoration Law, which contributes to the EU's overarching objectives on climate mitigation and adaptation, the successful proposal will deliver on the following impact of this Destination: "*improved knowledge, innovations, methods, pathways and tools are available to protect healthy ecosystems and to restore degraded ones ensuring the provision of ecosystem services, including for adaptation and/or mitigation to climate change*" and is expected to strengthen the role of European citizens in the generation of knowledge on biodiversity, ecosystems and their provision of essential ecosystem services to society.

Project results are expected to contribute to all of the following expected outcomes:

- capacity for citizen engagement in biodiversity observation is enhanced, citizen science initiatives are better coordinated by citizen science experts (taxonomy, genomics, IT, education and communication experts) and their outputs better harmonised, while their role in taxonomic networks and communities is better integrated, supporting modern taxonomic research and resolution of pressing ecological challenges;

- systematic biodiversity observation is established (including citizen science and environmental observations), covering also little-known taxonomic groups and going beyond what the current policy is covering. Specifically, the possibilities of using citizen science data for monitoring ecosystem dynamics in time and for modelling the effects of the drivers of biodiversity loss, notably climate change, on species distribution are enhanced.

Scope: Citizen science is key to gather in situ biodiversity data, which complement official/national data collection programmes. There are hundreds of citizen science initiatives across the European Union, managed and/or funded by EU, national or regional authorities, NGOs, municipalities and others. Data are not always collected and/or presented in a harmonised way, preventing their best use. Many lesser-known species are overlooked, as well as some opportunities (e.g. collaboration with key stakeholders such as farmers, foresters, fishers, hunters, urban planners). A coordinated approach, at the level of the EU, is necessary to tackle some specific issues such as challenges in nature management, state of plant health, spread of invasive alien species, changes in species distribution or migrations due to climate change or as result of human activity (e.g., transport, agriculture, industrial production).

Activities under this topic are expected to:

[30] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- analyse all tools available for citizen science on biodiversity (taxonomy fiches, schoolkits, App, use of e-DNA kits, artificial intelligence, etc), collect best practices and propose/identify, if necessary, new ones in collaboration with taxonomy, genomics, IT, education and communication experts;

- develop strategies, roadmaps and guidelines and test them to scale up citizen engagement in biodiversity observation, including a review of good practices for setting up a system of incentives to attract and retain citizen interest. The development and tests on the ground should be based on tools and protocols for data quality assessment, control and validation, consider data need scenarios (e.g. types of data used by Environmental Authorities and bodies providing scientific advice to policy makers on environmental aspects) and involve potential users (e.g. schools, stakeholders);

- identify frameworks for harmonisation and standardisation of citizen science protocols for data collection, validation, storage and sharing, as well as frameworks for interoperability of various digital tools (e.g. smart phone applications) used by citizen scientists. Attention should be paid to metadata and accessibility and transparency with regard to reference documentation, taking into account the multilingual nature of citizen science activities. Cyber security and personal data protection aspects should be considered;

- explore avenues to streamline development of essential resources for setting up and running citizen science initiatives, including kits for collection of biodiversity data, promotion and awareness raising toolkits, training schemes, applications, multilingual protocols and participation certification for diverse target groups including children and young people.

The support and early involvement of citizens and civil society is central to achieving the targeted outcomes. The proposals should focus on all potential groups of stakeholders and citizens including vulnerable groups, such as young people (including those not in education or employment), elderly people, migrants, ethnic minorities, pregnant women, and persons with disabilities.

It is expected that these activities will contribute to the objectives of the EU Nature Restoration Law and thereby also to climate change mitigation and adaptation objectives.

The proposal should foresee cooperation with the European Biodiversity Partnership Biodiversa+, as well as cooperation with and input to potential requests by the EC Knowledge Centre for Biodiversity via its Science Service, currently being set up by the Horizon Europe project BioAgora.

The selected project should coordinate with other projects working on citizen science for biodiversity[31], the European Citizen Science platform[32] and relevant organisations as the

[31] The most recent and relevant EU projects are funded under the topics HORIZON-CL6-2021-BIODIV-01-02: Data and technologies for the inventory, fast identification and monitoring of endangered wildlife and other species groups, HORIZON-CL6-2021-BIODIV-01-03: Understanding and valuing

European Citizen Science Association (ECSA), to ensure the exhaustive overview of all citizen science initiatives across the EU.

The selected project is also expected to collaborate with the projects selected under the topics HORIZON-CL6-2025-01-BIODIV-3: Strengthening taxonomic approaches for biodiversity and HORIZON-CL6-2025-01-BIODIV-04: Large-scale in situ biodiversity observations for better understanding of biodiversity state, drivers of its decline and impacts of policies.

The use of AI might be considered for analysis needed under this topic, when and if relevant.

HORIZON-CL6-2025-01-BIODIV-03: Strengthening taxonomic approaches for biodiversity

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 12.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 24.00 million.
Type of Action	Research and Innovation Actions
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio, grants will be awarded to applications not only in order of ranking but at least also to one project within the area A that is the highest ranked, and one project highest ranked within the area B, provided that the applications attain all thresholds. Proposals must clearly indicate the area they are applying to.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants. In this case, the proposals must define the process of selecting entities for

coastal and marine biodiversity and ecosystems services, HORIZON-CL6-2022-BIODIV-01-01: Observing and mapping biodiversity and ecosystems, with particular focus on coastal and marine ecosystems. Other relevant EU projects are funded under the EU Missions, in particular "Soil Deal for Europe" (for example HORIZON-MISS-2022-SOIL-01-09: Citizen science for soil health), "Restoring our ocean and waters by 2030" (for example HORIZON-MISS-2024-OCEAN-01-04: Science for Community – Building the marine Citizen Science data network of the future to valorise data coming from the ocean and increase engagement), "Adaptation to Climate Change" and "Climate-neutral and smart cities".

[32] https://eu-citizen.science/.

	which financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. The maximum amount to be granted to each third party is EUR 200 000, as some of the specific taxonomic activities, key for the two selected projects, will require extensive work. Maximum 30% of the requested EU contribution may be allocated to this purpose.

Expected Outcome: In supporting the implementation of the European Green Deal, the EU biodiversity strategy for 2030 and the Kunming-Montréal Global Biodiversity Framework, successful proposals will contribute to the following impact of this Destination: "*improved knowledge, innovations, methods, pathways and tools are available to protect healthy ecosystems and to restore degraded ones ensuring the provision of ecosystem services, including for adaptation and/or mitigation to climate change*".

Project results are expected to contribute to all the following expected outcomes:

- the taxonomic community (experts who identify, name, describe, and classify biodiversity working from the level of molecules, including eDNA and eRNA, genomes and metagenomes, species and populations, to habitats and ecosystems) and its capacity to engage with and support policy and other decision-making are strengthened;
- strategic approaches for a systematic reinforcement of expertise and training of the taxonomic community in Europe, including genomics for biodiversity identification and monitoring.

Scope: R&I activities should:

- fill gaps in taxonomic expertise, including in the context of intra-species biodiversity (genetic diversity within and between populations) and habitats/ecosystems;
- establish, pilot and test novel taxonomic approaches on observing and quantifying biodiversity at all levels.
- develop strategies and roadmaps for systematic capacity building and transfer of taxonomic knowledge;
- establish a comprehensive open repository, building on the existing ones, designed to support and streamline the process of taxonomic identification, covering a wide range of data from genetic information to species classification. By integrating various sources of data, this repository will facilitate a more efficient and accurate taxonomic classification and identification and will consolidate a common European Taxonomy Initiative contributing to the Global Taxonomy Initiative;
- support development of tools to facilitate taxonomic training, such as reference collections, guidelines, standards and schemes for academic certification (e.g. within the European Credit Transfer and Accumulation System ECTS);

- establish an EU network of taxonomy and genomics experts, from taxonomic facilities to universities, including an interconnected network of biodiversity genomics facilities[33];
- ensure representative coverage of biodiversity across terrestrial, freshwater, and marine ecosystems, including lesser-known taxa and ecosystems.

Proposals should address area A or Area B as follows:

Area A:

- integrate and maximise the impact of taxonomic work across the different stages of biodiversity identification, description, curation, publication, digitalization and management, to the scale needed at national and European level;
- consolidate and underline the taxonomic ground for monitoring efforts based on expert knowledge and activity, and the use of advanced and validated tools.

Proposals may provide financial support to third parties, to cover specific needs/taxa/ecosystems and/or issues. These grants should focus on the most pressing and identified knowledge gaps, by reinforcing taxonomy notably in expertise and data lacking areas such as in Central and East European, Mediterranean and outermost regions.

Area B:

- widen participation and accessibility of genomic data, increase geographical coverage and scale of participation, whilst engaging in training and knowledge transfer, including links with non-genomic data ("from molecules to ecosystems approach");
- consolidate and enhance the uptake / use / impact of genomic data as more and better-quality data become available to support environmental management, environmental risk assessment and sustainable use of natural resources;
- establish a comprehensive biodiversity genomics system in Europe, based on latest Europe progresses, particularly in DNA barcoding and whole-genome sequencing through participation in the International Barcode of Life and the Earth BioGenome Project.

Proposals may provide, when relevant, financial support to third parties to cover specific needs/taxa/ecosystems and/or issues related to the use of genomic data. These grants should focus on the most pressing and identified knowledge gaps, by reinforcing genomic taxonomy notably in expertise and data lacking areas such as in Central and East European, Mediterranean and outermost regions.

The proposals should foresee cooperation with the European Biodiversity Partnership Biodiversa+, as well as cooperation with and input to potential requests by the EC Knowledge

[33] Associated Countries can participate in the network.

Centre for Biodiversity via its Science Service, currently being set up by the Horizon Europe project BioAgora.

The proposals should use existing platforms and information sharing mechanisms relevant to the topic and build on relevant projects including TETTRIs, BGE and EuropaBON[34]. The proposals should foresee close collaboration with the other project selected under this topic and collaboration with the projects selected for topics HORIZON-CL6-2025-01-BIODIV-02: Strengthening the capacity of citizen science in biodiversity observation and HORIZON-CL6-2025-01-BIODIV-04 on large-scale biodiversity observations.

The proposals should coordinate with relevant organisations as the Consortium of European Taxonomic Facilities (CETAF) and with the upcoming pilot on the EU Biodiversity Observation Coordination Centre (EBOCC). The proposals should also connect to existing European Biodiversity data infrastructures including DiSSCo, LifeWatch ERIC, EMBRC and eLTER, where relevant. The activities should cover also alien species, thereby contributing to the implementation of the Invasive Alien Species Regulation.

Concrete efforts should be made to ensure that the data produced in the context of the funded projects is FAIR (Findable, Accessible, Interoperable and Re-usable), particularly in the context of real-time data feeds, exploring workflows that can provide "FAIR-by-design" data, i.e., data that is FAIR from its generation. Possibilities offered by the European Open Science Cloud (EOSC) to store and give access to research data should be considered.

International cooperation is encouraged.

The use of AI might be considered for analysis needed under this topic.

HORIZON-CL6-2025-01-BIODIV-04: Large-scale in situ biodiversity observations for better understanding of biodiversity state, drivers of its decline and impacts of policies

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 12.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 24.00 million.
Type of Action	Research and Innovation Actions
Legal and financial	The rules are described in General Annex G. The following

[34] Other relevant projects are BIOCEAN5D, MARBEFES, OBAMA-NEXT, MARCO-BOLO and DiverSea and the project funded under Area A of HORIZON-CL6-2024-BIODIV-01: Digital for Nature.

set-up of the Grant Agreements	exceptions apply: Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 60 000.

Expected Outcome: In supporting the implementation of the European Green Deal, and in particular the EU biodiversity strategy for 2030, successful proposals will contribute to the following impact of this destination: "*the ongoing biodiversity crisis and its consequences, the benefits of ecosystem services and the need to protect and restore them are better understood. Policymakers and all relevant sectors of society are aware and well informed thereof, and fully grasp opportunities of biodiversity protection and restoration*". Successful proposals are expected to support the implementation of the EU Nature Restoration Law, which contributes to the Union's overarching objectives concerning climate change mitigation and adaptation.

Project results are expected to contribute to all of the following expected outcomes:

- competent authorities in charge of the design and implementation of biodiversity policies at all levels have more high-quality data and information from in situ biodiversity observations to understand the biodiversity state and trends in the EU and in Associated Countries;

- more high-quality data and information from in situ biodiversity observations is available to evaluate the effectiveness (in terms of biodiversity related objectives) of policies and business activities and for applied research and innovation.

Scope: The EU biodiversity strategy for 2030 sets the following targets for 2030: significant areas of degraded and carbon-rich ecosystems are restored; habitats and species show no deterioration in conservation trend and status, and at least 30% reach favourable conservation status or at least show a positive trend. The EU Nature Restoration Law establishes a framework within which Member States shall put in place effective and area-based restoration measures with the aim to jointly cover, as a Union target, throughout the areas and ecosystems within the scope of this Regulation, at least 20 % of land areas and at least 20 % of sea areas by 2030, and all ecosystems in need of restoration by 2050. At global level, the EU has taken commitments reflecting the EU targets with the Kunming-Montréal Global Biodiversity Framework.

However, knowledge of the state and trends of biodiversity and ecosystems in the EU is insufficient to enable a robust measurement of progress towards the EU and global commitments and targets. To fill these knowledge gaps, robust data and information on species and habitats have to be generated. Large-scale in situ observations are essential to deliver such data and information with adequate quantity and quality. Besides improved understanding of the state of biodiversity and ecosystems, better in-situ data on species and habitats, coupled with other data sources, will also enable better identification and quantification of the effects of drivers of biodiversity decline, impacts of policy actions to

mitigate those effects and overall progress made under the green transition. High-quality in situ data is also essential for building and updating reliable indicators and models, their validation and improvement, as well as the validation of newly developed observation techniques.

R&I activities should:

- prepare harmonised or standardised frameworks for the execution of biodiversity observations and apply state-of-the-art protocols of the utilised sampling techniques, in order to ensure the quality and interoperability and public access of the collected data. Particular attention should be paid to comprehensive and robust metadata. In particular a comprehensive coverage of the territory of EU Member States should be sought;

- undertake systematic large-scale in situ observations of biodiversity in order to a) record occupancy, richness and abundance of species and populations, b) map species, populations and habitats, and c) survey habitat composition and structure. In this regard, the activities should generate data of adequate spatial and temporal granularity, and cover species and habitats in terrestrial, freshwater and marine ecosystems, including lesser-known taxa;

- based on the undertaken observations:

    - assess the state, geographical distribution, phenology and trends of observed species populations,

    - assess the quality, structure, functions and geographical distribution of observed habitats;

    - fill species and habitat data gaps in terms of geographical coverage in the EU and in Associated Countries, as well as the data gaps in terms of taxonomic coverage.

The use of AI might be considered for analysis needed under this topic.

Concrete efforts should be made to ensure that the data produced in the context of the funded project is FAIR (Findable, Accessible, Interoperable and Re-usable), exploring workflows that can provide “FAIR-by-design” data, i.e., data that is FAIR from its generation.

The proposals should foresee cooperation with and input to potential requests by the EC Knowledge Centre for Biodiversity via its Science Service, currently being set up by the Horizon Europe project BioAgora and with the upcoming pilot on the EU Biodiversity Observation Coordination Centre (EBOCC). Proposals should also show how the planned activities could provide timely information for consideration by the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES).

Projects will be asked to cooperate with projects that will be selected under the following topic under this call: HORIZON-CL6-2025-01-BIODIV-05: Assessing and modelling

ecosystems' dynamic processes to guide restoration activities and to improve models used for climate.

Restoring ecosystems for resilient society and economy

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-01-BIODIV-05: Assessing and modelling ecosystems' dynamic processes to guide restoration activities and to improve models used for climate

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 15.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio, grants will be awarded to applications not only in order of ranking but at least also to one project within the area A that is the highest ranked, and one project highest ranked within the area B, provided that the applications attain all thresholds. Proposals must clearly indicate the area they are applying to.

Expected Outcome: In line with the European Green Deal and the EU biodiversity strategy for 2030 successful proposals will contribute to the following impact of this destination: "*improved knowledge, innovations, methods, pathways and tools are available to protect healthy ecosystems and to restore degraded ones ensuring the provision of ecosystem services to society, including for adaptation and/or mitigation to climate change"* by improving knowledge and developing modelling tools to guide the restoration of degraded ecosystems

ensuring the provision of ecosystem services, including for adaptation and/or mitigation to climate change.

Project results are expected to contribute to all the following expected outcomes:

- national competent authorities, decision makers and practitioners having to implement restoration activities benefit from updated knowledge and new tools based on modelling approaches;
- nature restoration is fully taken into account in the modelling frameworks used for climate and land use policies.

Scope: The EU biodiversity strategy for 2030 set the following targets for 2030: significant areas of degraded and carbon-rich ecosystems are restored; habitats and species show no deterioration in conservation trend and status, and at least 30% reach favourable conservation status or at least show a positive trend. The EU Nature Restoration Law establishes framework within which Member States shall put in place effective and area-based restoration measures with the aim to jointly cover, as a Union target, at least 20 % of land areas and at least 20 % of sea areas by 2030, and all ecosystems in need of restoration by 2050.

The use of models is expected to support national and EU competent authorities and stakeholders for the implementation of the EU Nature Restoration Law, in particular in the following areas:

- determination of the good conditions of habitats as defined in the Habitats directive and the good environmental status defined in the Marine strategic framework directive;
- establishment of threshold values for the favourable reference area for habitats and ecosystems covered by the proposal for an EU Nature Restoration Law;
- estimate of ecological needs of species in terms of quantity and quality of their habitats and better understanding of links between habitats and ecosystems restoration and species conservation;
- better understanding of connectivity, functionality, ecological coherence of Natura 2000 network and marine reserve network and competing needs of species;
- analysis of restoration pathways proposed by competent authorities to achieve the short term (2030) and long term (2040-2050) targets of the EU biodiversity strategy for 2030 and the EU Nature Restoration Law for all ecosystem types.

Proposals should address Area A: main focus on terrestrial ecosystems or Area B: main focus on marine ecosystems. The area (A or B) should be clearly indicated on the application.

For both areas, R&I activities should:

- develop a model as described above capable of simulating dynamic ecosystems processes based on literature review, available datasets or data-basis, realised restoration

activities, on-going projects including demonstration cases, and existing guidance. The model should be able to estimate ecological reference values in given contexts including under climate change, to assess proposed restoration pathways and to contribute to improve/expand other models;

- prioritise ecosystems corresponding to synergies identified between ecosystem restoration and one or several of the following areas: climate change mitigation, climate change adaptation, land degradation neutrality and disaster risk prevention;
- address data gaps with direct observation if needed;
- formulate practical guidelines or advices for practitioners about how to carry out restoration;
- aim at improving and expanding models used for climate and land-use policies, by coupling modelling functionalities as described above.

Proposals should build on the results of relevant existing projects and envisage enough resources to collaborate with other selected projects under this topic to provide an effective integration of the generated models.

Proposals should build on the knowledge compiled in the assessment reports produced by the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES), including the IPBES scenarios and models assessment, and should show how the planned activities could provide timely information for consideration to future reports.

Concrete efforts should be made to ensure that the data produced in the context of the funded projects is FAIR (Findable, Accessible, Interoperable and Re-usable), particularly in the context of real-time data feeds, exploring workflows that can provide "FAIR-by-design" data, i.e., data that is FAIR from its generation. Possibilities offered by the European Open Science Cloud (EOSC) to store and give access to research data should be considered, including data from in-situ sensors and satellite-based Earth observations.

When dealing with models, actions should promote the highest standards of transparency and openness, as much as possible going well beyond documentation and extending to aspects such as assumptions, protocols, code and data that is managed in compliance with the previously mentioned FAIR principles.

Projects will be asked to cooperate with projects that will be selected under the following topics under this call: HORIZON-CL6-2025-01-BIODIV-04: Large-scale in situ biodiversity observations for better understanding of biodiversity state, drivers of its decline and impacts of policies and HORIZON-CL6-2025-01-BIODIV-06: Assessing and modelling socio-economic impacts of nature restoration.

The proposals should foresee cooperation with and input to potential requests by the EC Knowledge Centre for Biodiversity via its Science Service, currently being set up by the Horizon Europe project BioAgora.

HORIZON-CL6-2025-01-BIODIV-06: Assessing and modelling socio-economic impacts of nature restoration

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 16.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).

Expected Outcome: In line with the European Green Deal and the EU biodiversity strategy for 2030, successful proposals will contribute to the following impact of this destination: "*the ongoing biodiversity crisis and its consequences, the benefits of ecosystem services and the need to protect and restore them are better understood. Policymakers and all relevant sectors of society are aware and well informed thereof, and fully grasp opportunities of biodiversity protection and restoration. Society is on a path of transformative change"* by providing tools to assess the socio-economic benefits and impacts of measures aiming at restoring degraded ecosystems ensuring the provision of ecosystem services, including for adaptation and/or mitigation to climate change.

Project results are expected to contribute to all the following expected outcomes:

- short, medium, and long-term socio-economic benefits and impacts of nature restoration, including their social distribution, are better known including by scientists and stakeholders of the public and private sectors;
- policy-makers have at their disposal science-based tools to predict benefits and impacts of the implementation of policies aiming at restoring nature;
- stakeholders in charge of financing or implementing nature restoration have tools at their disposal to integrate benefits and impacts of nature restoration in their business plans;
- socio-economic benefits and costs are traceable directly to the intervention or the origin of stressor, for instance reduction of pollution input.

Scope: The EU biodiversity strategy for 2030 set the following targets for 2030: significant areas of degraded and carbon-rich ecosystems are restored; habitats and species show no deterioration in conservation trend and status, and at least 30% reach favourable conservation status or at least show a positive trend. The proposal for an EU Nature Restoration Law sets binding targets for 2030 and 2050, with an incremental implementation.

R&I activities are expected to:

- conduct sector-specific assessments to measure the comprehensive economic and social (including employment) impacts and benefits of nature restoration, including their social distribution, encompassing both the financial effect of economic activities and the non-market benefits (including climate mitigation and adaptation, health and well-being benefits) derived from ecosystem services including provisioning, regulating and cultural services as well as nature's contribution to people;

- employ a multidisciplinary approach combining at least expertise in economics, ecology, sociology, sustainability and environmental science as well as system and complexity science to capture the full range of impacts and benefits;

- develop and validate modelling approaches, that can build on existing environmental and socio-economic models, to analyse the economic, social and employment impacts and benefits of nature restoration, including their social distribution, integrating also biodiversity, ecosystem services and nature’s contribution to people good quality of life including food security;

- enable understanding of the incremental progress in nature restoration between the 2030 and 2050 target years to guide public and private stakeholders in their continued actions through quantification of socio-economic benefits and impacts of individual measures;

- improve the understanding of the possibilities and limitations of tools for socio-economic assessments of nature restoration, particularly with regard to the non-market benefits.

Proposals should build on results of past and on-going projects and on the knowledge compiled in the assessment reports produced by the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES), including the IPBES values assessment and the IPBES scenarios and models assessment.

This topic requires the effective contribution of SSH disciplines, including economics, socio-economics and sociology. It is essential to involve SSH experts and institutions, as well as incorporate relevant gender expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

Concrete efforts should be made to ensure that the data produced in the context of the funded projects is FAIR (Findable, Accessible, Interoperable and Re-usable), particularly in the context of real-time data feeds, exploring workflows that can provide “FAIR-by-design” data, i.e., data that is FAIR from its generation.

Proposals should envisage enough resources to collaborate with other selected projects under this topic to provide an effective integration of the models generated. Projects will be asked to cooperate with projects that will be selected under the following topics under this call: HORIZON-CL6-2025-01-BIODIV-05: Assessing and modelling ecosystems' dynamic processes to guide restoration activities and to improve models used for climate and HORIZON-CL6-2025-01-BIODIV-10: Supporting the implementation of nature restoration measures for sustainable farming systems.

The proposals should foresee cooperation with and input to potential requests by the EC Knowledge Centre for Biodiversity via its Science Service, currently being set up by the Horizon Europe project BioAgora.

HORIZON-CL6-2025-01-BIODIV-07: Living labs and lighthouses co-creating innovative solutions for forests and freshwater ecosystems restoration

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [35].

[35] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Expected Outcome: In line with the European Green Deal and the EU biodiversity strategy for 2030, successful proposals will contribute to the following impact of this destination: "*improved knowledge, innovations, methods, pathways and tools are available to protect healthy ecosystems and to restore degraded ones ensuring the provision of ecosystem services to society, including for adaptation and/or mitigation to climate change"*.

Project results are expected to contribute to all the following expected outcomes:

- Capacities for participatory, interdisciplinary and transdisciplinary R&I approaches are increased, allowing for effective cooperation between research, practice and policy, to develop and test solutions, methods and tools for ecosystem restoration and for their non-deterioration;
- Practice-oriented knowledge and tools are available to stakeholders having to restore ecosystems and to ensure their non-deterioration, and to provide advice, such as public and private land managers, foresters or environmental NGOs;
- Competent authorities in charge of preparing and updating national restoration plans to implement the EU Nature Restoration Law are aware of effective solutions, methods and tools for ecosystem restoration and they are able to propose appropriate restoration measures;
- Collaborations between actors across territories and sectors are strengthened and consideration of effective solutions for ecosystem restoration and for their non-deterioration in regions where living labs are operating is increased;
- Social, economic and environmental co-benefits and trade-offs of nature restoration activities are demonstrated.

Scope: The EU biodiversity strategy for 2030 set the following targets for 2030: significant areas of degraded and carbon-rich ecosystems are restored; habitats and species show no deterioration in conservation trend and status, and at least 30% reach favourable conservation status or at least show a positive trend. The EU Nature Restoration Law establishes a framework within which Member States shall put in place effective and area-based restoration measures with the aim to jointly cover, as a Union target, at least 20 % of land areas and at least 20 % of sea areas by 2030, and all ecosystems in need of restoration by 2050. Successful proposals are expected to set up living labs which will develop and widely deploy innovative solutions for restoring key ecosystems, which deliver multiple ecosystem functions and services relevant for climate action, including carbon sequestration, regulating water regimes, and other climate adaptation aspects.

Proposals should apply the three main principles of the living labs research concept:

(a) co-creating innovative solutions in real-life sites focusing on end-users' needs;

(b) co-deciding / co-creating with end-users all along the project;

(c) bringing together actors with complementary knowledge in a targeted combination as best suited to achieve the expected outcomes/objectives of the projects.

Living labs should involve partners from different backgrounds, disciplines and/or sectors that are most relevant to achieve the project objectives and be composed of at least seven experimental sites. By working together in a living lab, the various partners involved in the different sites will be able to co-develop, experiment, test, replicate and benchmark innovative actions and solutions, compare results, exchange good practices, validate methodologies and benefit from cross-fertilisation within a local/regional setting.

More specifically, proposals should:

- set up three living labs to work together on ecosystem restoration, covering one or several ecosystem types, in particular forests and/or freshwater ecosystems. Regarding forests, plantations are excluded from the scope of this topic. The living labs must be located in at least three different EU Member States and/or Associated Countries. Proposals should describe the rationale for cooperation across the various living labs;

- establish a detailed work plan of the activities to be undertaken in a transdisciplinary way, ensuring the co-design, co-development, and co-implementation of locally adapted innovative solutions;

- conduct participatory and transdisciplinary research and innovation in living labs with the objective of finding practical solutions to ecosystem restoration, while considering relevant drivers of biodiversity loss, in particular climate change and invasive alien species, and related pressures. Moreover, challenges with scaling up and transferability of solutions should be addressed. Proposed strategies and solutions should be adapted to the different environmental, socio-economic and cultural contexts in which the living labs are operating and should integrate the gender dimension;

- identify sites that demonstrate high performance in terms of their actions and results on ecosystem restoration and potentially transforming them into lighthouses;

- establish for each living lab a satisfactory level for ecosystem condition, in order to allow for an accurate assessment of the conditions and changes and a clear monitoring of progress towards the objectives of the respective living lab and of ecosystem restoration overall;

- monitor and carry out an assessment of the innovative practices for ecosystem restoration, including the conditions for non-deterioration. This should include a demonstration of the economic viability of the proposed innovative solutions for the end-users;

- document the newly developed solutions in an intuitive and accessible way and widely disseminate them in order to facilitate their uptake by practitioners and transmit the acquired knowledge to all relevant actors.

The proposals should foresee cooperation with the Science Service for Biodiversity (SSBD) coordinated by the project BioAgora and use existing platforms and information sharing mechanisms relevant to the topic.

Nature-based solutions are relevant to this topic if they concern the restoration of ecosystems.

This topic should involve contributions from the social sciences and humanities (SSH) disciplines in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

HORIZON-CL6-2025-01-BIODIV-08: Integrated and coordinated approaches for coral reefs and associated ecosystems (mangroves and seagrass beds) conservation, restoration, and adaptation potential

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: International organisations with headquarters in a Member State or Associated Country/Non-Associated Third Country are exceptionally eligible for funding to contribute to the coordination and capacity building activities of relevant international initiatives and frameworks in the scope of this topic. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.

Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- the implementation of EU biodiversity and climate adaptation strategies and of international frameworks targets such as the Kunming-Montreal Global Biodiversity Framework objectives regarding the protection, restoration, and resilience of those connected ecosystems in both protected and non-protected areas;

- the effective management and land-sea planning of those associated ecosystems are based on approaches considering them together and integrating field experience with state-of-the-art and indigenous populations & local communities (IPLC) knowledge into hands-on guidelines;

- international initiatives are supported in the effort to coordinate and reduce the fragmentation of the current landscape of interventions and resources for the conservation and management of these ecosystems. The capacity for a durable intervention is built in outermost regions, overseas countries and territories of the EU and in third countries, in particular Least Developed Countries (LDCS) and Small Island Developing States (SDIS).

Scope: Coral reefs and seagrass beds represent about less than 1% of the ocean's surface and mangrove cover about 1%. They are home to at least 25% of known marine species and supporting up to 40% of fish species of the global ocean through food webs and nutrients cycles. About half the coral reef ecosystems have disappeared since the 1950's, 29% of the known areal extent of Seagrass has disappeared since the initial records from 1879 and about 35% of the original mangrove area was lost by the end of the 20th century, as consequences of direct drivers at play for the past decades (pollution, extraction, overfishing, dynamite fishing, coastal development, deforestation), invasive alien species and now additionally from increasing climate change impacts (rising sea surface temperature, marine heatwaves, sea level rise..). Providing multiple ecosystems services and benefits for people, research, conservation and management efforts have increased in the recent years but often targeted these systems individually, with various duration and focus.

Where they co-occur, coral reefs (including mesophotic extensions), mangroves and seagrass beds share tight ecological connections. Recent observations during coral bleaching events suggest that jointly protecting mangroves, seagrasses, and reefs may synergistically increase the success and benefits of conservation due to positive feedback at habitat boundaries. However, an integrated land-sea planning and management remain challenging because of knowledge gaps in their functional ecology and connectivity, in the spatial extents of their interactions, their seasonal patterns, the socio-political decision-making contexts for local / national planning at sea or on land, and the scarce access to knowledge, experience and to spatial data. Most of past and ongoing interventions are isolated from one another, displaying a fragmented landscape in terms of approaches, of targets, of resources and by limited recognition and inclusion of IPLCs traditional stewardships of these coastal ecosystems. Based on IUCN protected area dataset, only 18% of coastline where mangroves, seagrasses, and reefs interact are protected. Nevertheless, these data set underrepresents areas managed by IPLCs, which manage or have tenure rights over at least ~38 million terrestrial km2 worldwide.

Activities under this topic are expected to:

- where shallow coral reefs (including mesophotic extensions), mangroves, and seagrasses coexist and interact: provide an improved understanding of the functional ecology, their species assemblages' and communities, their connectivity through life cycle stages and food webs structures and complexity in the healthy functioning and co-evolutionary processes of these ecosystems and in the biogeochemistry of sediments in order to design and inform effective management and restoration measures;

- look particularly at functional groups in maintaining the health as well as the potential of adaptation to changes of corals assemblage, mangrove and sea grass beds, in particular top predators, reef sharks and species controlling algae's proliferation and possible IAS; Proposals may also look at the role of the microbiome, periphyton or symbionts associated to shallow and mesophotic corals ecosystems healthy functioning;

- combine different scientific disciplines, and where relevant possible active restoration measures (coral cuttings or larval propagation on the reef or artificial structures, fishing management, acoustic assisted fish recruitment in restored areas …), for developing approaches for their effective management and restoration based on functional targets, (departing from usual approach focusing on a single species and coral cover or biomass), so as to support coral reefs and associated ecosystems, mangroves & seagrass beds complexity and connectivity as best asset for their resilience, co-evolutionary processes and adaptation potentials;

- better understanding of the consequences of loss of coral reefs (including mesophotic extensions) and associated ecosystems, both in terms of coverage and diversity, on food web locally and cascading on distant communities and of socioeconomic impacts;

- jointly develop management and restoration guidelines with IPLCs knowledge, state of the art science and integrating lessons learnt and legacy from past and ongoing relevant initiatives from research to aid projects at regional, national, EU (such as the FPI Governance MPA Atlantic & Southeast Asia or the BEST initiative - Biodiversity and Ecosystem Services in Territories of European overseas) or international levels and consolidate a community of practice in socio-ecological management in networks of protected area managers and locally managed marine areas;

- guidelines should also be going beyond local objectives, considering the trophic and life traits connectivity and with special attention to future climate and abiotic conditions;

- contribute to the coordination and capacity building activities of relevant international initiatives and frameworks, in the design and dissemination of actionable knowledge and guidelines to relevant stakeholders. Develop training materials, capacity building and empowerment tools, the access to data and scientific expertise to local actors for ecosystems description and the development of ad hoc localised management measures;

- develop or integrate means and methods (such as sensors, in situ observation devices, remote sensing products developments, citizen science data...) for a cost effective, accessible and lasting monitoring of these functionally associated ecosystems in order to inform on their status, on the effect of measures and to identify necessary management adjustments to changes;

- support natural capital valuation for cost/benefit analysis of measures of conservation and restoration for coral reefs and associated ecosystems and the services and benefits they provide (food, cultural & social values, nature-based solutions for coastal resilience, protection against extreme events, climate adaptation, etc.) and how they affect fishing, shipping, local tourism or other programmes for sustainability, such as offshore wind.

It is expected that the projects activities will contribute to the objectives of the EU Nature Restoration Law and thereby also to climate change mitigation and adaptation objectives.

Actions under this topic should envisage clustering activities with projects funded under this topic as well as with other relevant international or Horizon Europe and Horizon 2020 projects working on links between marine biodiversity, functional ecology, ecosystem services, socio-ecological management, cumulated impact of multiple stressors and on observation, mapping and monitoring for application to the protection and restoration targets. To this end proposals should foresee dedicated tasks and appropriate resources for coordination measures, joint activities and deliverables.

The proposals must apply the multi-actor approach. and ensure adequate involvement of researchers, Local Communities and Indigenous People, end-users, MPA managers or governance levels relevant to inform, support and implement measures, actors contributing to practical and ready to use knowledge, tools and freely accessible dissemination and capacity building channels.

This topic requires the effective contribution of SSH disciplines and involvement of SSH experts.

International cooperation is encouraged, in particular with countries hosting such connected ecosystems.

The proposals should foresee cooperation with and input to potential requests by the EC Knowledge Centre for Biodiversity via its Science Service, currently being set up by the Horizon Europe project BioAgora. Proposals should also show how the planned activities could provide timely information for consideration by the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES) and in particular the IPBES assessment on integrated biodiversity-inclusive spatial planning and ecological connectivity expected to be delivered in late 2027.

Transformative change towards a nature positive economy

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-01-BIODIV-09: Strengthening pathways to alternative socio-economic models for continuous improvement of biodiversity

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 7.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 14.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.

Expected Outcome: In line with the European Green Deal priorities providing for a fair and just green transition, and in particular the EU biodiversity strategy for 2030, the EU Nature Restoration Law and the Kunming-Montréal Global Biodiversity Framework, which contributes to climate adaptation and mitigation, successful proposals will deliver on the following impact of this Destination: *"the ongoing biodiversity crisis and its consequences, the benefits of ecosystem services and the need to protect and restore them are better understood. Policymakers and all relevant sectors of society are aware and well informed thereof, and fully grasp opportunities of biodiversity protection and restoration. Society is on a path of transformative change".*

Project results are expected to contribute to all of the following expected outcomes:

- new knowledge to develop and accelerate pathways towards best available alternative socio-economic models to support biodiversity restoration and protection, including through adaptive legislative, governance, education and financing strategies is developed, with the possible use of Generative AI;

- decision makers (particularly policy decision makers and public and private strategic decision makers) benefit from the synthesis, systematisation and prioritisation of existing knowledge of models that better integrate all values of biodiversity and nature, including through methods for the valuation of benefits of restoration measures (e.g. resilience benefits) and their socio-economic distribution impacts amongst actors and stakeholders,

tools and innovative market and governance instruments (e.g. capacity-building tools and resources and potential incentives, also including possible use of Generative AI-based tools), the application of environmental, social and ethical safeguards, and ensuring that biodiversity is continuously improved (through the non-deterioration principle);

- decision makers will have at their disposal information, tools, assessment strategies and metrics to better integrate the continuous improved protection and restoration of biodiversity, alongside climate resilience, especially improved climate adaptation, into socio-economic analytical frameworks and tools, quantitative and qualitative representation of social and economic variables in the short (up to 1 year), medium and long (5+ years) term, of the implications of applying such frameworks and tools.

Scope: The degradation of natural capital combined with the collapse of ecosystem services driven by human activities, including climate change, emissions to air, water, and soil and land use intensification and change in Europe, and the subsequent cascading effects of biodiversity loss, entail potentially far reaching economic and social implications, including for our standards of living and immaterial aspects of quality of life. Biodiversity loss poses risks including for macroeconomic and financial stability of key institutions, countries and regions. Alternative socio-economic models can help reverse biodiversity loss, for example, by integrating protection, conservation, restoration and sustainable use efforts into economic activities.

The EU biodiversity strategy and the Kunming-Montreal Global Biodiversity Framework set ambitious targets and goals, in addition to the Sustainable Development Goals, to protect, restore and sustainably use biodiversity but educational, technical, social, economic and governance barriers remain to be addressed.

Socio-economic models to achieve the necessary ecological, climate, economic, financial and social transition for biodiversity are plentiful, although such models must be further analysed and developed to make them widely accepted and implementable. They are key to contribute to the transformative change called for by IPBES towards a nature positive society, for example through the deployment of nature-based solutions.

To be able to contribute to transformative change, it is necessary to better understand pathways to alternative socio-economic models for continuous improvement of biodiversity, for example, to better value the economic and social benefits (also beyond monetary valuation) that nature protection and restoration bring, and to evaluate the cost of inaction in light of the accounting of ecosystems and their services. Where possible, the actions must include both quantitative and qualitative data and research. Here, the possible use of Generative AI could be a game changer for the integration of new types of socio-economic data, and societal views as well as for generating outputs helping to interpret models and facilitate the implementation of sub-sequent actions.

In particular, actions are expected to:

- analyse existing alternative socio-economic models in relation to protection and restoration of biodiversity and ecosystems, identifying and prioritising best-practices and evaluating the impacts of such models in Europe. Explore pathways for future development and implementation of these models that could generate the most positive biodiversity outcomes, as well as social equity and community well-being;

- analyse and explore solutions to address potential barriers and obstacles at implementing best available socio-economic models at scale under possible consideration of the potential of Generative AI;

- identify potential gaps (e.g. in research and innovation, skills, educational, legislative, technical) and propose capacity building strategies to tackle them;

- building on previous research, notably incentive mechanisms and natural capital valuation methods (both monetary and non-monetary), deliver progress towards standardised, widely accepted (economic) indicators, reflecting wider socio-economic, biodiversity and natural capital benefits and trade-offs. A reflexive use of valuation methods is encouraged;

- using collaborative and participatory arrangements, develop and pilot strategies and scenario methods, measures (both market and non-market), instruments, and approaches for scaling-up the implementation of alternative socio-economic models to continuously improve biodiversity.

- co-design pathways towards achieving the implementation of alternative socio-economic models, develop innovative technologies and tools to support scenarios that can better capture the specificities of nature and ecosystems;

- involve actively and co-create with end-users including decision makers and stakeholders to fully account for their respective views and needs, also possibly making use of Generative AI based tools;

- issue and disseminate recommendations and actionable knowledge and empowerment tools at European level (and possibly MS level) on enabling conditions for the implementation of biodiversity focused alternative socio-economic models, exploring synergies with all relevant European initiatives, policies and strategies (notably those under the EU Green Deal providing for a fair and just green transition, and through various fiscal, financial and economic policies to help reach sustainability). Outcomes and findings should also be disseminated to relevant non-EU stakeholders;

- investigate how traditional and current economic models reinforce biodiversity loss, climate change and other socio-economic and environmental challenges, as well as the interactions between these challenges, and identify pragmatic actions and strategies to overcome these correlations. Root causes of unbalanced use of ecosystem services and biodiversity loss, as well as power relations and justice should be identified and/or analysed to better address the challenges.

Concretely, the topic should contribute to the evidence base to support the practical implementation of the EU biodiversity strategy and the Kunming-Montreal Global Biodiversity Framework in society and economy.

Proposals should build their analysis on the synergies of multiple Sustainable Development Goals, to deliver direct and indirect biodiversity benefits, and on the role of biodiversity in reaching the set of Sustainable Development Goals. They should also build on the knowledge compiled in the assessment reports produced by the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES), including the IPBES values assessment, the IPBES scenarios and models assessment, and the forthcoming IPBES transformative change assessment. Proposals must keep in mind ethical implications of any outcomes.

When considering strengthening pathways to alternative socio-economic models for the continuous improvement of biodiversity, all ecosystems, especially those facing significant challenges (e.g. agriculture and forestry) should be considered. Different aspects of society (such as cultural and demographic aspects, including rural communities and inequalities) should also be taken into consideration.

Protecting and restoring ecosystems can have significant benefits for biodiversity conservation and can also contribute to broader socio-economic goals such as human health, climate resilience, and particularly climate adaptation.

Proposals should build on and/or establish synergies and interconnections with the relevant work and studies by initiatives/projects. Actions should envisage clustering activities with projects funded under this topic as well as with other relevant Horizon Europe and Horizon 2020 projects[36] as well as the Integrated Natural Capital Accounting project (INCA) working on links between biodiversity and economics. To this end proposals should foresee dedicated tasks and appropriate resources for coordination measures, joint activities, and joint deliverables.

This topic should involve contributions from the social sciences (including economics, sociology and educational science) and humanities (SSH) disciplines, and also involve decision makers to ensure project outcomes or recommendations can be effectively deployed.

The proposals should foresee cooperation with and input to potential requests by the EC Knowledge Centre for Biodiversity via its Science Service, currently being set up by the Horizon Europe project BioAgora.

[36] Building on the outcomes of the relevant H2020 and Horizon Europe projects such as those under SC5-18-2018; SFS-01-2018-2019-2020; BG-08-2018-2019; HORIZON-CL6-2021-BIODIV-01-03; HORIZON-CL6-2021-BIODIV-01-05; HORIZON-CL6-2021-BIODIV-01-10; HORIZON-CL6-2021-BIODIV-01-21; HORIZON-CL6-2022-BIODIV-01-04; HORIZON-CL6-2022-BIODIV-01-08; HORIZON-CL6-2023-BIODIV-01-9; HORIZON-CL6-2023-BIODIV-01-10; HORIZON-CL5-2023-D1-01-06.

HORIZON-CL6-2025-01-BIODIV-10: Understanding the perceptions of and improving communication on the biodiversity crisis and nature restoration benefits to sustain citizen engagement and democratic governance

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [37].

Expected Outcome: In line with the European Green Deal and the EU biodiversity for 2030, project results will contribute to the following expected impact of this destination: *"the ongoing biodiversity crisis and its consequences, the benefits of ecosystem services and the need to protect and restore them are better understood. Policymakers and all relevant sectors of society are aware and well informed thereof, and fully grasp opportunities of biodiversity protection and restoration. Society is on a path of transformative change"*.

Project results are expected to contribute to all of the following expected outcomes:

[37] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- policy-makers at all levels better understand how different groups of stakeholders and citizens perceive the biodiversity crisis and its underlying conflicts, as well as the potential impacts of new policies in this area and in climate adaptation and mitigation. This leads to better-informed decision-making and policy implementation, based on the identification of tensions and opportunities;

- policy-makers at all levels are able to implement innovative forms of co-creation and deliberative processes involving citizens throughout the policymaking cycle in order to improve policy-making and eventually contribute to effective mobilisation for collective action in favour of nature restoration and protection;

- all sectors of society understand the biodiversity crisis and the full extent of its impacts on their lives, including the interplay with climate change and the need for synergies with climate adaptation and mitigation; they understand the critical role of nature restoration in addressing these impacts and are empowered to contribute to it.

Scope: With the EU biodiversity strategy for 2030, the Kunming-Montréal Global Biodiversity Framework, and more recently the adoption of the EU Nature Restoration Law, the EU has taken strong commitments to address the challenges of the biodiversity crisis, in addition to the current efforts towards increasing resilience to climate change embedded in the EU climate policy. Strong scientific evidence supports the need to act, given the importance of biodiversity and ecosystems for society, economy and resilience.

However, as the debates for the negotiation of the EU Nature Restoration Law showed, there are different levels of understanding and different approaches towards challenges to be addressed among the EU society, which is increasingly polarised with militants engaged in nature protection (and more generally environment protection) on the one hand and defenders of the continuation of business as usual on the other hand. This has even led to local conflicts. While the engagement of militants and activists is visible, little is known about how the rest of society is valuing nature and what they think should be done for its protection and restoration.

The need for ambitious and comprehensive transformative change requires biodiversity challenges to be better addressed in democratic governance. This includes the development of strategies, methods, and tools to improve communication, increase people's awareness, and mainstream stakeholder and citizen engagement.

R&I activities are expected to:

- conduct comprehensive research to better understand civil society´s plurality of perceptions and understanding of the biodiversity crisis, its underlying conflicts and links with climate change, identifying key concerns and perspectives. The analysis should identify and quantify the relevance of stakeholder groups and population segments (e.g. based on gender, age, disability, socio-economic status, ethnic and/or cultural origins, etc. and their intersections) sharing similar perceptions and interests. This analysis should build on results of existing research on the relationship between people and nature, including relationship between nature and culture, effects of

experiences in nature on environmental attitudes and behaviour, etc. and notably on the report "Methodological assessment regarding the diverse conceptualization of multiple values of nature and its benefits, including biodiversity and ecosystem functions and services" [38] of the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES);

- It should address various cases such as stakeholders depending on nature and ecosystems for their professional activities, rural communities living in both protected and not protected areas, urban communities having limited contacts with nature, etc.;

- analyse the perception of various stakeholder towards the EU commitment to protect and restore ecosystems. In particular, investigate if the need to protect and restore nature is perceived as a top-down approach or if it is understood as a necessity for the benefit of society. Explore solutions to address such issues;

- drawing on experiences of citizen engagement around the climate transition and biodiversity crisis – such as for instance the Irish Citizen's Assembly on Biodiversity Loss [39] or local co-creation processes on sustainable transport [40] - pilot citizen engagement around ecosystem protection and restoration, with the participation of public authorities who have the competence to implement the results of citizen deliberation, thus creating a pathway to implementation as well as a model for best practice;

- develop approaches for each identified group to enhance the communication and dissemination of knowledge regarding the biodiversity crisis and its implications. These strategies should aim to improve the groups' understanding of the benefits of nature restoration and empower them to make informed decisions;

- develop case studies to assess the effectiveness of the different communication and dissemination approaches on the identified groups and follow up mechanisms. Case studies could be about civil society engagement to participate in biodiversity restoration and conservation efforts or in the co-creation and implementation of nature-based solutions.

A multi-disciplinary approach involving relevant biodiversity expertise should be sought. In addition, this topic requires the effective contribution of SSH disciplines, including gender studies, and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

Proposals should involve public authorities with the legal competence to implement policy in biodiversity and nature restoration in their pilots and in their advisory boards.

[38] https://www.ipbes.net/the-values-assessment.
[39] https://citizensassembly.ie/citizens-assembly-on-biodiversity-loss/.
[40] https://mosaic-mission.eu/pilots/gothenburg.

Proposals should demonstrate how they will collaborate with or build upon the work of R&I projects from any of the following previous calls and projects: The climate imperative and its impact on democratic governance (HORIZON-CL2-2023-DEMOCRACY-01-05), H2020-SC6-GOVERNANCE-2020, the Green Deal Call – cross-cutting theme on empowering citizens, the projects PHOENIX and REAL DEAL under Horizon Europe Missions.

The possible participation of the JRC in the project could involve the following contributions from the side of the Competence Centre on Participatory and Deliberative Democracy:

- supporting networking activities by invitations to JRC events and the Community of Practice of the Competence Centre on Participatory and Deliberative Democracy;
- capacity building on citizen engagement;
- offering the use of the JRC Makerspace in Ispra, Italy.

The proposals should foresee cooperation with and input to potential requests by the EC Knowledge Centre for Biodiversity via its Science Service, currently being set up by the Horizon Europe project BioAgora.

The use of AI might be considered.

Biodiversity friendly practices in agriculture

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-01-BIODIV-11: Supporting the implementation of nature restoration measures for the social, economic and environmental sustainability of farming systems

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 11.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. The following additional eligibility criteria apply: The proposals must

	apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [41].

Expected Outcome: Successful proposals will contribute to the following expected impact of this Destination: "*farmers, foresters, and land managers test and implement biodiversity-friendly practices while safeguarding long-term sustainability and food security*." Besides contributing to the targets of the European Green Deal, including the Farm to Fork Strategy, the common agricultural policy, and the EU biodiversity strategy for 2030, successful proposals will facilitate the implementation of the EU Nature Restoration Law, which contributes to the Union's overarching objectives concerning climate change mitigation and adaptation, for national authorities, by assessing and promulgating the most suitable practices in agriculture to support and sustain agrobiodiversity and a wide range of ecosystem services.

Projects are expected to contribute to all of the following expected outcomes:

- synergies between nature restoration/conservation and food production/security are scientifically demonstrated to farmers, land managers, advisors and policymakers;
- suitable measures and strategies, along with evidence-based recommendations, for the most appropriate mechanisms to support farmers in the implementation phase are identified and developed to support Member States in addressing specific targets of the EU Nature Restoration Law in agricultural landscapes;
- collaborations and exchanges between farmers, researchers, and policymakers from competent authorities are strengthened to enable the development of integrated and effective policies that restore natural capital while also ensuring food security and quality.

Scope: Farmers play a pivotal role in addressing biodiversity loss while maintaining food production, quality and security. To support biodiversity-friendly agriculture, there is a need to develop and improve existing incentives and their interplay. A key element for a wide adoption of such practices is maintaining economic viability in the implementation of nature restoration measures. Moreover, specific targets for agricultural ecosystems in the EU Nature

[41] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Restoration Law make it essential that applied research lays the foundation for Member States to effectively comply and design appropriate strategies. Thus, environmental and economic benefits, as well as potential trade-offs between nature restoration measures and the resilience and quality of food production/security, must be demonstrated over different frames. These should be established with farmers in mind: short-term and immediate impact on production and nature, mid-term (within a few years), and long-term (multiple years).

Proposals should:

- quantify the costs and benefits of measures on short, medium, and long-term farm productivity (referring to the ratio input/output), as well as action versus non-action in terms of restoration impact on provision of ecosystem-services (e.g. climate regulation, water regulation, pollination, nutrient regulation, natural pest control, erosion prevention etc.), and on food production/productivity related to economic returns;

- determine targets for satisfactory levels of restoration for biodiversity in agricultural ecosystems considering Art. 9 of the EU Nature Restoration Law, a path for implementation by farmers, land managers and policymakers, and further develop and solidify existing indicators of biodiversity in agricultural landscapes;

- generate evidence to inform incentive schemes which are supportive rather than prohibitive, such as rewarding mechanisms for actions taken and results obtained taking into account synergies and trade-offs;

- assess and compare the potential of different farming approaches to contribute to the restoration of ecosystems. All types of farming systems (conventional, organic, agroecological, etc.) should be considered, but the ones which are clearly defined should be prioritised.

Proposals should involve a transdisciplinary approach with relevant experts and actors on biodiversity and ecosystems, but also from social sciences and humanities (SSH). Therefore, proposals must apply the multi-actor approach to ensure adequate involvement of researchers, policymakers, farmers, land managers and agricultural advisors among other relevant stakeholders contributing to practical and ready to use knowledge, tools and freely accessible dissemination and capacity building channels.

Successful proposals should focus on the socio-economic impacts of nature restoration measures within the agricultural sector. Therefore, proposals should envisage enough resources to collaborate with other projects under the topic HORIZON-CL6-2025-01-BIODIV-06: Socio-economic impacts of nature restoration, but not exclusively. Moreover, proposals should build on the results of other relevant projects and partnerships under Horizon Europe. Collaboration efforts may involve conducting seminars, joint activities, or shared communication and dissemination initiatives.

The proposals should foresee cooperation with and input to potential requests by the EC Knowledge Centre for Biodiversity via its Science Service of the Joint research Centre, currently being set up by the Horizon Europe project BioAgora.

HORIZON-CL6-2025-01-BIODIV-12: Breeding for resilience: enhancing multi-stress tolerance in crops

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 7.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 14.00 million.
Type of Action	Research and Innovation Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 60 000.

Expected Outcome: In line with the objectives of the European Green Deal, the EU climate policy, EU biodiversity strategy for 2030 and the common agricultural policy, a successful proposal will contribute to the expected impact of testing and implementing biodiversity-friendly practices while safeguarding long-term sustainability and food security. It will support the adaptation of agricultural production to the effects of climate change, increase biodiversity in agroecosystems, and promote low-input practices, thereby enhancing the resilience and adaptability of agricultural systems.

Projects are expected to contribute to all of the following expected outcomes:

- deeper knowledge and characterisation of relevant traits for tolerance and resistance to multiple stresses are more readily available to researchers and breeders;
- the identification of local varieties with high plasticity to cope with multi-stress conditions is enhanced, alongside the development of agro-ecological practices to improve stress tolerance while supporting biodiversity-friendly cropping systems;
- the capacities to evaluate the effects of multiple stresses in crops by researchers and breeders are enhanced;

- the knowledge to develop varieties versatile enough to withstand multiple stress factors, whether occurring simultaneously or sequentially, adapted to the local conditions, is accelerated;

- information and recommendations on variety performance and practices to cope with multi-stress are available to advisors and farmers.

Scope: Crop production faces significant challenges due to climate change and the need to adopt low-input practices, including efficient water use, to reduce the environmental impact while ensuring food security. Issues such as salinity, extreme weather conditions like droughts, waterlogging, high temperatures, and emerging patterns of pests and diseases severely impact crops, resulting in reduced productivity and yield losses. Crop responses to multiple stresses differ from their responses to single stresses. Therefore, attention should be given to enhancing crop tolerance to combinations of multiple abiotic and biotic stresses, thus better reflecting real-life agricultural conditions.

To address these challenges, it is crucial to evaluate local crop varieties, which are often better adapted to specific environmental conditions and stresses. Identifying local varieties with high plasticity enhances crop resilience and agro-biodiversity. Developing agro-ecological practices to improve stress tolerance will further support these efforts, promoting low-input practices and enhancing the overall adaptability of agricultural systems. Additionally, broad-spectrum strategies for improving stress tolerance in crops should be developed. Smart and future-proof breeding programmes need to systematically consider characteristics that enhance crop resilience and adaptation to these demands, aiming for low-input practices while improving the resilience and adaptability of crops to multi-stress conditions.

Proposals should:

- provide insight into the range of mechanisms and traits that underpin crop responses to multiple stresses, whether occurring simultaneously or sequentially, guiding the development of varieties and a crop system better equipped to withstand abiotic and biotic stresses, including reduced agricultural inputs;

- increase understanding of the causality between abiotic and biotic stress factors and propose strategies to improve multi-stress tolerance;

- integrate advanced technologies to assist in evaluating G x E x M (Genotype x Environment x Management) interactions in the context of multi-stress, combining multiple "omics" data sources, high-throughput phenotyping, computational modelling and artificial intelligence, to evaluate at different levels (e.g. greenhouses, experimental fields, production fields). This integration should assist breeders in developing local varieties optimised for resilience, sustainability, and climate change adaptation.

- develop location-specific breeding strategies and agroecological practices, incorporating models and artificial intelligence approaches for prediction of cropping systems output, under multiple stress conditions considering climate change scenarios and climate

analogues. These strategies should promote agrobiodiversity, soil health, and ecosystem services;

- deliver robust methodologies for benchmarking and communicating the performance of crop varieties when they are challenged by multiple stresses.

Activities should be carried out in a range of agronomically relevant pedo-climatic conditions. All farming systems and approaches are in scope.

Proposals should ensure coherence and complementarities with ongoing relevant Horizon Europe projects and capitalise on existing relevant research findings and tools, such as those resulting from the Horizon 2020 projects. Collaboration with European research infrastructures such as AnaEE-ERIC, EMPHASIS or other relevant research infrastructures[42] and with accredited laboratories is encouraged.

Proposals may provide financial support to third parties (FSTP) to, for instance, develop, test and demonstrate tools to evaluate G x E x M interactions in the context of multi-stress. Consortia need to define the selection process of organisations, for which financial support may be granted. A maximum of 15% of the EU funding can be allocated to this purpose.

Proposals should specify how they plan to collaborate with other proposals selected under this and other relevant projects, for example by undertaking joint activities, workshops or common communication and dissemination activities. Proposals should allocate the necessary resources to cover these activities.

[42] The catalogue of European Strategy Forum on Research Infrastructures (ESFRI) research infrastructures portfolio can be browsed from ESFRI website https://ri-portfolio.esfri.eu/.

Destination - Fair, healthy and environment-friendly food systems from primary production to consumption

Food systems are to be understood as covering, 'from farm to fork', all the sectors, actors, stakeholders, organisations and disciplines relevant to and connecting natural resources, primary production from land, fresh water and sea, food processing, food distribution and retailing, food services, food consumption, food safety, nutrition and public health, and the prevention of food waste streams i.e. actors operating in the food supply circuit, working directly 'with' food. It also comprises actors that operate 'around' food at the broader food system level: governance, finance, education, media and culture, research, marketing and advertising, operational services and those representing business and professional interests. The EU Green Deal and more specifically its farm to fork and biodiversity strategies, the zero pollution ambitions and climate action, and their follow-up initiatives set ambitious targets and objectives for food systems. Food system related policies cover an array of diverse areas. While those policy areas are interconnected, they cover specific sectors and actors along the food system that have distinct research and innovation needs to be addressed through this destination.

Sustainable farming systems provide economic, social (including health), environmental and climate benefits, and are the main prerequisite for food and nutrition security. For farmers, who are the backbone of food systems and principal managers of natural resources, the common agricultural policy (CAP) set ambitious targets and objectives concerning the sustainability and safety of feed, food and non-food production. R&I in line with the strategic approach to EU agricultural research and innovation[43] will be key enablers for achieving these ambitious targets and objectives. More specifically, they will contribute to the following policy priorities: nine specific objectives of the CAP; EU action plan for the development of organic production; food safety regulations; sustainable use of pesticides requirements under the plant protection products framework; animal health and welfare legislations; regulation on feed additives; legislative and non-legislative initiatives to enhance cooperation of primary producers and support their position in the food chain; protein strategy; contingency plan for ensuring food supply and food security and communications on food security and fertilisers.

The **partnerships on 'Accelerating farming systems transition: agroecology living labs and research infrastructures'** will continue to unlock the potential of agroecology to make agri-food systems environmentally friendly and regenerative, climate-neutral, inclusive, competitive and resilient.

Through the **partnership on** '**Animal health and welfare**', farmers and other actors will continue to be better equipped to protect animals against infectious diseases, including zoonoses, and to improve animal welfare, while reducing the dependency on antimicrobials, maintaining productivity, improving food safety and quality, and protecting the environment and public health.

[43] https://ec.europa.eu/programmes/horizon2020/en/news/final-paper-strategic-approach-eu-agricultural research-and-innovation

Sustainable fisheries and aquaculture, as mentioned in the 2023 common fisheries policy (CFP) communication, contribute to securing a wide variety of food and provide employment in many coastal communities. On top, the goal of the farm to fork strategy is ensuring a neutral or positive environmental impact of all sectors involved in the food system, calling for an acceleration of the shift to sustainable fish and seafood production. The CFP of the future is a policy that enables and supports: (i) fisheries and aquaculture activities within ecological boundaries; (ii) fishing vessels and aquaculture farms that operate with less impact and fewer resources; (iii) the contribution of seafood to safeguarding food security and reinforcing the resilience and sustainability of food systems in the EU; as well as (iv) fishers and aquaculture farmers who can find fulfilment, recognition and economic well-being in their profession. Additionally, the Control Regulation clearly mentions that traceability is important not only for food safety purposes but also to allow control, ensure the protection of consumers' interests, combat illegal, unreported and unregulated fishing, and contribute to ensuring fair competition. R&I will also support the "strategic guidelines for a more sustainable and competitive EU aquaculture for the period 2021 to 2030", that propose specific actions including access to space and water, human and animal health, environmental performance, climate change, animal welfare, regulatory and administrative framework, and communicating on EU aquaculture. Moreover, R&I in fisheries and aquaculture will contribute to the relevant Food 2030 pathway for action 'food from oceans and freshwater resources'.

Sustainable, healthy and inclusive food systems rely on systemic, cross-sectoral and participatory, multi-actor approaches and on integration between policy areas at all levels of governance. An important driver for transforming food systems should be the integration of sectors, actors and policies[44]. This should occur in order to better understand the multiple interactions between the actors and components of current food systems, the lock-ins and potential leverage points for synergistic changes and the interdependencies of outcomes (linkages between nutritional climate and sustainability outcomes). This can provide solutions that maximise co-benefits with respect to the four priorities of the **Food 2030** R&I initiative:

- nutrition and health, including food safety;
- climate and environmental sustainability;
- circularity and resource efficiency;
- innovation and empowering communities.

This destination will deploy solutions to the 11 Food 2030 pathways for action[45] and will help build innovation ecosystems to bring together relevant public and private sector actors, researchers and society. R&I will provide food-related businesses, including those involved in food processing and packaging, retail, distribution, and food services, with opportunities and

[44] Scientific Advice Mechanism, Towards a sustainable food system - Publications Office of the EU (europa.eu)

[45] New Report: Food 2030 Research and Innovation – Pathways for action 2.0 - European Commission (europa.eu)

incentives to stimulate environmentally friendly, healthy, circular and diversified practices, products and processes that are biodiversity-friendly, climate-neutral and less reliant on fossil fuels. It will also help devise tools and approaches that enable the shift to healthy, sustainable diets and responsible consumption for everyone, boosted also by social innovation, technology, behavioural change and marketing standards, and by inclusively engaging with different consumers, citizens and communities.

The partnership on 'Sustainable food systems for people, planet and climate' will continue to accelerate the transition towards healthy and sustainable diets that are safe and sustainably produced in resilient EU and global food systems.

The EU also aims to promote a ***global transition to sustainable food systems***. Its relationship with Africa is a key priority. Targeted R&I activities, in particular under the EU-Africa Partnership on Food and Nutrition Security and Sustainable Agriculture (FNSSA) and global initiatives involving international research consortia, will help achieve this ambition and contribute to the AU-EU High Level Policy Dialogue (HLPD) on Science, Technology and Innovation.

A comprehensive and integrated response to current and future challenges benefiting people, nature and economic growth in Europe and in Africa will be provided. Advances will be made particularly in the following key areas: agroecology, agriculture knowledge and innovation systems and nutrition.

Topic proposals under this destination should set out credible paths to "**ensuring healthy food and nutrition security by making agriculture, fisheries, aquaculture and food systems sustainable, resilient, inclusive and within planetary boundaries**". More specifically, proposed topics should contribute to one or more of the following impacts:

- Agri-food systems will contribute to EU strategic autonomy by fostering food and nutrition security practices and safeguarding long-term sustainability with multi-disciplinary approaches including One Health.

- Farmers and relevant actors in agricultural primary sector are enabled to manage sustainable, efficient, profitable, circular, low greenhouse gas-emitting farming systems contributing to climate-neutrality and climate-resilience. This will be achieved by new knowledge, innovation and the upscaling and replication of existing and new sustainable farming approaches, including organic farming, while making farming a professionally attractive and remunerative life choice.

- Sustainable and resource efficient farming practices contribute to ecosystems´ health, and their related ecosystem services, while minimising pollution, including in surface and groundwaters and the marine environment, and restoring and protecting biodiversity.

- Sustainable fisheries and aquaculture contribute to fair, healthy, resilient and environment-friendly food systems, promote low-impact and diverse aquatic food production. Healthy aquatic ecosystems with thriving diversity of species and habitats

provide ecosystem and climate services for safe and sustainable fisheries and aquaculture and use of coastal zones for leisure activities, thus triggering growth and jobs' creation in coastal, and rural areas. Technological knowledge on the elimination of negative impacts of fishing and aquaculture is improved, in particular through the creation of innovative, more selective, energy and resource efficient and environmentally sustainable techniques.

- The just transition to overall sustainable, healthy and inclusive food systems [46] is consistently developed. Analysis of existing barriers and enablers to change allows to design effective leverages to steer the sustainability transition. Co-benefits for climate change mitigation and adaptation, environmental sustainability and circularity, sustainable healthy diets, malnutrition and hunger reduction are delivered.

- Food environments are transformed so that citizens and communities are empowered to move towards healthy, affordable and sustainable diets; food businesses can flourish; food processing industries' competitiveness is improved, while ensuring sustainability; food safety and food sovereignty as well as human health is preserved and food waste is reduced.

To unlock the full potential of R&I and maximise impacts of the expected outcomes, multi-actor and socially innovative approaches (involving the engagement of researchers, policy makers, technology providers, primary producers, the food, drink and hospitality industry, retailers, SMEs along the value chain, local authorities and communities, NGO and civil society, while considering gender and other socio demographic groups and their intersections etc.), open innovation ecosystems, such as living labs and regional innovation ecosystems such as Regional Innovation Valleys for Bioeconomy and Food Systems[47], will be promoted with a view to co-creating innovative systemic place-based solutions in support of food system sustainability. Activities will benefit from the implementation of unifying approaches through R&I, including the One Health approach where relevant.

This Work Programme will place a greater emphasis than previous Work Programmes on innovation actions that will demonstrate and exploit knowledge created under previous Work Programmes with the objective to deliver impact on the Farm to Fork Strategy objectives and targets that are to be achieved by 2030. To effectively transition these innovations into the market, SMEs will actively be involved in this process. Topics under this destination should be balanced in terms of high as well as low Technological Readiness Levels (TRLs).

R&I actions under this destination will seek also complementarities and synergies with the EU Missions 'A Soil Deal for Europe' and 'Restore our Ocean and Waters by 2030' as well as with the European partnerships on Agroecology, Animal Health and Welfare, Sustainable Blue Economy, Sustainable Food Systems for people, planet and climate, and Agriculture of Data (forthcoming), the Partnership for Research and Innovation in the Mediterranean areas

46 Sustainable food systems: Concept and framework (fao.org)
47 Concept of Regional Innovation Valleys for Bioeconomy and Food Systems

(PRIMA) and importantly the European innovation Partnership for Agriculture productivity and sustainability (EIP-AGRI).

The EU will seek to increase the efforts on innovation actions for food systems sustainability in widening countries, reaching out to EU outermost regions and to countries in Central and Eastern Europe, also in preparation for the next EU enlargement.

To maximise the impacts of R&I under this Destination, the topics will encourage international cooperation as appropriate. The EU will aim to promote a global transition to sustainable agri-food systems. Hence, targeted R&I activities in 2025, in particular under the EU-Africa Partnership on Food and Nutrition Security and Sustainable Agriculture (FNSSA) as well as other initiatives involving international research consortia and already running international activities, will contribute to this ambition.

Coordination will be ensured with the JRC activities under the EC Knowledge Centre for Bioeconomy, the EU Soil Observatory, the European Platform on Life Cycle Assessment, the EC Knowledge Centre for Earth Observation, the Knowledge Centre for Food Fraud and Quality, and the JRC secretariat for the Scientific, Technical and Economic Committee for Fisheries.

To be more effective in achieving impact, the Work Programme will maximise synergies with relevant Union financial programmes and initiatives including the Knowledge and Innovation Communities (KICs) of the European Institute of Innovation and Technology (EIT), in particular EIT Food, and international cooperation programmes (e.g., DeSIRA).

The multi-actor approach is used in a significant number of topics. Relevant topics under this destination will include Social Sciences and Humanities (SSH) to apply a human-centered approach to R&I, as well as make use of social and innovation at regional and local level to meet needs and by co-create solutions for specific challenges.

Enabling sustainable farming systems

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-02-FARM2FORK-01: Additional activities for the European partnership on accelerating farming systems transition - agroecology living labs and research infrastructures

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 60.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Indicative budget	The total indicative budget for the topic is EUR 60.00 million.
Type of Action	Programme Co-fund Action
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). The proposal must be submitted by the coordinator of the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-1: European partnership on accelerating farming systems transition – agroecology living labs and research infrastructures, European Horizon Europe - Work Programme 2023-2024 Food, Bioeconomy, Natural Resources, Agriculture and Environment. This eligibility condition is without prejudice to the possibility to include additional partners.
Procedure	The procedure is described in General Annex F. The following exceptions apply: If the proposal is successful, the next stage of the procedure will be grant agreement amendment preparations. If the outcome of amendment preparations is an award decision, the coordinator of the consortium funded under HORIZON-CL6-2023- FARM2FORK-01-1: European partnership on accelerating farming systems transition – agroecology living labs and research infrastructures, will be invited to submit an amendment to the grant agreement, on behalf of the beneficiaries.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: This action is intended to be implemented in the form of an amendment of the grant agreement concluded pursuant to topic HORIZON-CL6-2023-FARM2FORK-01-1. For the additional activities covered by this action: • The funding rate is 50% of the eligible costs. This is justified by the pooling of proposers' in-kind contributions and in-house activities and by the nature of activities to be performed. • Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants.

	• Financial support provided by the participants to third parties is one of the primary activities of this action in order to be able to achieve its objectives. The EUR 60 000 threshold provided for in Article 204(a) of the Financial Regulation No 2018/1046 does not apply. • The maximum amount of FSTP to be granted to an individual third party is EUR 10 000 000. The starting date of grants awarded under this topic may be as of the submission date of the application. Applicants must justify the need for a retroactive starting date in their application. Costs incurred from the starting date of the action may be considered eligible (and will be reflected in the entry into force date of the amendment to the grant agreement).
Total indicative budget	The total indicative budget for the topic is EUR 60 million committed in annual instalments over the years 2025-2026 (EUR 30 million for the 2025 budget, EUR 30 million from the 2026 budget). The total indicative budget of the Partnership for the whole duration is EUR 150 million.

Expected Outcome: The successful proposal is expected to further contribute to the expected outcomes specified in topic HORIZON-CL6-2023-FARM2FORK-01-1: European partnership for accelerating farming systems transition - agroecology living labs and research infrastructures, for continuation of the activities in line with already agreed outcomes.

Scope: The objective of this action is to continue to provide support to the European Partnership for accelerating farming systems transition - agroecology living labs and research infrastructures identified in the Horizon Europe Strategic Plan 2021-2024 and first implemented under the topic HORIZON-CL6-2023-FARM2FORK-01-1: European partnership for accelerating farming systems transition - agroecology living labs and research infrastructures, and in particular to fund additional activities (which may also be undertaken by additional partners) in view of its intended scope and duration, and in accordance with Article 24(2) of the Horizon Europe Regulation.

The consortium which applied to and received funding under HORIZON-CL6-2023-FARM2FORK-01-1: European partnership for accelerating farming systems transition - agroecology living labs and research infrastructures, is uniquely placed to submit a proposal to continue the envisioned Partnership. Not only did this consortium submit the proposal leading to the identification of the Partnership in the Horizon Europe strategic planning 2021-2024, it has also been implementing the Partnership through a co-funded call launched in year 2024 and a number of internal activities based on this planning and further to topic HORIZON-CL6-2023-FARM2FORK-01-1. In this context, the current consortium has particular expertise in relation to the objectives of the Partnership, the activities to be implemented in particular financial support to third parties and internal activities clearly

required/envisioned pursuant to initial proposal/partnership. In practice, another consortium could not continue the activities of the Partnership underway without significant disruption to the ongoing activities, if at all.

The proposal submitted should align with the Partnership's co-created strategic research and innovation agenda. This includes a balanced proportion of financial support to third parties and of internal activities, including calls for research projects, setting-up a EU-wide network of agroecology living labs and research infrastructures, development of indicators, metrics, and tools to monitor the agroecology transition and sustainability performance, and supporting evidence-based policy-making. Activities should give rise to ready-to-use solutions and seek uptake of results.

The Partnership should pool the necessary financial resources from the participating national (or regional) research programmes with a view to organising and implementing joint calls for transnational proposals resulting in grants to third parties, for which it should factor ample time to run the co-funded projects.

The Partnership should seek to include additional partners, including from Member States and Associated countries not yet in the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-1. Through its activities, and by remaining open to accepting new partners, the Partnership should devote efforts to promote agroecological farming also in countries where there is still limited understanding and uptake of the concept. Likewise, in setting up and building a EU-wide network of agroecology living labs, the Partnership should ensure a balanced representation of pedo-climatic conditions and bio-geographical regions, with a view to cover a wide range of farming systems that are representative of the European agricultural sector. The partnership should cover issues pertaining to the agroecology transition in all agricultural production systems and approaches, including but not limited to conventional and organic farming. This will contribute to ensuring a widespread adoption of agroecological practices across sectors across Europe.

Specific activities to strengthen the complementarities of the European partnership for accelerating farming systems transition - agroecology living labs and research infrastructures, with the related Horizon Europe Missions and Partnerships, identified in the proposal submitted by the coordinator of the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-1, as well as activities to enhance the Partnership's collaborations at international level, should also be described.

While the award of a grant to continue the Partnership in accordance with this call should be based on a proposal submitted by the coordinator of the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-1 and the additional activities (which may include additional partners) to be funded by the grant should be subject to an evaluation, this evaluation should take into account the existing context and the scope of the initial evaluation as relevant, and related obligations enshrined in the grant agreement.

Taking into account that the present action is a continuation of topic HORIZON-CL6-2023-FARM2FORK-01-1 and foresees an amendment to an existing grant agreement, the proposal

should also present in a separate document the additional activities and additional partners, if any, to be covered by the award in terms of how they would be reflected in the grant agreement.

HORIZON-CL6-2025-02-FARM2FORK-02: Additional activities for the European partnership on animal health and welfare

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 80.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 80.00 million.
Type of Action	Programme Co-fund Action
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). The proposal must be submitted by the coordinator of the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-2: European partnership on animal health and welfare, European Horizon Europe - Work Programme 2023-2024 Food, Bioeconomy, Natural Resources, Agriculture and Environment. This eligibility condition is without prejudice to the possibility to include additional partners.
Procedure	The procedure is described in General Annex F. The following exceptions apply: If the proposal is successful, the next stage of the procedure will be grant agreement amendment preparations. If the outcome of amendment preparations is an award decision, the coordinator of the consortium funded under HORIZON-CL6-2023- FARM2FORK-01-2: European partnership on animal health and welfare will be invited to submit an amendment to the grant agreement, on behalf of the beneficiaries.
Legal and financial set-up of the Grant	The rules are described in General Annex G. The following exceptions apply: This action is intended to be implemented in the form of an amendment

Agreements	of the grant agreement concluded pursuant to topic HORIZON-CL6-2023-FARM2FORK-01-2. For the additional activities covered by this action: • The funding rate is 50% of the eligible costs. This is justified by the pooling of proposers' in-kind contributions and in-house activities and by the nature of activities to be performed. • Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants. • Financial support provided by the participants to third parties is one of the primary activities of this action in order to be able to achieve its objectives. The EUR 60 000 threshold provided for in Article 204(a) of the Financial Regulation No 2018/1046 does not apply. • The maximum amount of FSTP to be granted to an individual third party is EUR 10 000 000. The starting date of grants awarded under this topic may be as of the submission date of the application. Applicants must justify the need for a retroactive starting date in their application. Costs incurred from the starting date of the action may be considered eligible (and will be reflected in the entry into force date of the amendment to the grant agreement).
Total indicative budget	The total indicative budget for the topic is EUR 80 million committed in annual instalments over the years 2025-2026 (EUR 40 million for the 2025 budget and EUR 40 million from the 2026 budget). The total indicative budget of the Partnership for the whole duration is EUR 180 million.

Expected Outcome: The successful proposal is expected to further contribute to the expected outcomes specified in topic HORIZON-CL6-2023-FARM2FORK-01-2: European Partnership on Animal Health and Welfare, for continuation of the activities in line with already agreed outcomes.

Scope: The objective of this action is to continue to provide support to the European Partnership on Animal Health and Welfare identified in the Horizon Europe Strategic Plan 2021-2024 and first implemented under the topic HORIZON-CL6-2023-FARM2FORK-01-2: European Partnership on Animal Health and Welfare, and in particular to fund additional activities (which may also be undertaken by additional partners) in view of its intended scope and duration, and in accordance with Article 24(2) of the Horizon Europe Regulation.

The consortium which applied to and received funding under HORIZON-CL6-2023-FARM2FORK-01-2: European Partnership on Animal Health and Welfare is uniquely placed to submit a proposal to continue the envisioned partnership. Not only did this consortium submit the proposal leading to the identification of the partnership in the Horizon Europe strategic planning 2021-2024, it has also been implementing the partnership through a co-funded call launched in year 2024 and a number of internal activities, including research projects, based on this planning and further to topic HORIZON-CL6-2023-FARM2FORK-01-2. In this context, the current consortium has unique expertise in relation to the objectives of the Partnership, the activities to be implemented in particular through financial support to third parties and internal activities clearly required/envisioned pursuant to the initial proposal/partnership. In practice, another consortium could not continue the activities of the Partnership underway without significant disruption to the ongoing activities, if at all.

The proposal submitted to this call should align with the partnership's co-created strategic research and innovation agenda. This includes a balanced proportion of financial support to third parties and of internal activities, including research projects, integrative activities, networking, training or other activities. Relevant activities should give rise to ready-to-use solutions, seek uptake of results and provide science-based policy advisory activities. The proposal should focus on duly justified continuation of on-going activities or additional priority activities.

The partnership should seek to include additional partners, in particular from Member States and Associated countries not yet in the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-2.

The partnership should pool the necessary financial resources from the participating national (or regional) research programmes with a view to organising and implementing joint calls for transnational proposals resulting in grants to third parties, for which it should factor ample time to run the co-funded projects.

Specific activities to strengthen the complementarities of the European partnership on animal health and welfare with the related Horizon Europe Partnerships, identified in the proposal submitted by the coordinator of the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-1, as well as activities to enhance the Partnership's collaborations at international level, should also be described.

While the award of a grant to continue the Partnership in accordance with this call should be based on a proposal submitted by the coordinator of the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-2 and the additional activities (which may include additional partners) to be funded by the grant should be subject to an evaluation, this evaluation should take into account the existing context and the scope of the initial evaluation as relevant, and related obligations enshrined in the grant agreement.

Taking into account that the present action is a continuation of topic HORIZON-CL6-2023-FARM2FORK-01-2 and foresees an amendment to an existing grant agreement, the proposal should also present in a separate document the additional activities and additional partners, if

any, to be covered by the award in terms of how they would be reflected in the grant agreement.

HORIZON-CL6-2025-02-FARM2FORK-03: Overcoming the barriers for scaling up circular water management in agriculture

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Technology Readiness Level	Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B.

Expected Outcome: Expected Outcome: In line with the European Green Deal's Farm to Fork strategy and the EU water related policies, notably the Water Framework Directive and the Water Reuse Regulation, successful proposals will contribute to increasing the resilience of agriculture to water scarcity with improved circular water management systems and enable farmers and relevant actors to manage farming systems in a long-term sustainable and resource-efficient way, as described for this destination.

Project results are expected to contribute to all of the following expected outcomes:

- sustainable pathways to scale up the use of alternative water sources in agriculture in different contexts in the EU and Associated Countries (where relevant) are developed;

- enhanced knowledge is available to farmers on the long-term impact of alternative water sources for irrigation and other uses with special attention to emerging contaminants;
- resilience of farmers/farming systems to water scarcity is increased, especially in areas where droughts are becoming more frequent, longer and more intense;
- awareness and confidence of farmers and citizens in alternative water use in agriculture is increased.

Scope: According to EEA, water stress affects 30% of the EU population with an economic damage of up to EUR 9 billion annually. Droughts are increasing in frequency, magnitude and impact, and the affected area is expanding. Agriculture is the main water user in some Member States and Associated Countries.

Alternative water sources and storage systems (e.g., rainwater harvesting, storm water collection, water reuse and reclamation, brackish and sea water desalination, aquifer recharge, etc.) limit abstractions from surface waters and groundwater reducing the environmental footprint of the agriculture and food systems, and provide reliable water source for irrigation and other uses, strengthening its resilience. Only for treated water, it has been estimated that 6 times more could be reused than current levels.

Some barriers still hinder a broader use of alternative water sources. For example, a lack of knowledge from farmers on the benefits and characteristics of other water supplies, financial models considering production and transport costs, seasonal variations of water quality with nutrient imbalances and salinity, heavy metals or emerging contaminants issues, or long-term impacts.

Proposals should:

- test different strategies and technologies for irrigation or other uses, using alternative water sources (considering the most feasible sources according to the specific conditions of availability, climate, soil, socio-economic, environment) in the long-term in real-life conditions across the EU and Associated Countries (where relevant) at a larger scale beyond small experimental sites, covering the whole water cycle in agriculture;
- identify and test different business models regarding financial viability and long-term economic sustainability (including cost-benefit analysis or agro-economic modelling) for the adoption of alternative water sources, considering different scenarios, climatic conditions and socio-economic contexts;
- evaluate the long-term impact of the use of alternative water sources on soil health, including the soil microbiome, crop productivity and quality, food safety (especially for fresh-consumed products) and on freshwater resources and ecosystems (surface and groundwater), considering seasonal variations of water source quality (including persistent chemicals and microplastics' releases) and quantity, and situations of extreme water scarcity;

- test and document cost-efficient methodologies and techniques to monitor most relevant quality and quantity parameters in real-time and/or to remove contaminants (e.g. using bio-filters) for a safe and efficient management of water of different sources, with particular attention to emerging contaminants particularly in reclaimed water;

- identify societal, behavioural and regulatory challenges still hampering upscaling of alternative water sources' uptake for irrigation and development of suitable solutions to increase the uptake in practice;

- develop, test and make recommendations for improved and targeted incentives and policies at regional, national and European level to reduce financial, social and economic barriers for adoption and acceptance of circular water management by farmers and consumers;

- enhance the dissemination of existing knowledge, by connecting actors, policies, projects and instruments to speed up adoption of solutions by practitioners, and by providing training for farmers and demonstration activities. Complementarities with European and national AKIS knowledge channels or similar should be explored.

HORIZON-CL6-2025-02-FARM2FORK-04: Enhancing plant protein production to bolster the resilience of agricultural systems and EU self-sufficiency in plant protein feed

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 11.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for

	Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [48].

Expected Outcome: In line with Commission's food security communication[49], as well as with the Council, the European Parliament, and the European Economic and Social Committee calls for EU action to promote plant protein in the EU[50], the successful proposals will support the reduction of the EU's import dependency on key agricultural products and inputs by boosting EU plant proteins production and use for feed while increasing the sustainability and resilience of Europe's agricultural systems.

Successful proposals should support the objectives of the EU climate action, the EU biodiversity strategy for 2030, the communication on boosting biotechnology and biomanufacturing in the EU and the farm to fork strategy, notably concerning the transition towards a sustainable food system with a neutral or positive climate and environmental impact and the reversal of biodiversity loss.

Successful proposals will deliver on the impacts of the destination 'Agri-Food systems will contribute to EU strategic autonomy by fostering food and nutrition security practices and safeguarding long-term sustainability with multi-disciplinary approaches including One Health' as well as 'The just transition to overall sustainable, healthy and inclusive food systems'.

Projects results are expected to contribute to all of the following expected outcomes:

- sustainable production and use of protein crops for feed in the EU is improved through knowledge and innovation, increasing the share of locally produced protein crops in the market and decreasing the reliance on imported feed materials;
- competitiveness of EU plant protein sources for feed use is enhanced, with agricultural systems being more resilient to climate change, biodiversity depletion, external shocks and supply chain disruptions;
- knowledge and innovation on preservation and transformation processes of protein crops for feed is increased, allowing for improved locally sourced feed products, adapted to market demands and allowing for the growth of the EU domestic feed sector;

48 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

49 COM(2022) 133 final (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022DC0133)

50 https://data.consilium.europa.eu/doc/document/ST-7141-2022-INIT/en/pdf; https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/towards-sustainable-plant-protein-and-plant-oil-strategy-eu; https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2023/2015.

- the understanding of farmers and advisors about protein crops cultivation and share in animals' diets is increased, through the availability of demonstration sites, advisory tools and extension services tailored to the different geographical regions in the EU.

Scope: Currently, protein crops[51] cultivation, such as grain legumes and fodder legumes, only accounts for a small proportion (around 3%) of the EU agricultural area. While there is little shortage in the protein supply for food purposes in the EU, there is a much important shortage in the feed sector[52], resulting in high levels of imports (especially of soya) originating from countries with different environmental and social standards. It is, therefore, strategical for the EU to expand the domestic production of protein crops, including in mixed crops[53] as a feed source.

Increasing the EU' plant protein autonomy would allow for the reduction of imports of protein feed (chiefly soybeans) from third countries, and thereby, would contribute to the decrease of deforestation and depletion of global natural ecosystems. Additionally, promoting locally produced protein crops would contribute to the sustainable development of rural areas in line with the EU long-term vision on rural areas, for example through the development of new regional value chains that are self-sustaining. Developments in this area should at the same time be coherent with the new Regulation on deforestation-free products[54] by reducing the impact of plant protein feed needs on deforestation and forest degradation globally.

The benefits of increasing the share of protein crops in EU farming systems, and particularly nitrogen-fixing leguminous crops, are also reflected in the climate and the environment, through the improvement of soil quality (restoring and enhancing biodiversity, increasing soil fertility, cycling nutrients, improving soil structure, increasing water retention capacity, etc.) which in turn improve the sustainability and resilience of farms.

Proposals should engage on the following activities:

- improve the knowledge about production and utilization of various locally available protein crops used for animal feed across different regions;
- identify barriers and enablers for the uptake and upscale of sustainable protein crops intended for feed use in the EU, from production to processing and trade levels;
- develop or optimize cost-effective processes for the manufacturing of locally produced plant protein feed (e.g. equipment needed for the various stages of production of high protein meals; behaviour of different crop proteins in the technological processes of feed production, methods for improving feed nutritional profiles, etc);

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51 In this topic, protein crops refer to crops with a high content of proteins which can be used for animal feed.

52 EC (2023), EU agricultural outlook for markets, 2023-2035

53 Cereals and grain legumes or grass and fodder legumes are examples of mixed crops used for feed (maize and beans, clover and ryegrass, barley and peas, etc).

54 Regulation - 2023/1115 - http://data.europa.eu/eli/reg/2023/1115/oj

- identify, test and showcase biodiversity-friendly management practices in farming systems (crop production and livestock raising) containing protein crops intended for feed use. Prioritise the use of climate and pest resilient protein crops adapted to the different pedoclimatic conditions present in the EU. Consider their potential for enhancing biodiversity derived from the diversification of cropping systems, the reduction of synthetic fertilisers and chemical use, the expansion of habitat provision, the support of pollinators, the carbon sequestration linked to improved soil health, etc;

- assess the social, economic and environmental impacts and trade-offs of the increased share of different protein crops in different farming systems. Include up- and downstream actors of the feed value chain in the economic assessment;

- generate comprehensive capacity building material, trainings and information tools for farmers and advisors, including a visualization of the most cost-effective production of protein crops and combinations of crops in the market, adapted to their pedoclimatic zones and based on local agronomic features as well as on local market data such as demand for feed.

All farming approaches, including organic farming are in the scope of this topic.

Proposals must implement the 'multi-actor approach' and ensure adequate involvement of the main actors relevant for domestic plant protein feed value chain in Europe, such as farmers, other land managers, advisors, feed manufacturers, industry (including small and medium enterprises), policy-makers, etc. Proposals should ensure an effective knowledge, co-creation and exchange between researchers and field actors as well as with the whole feed value chain actors concerning the benefits, challenges and opportunities of producing and integrating local protein crops for feed in the EU. To this end, proposals should develop diverse practice-oriented dissemination materials presenting R&I solutions (e.g. audiovisuals, brochures, fact sheets, etc) and should share all generated data and knowledge through existing digital tools or platforms.

Proposals should include a dedicated task, appropriate resources, and a plan on how it will collaborate with the other project funded under this topic and with relevant activities to be carried out under topic HORIZON-CL6-2024-FARM2FORK-02-5-two-stage[55]. Proposals should ensure coherence and complementarity with ongoing relevant Horizon Europe projects and with relevant activities of the Horizon Europe Partnership 'Agroecology'. Likewise, proposals should capitalise on existing relevant research findings and tools, such as those resulting from Horizon 2020 projects.

The possible participation of the JRC in the project will consist of support analysis, applying its tools such as the integrated agro-economic modelling platform (iMAP), for scenario assessments.

[55] HORIZON-CL6-2024-FARM2FORK-02-5-two-stage: 'Animal nutritional requirements and nutritional value of feed under different production management conditions' under wp-9-food-bioeconomy-natural-resources-agriculture-and-environment_horizon-2023-2024_en.pdf (europa.eu)

HORIZON-CL6-2025-02-FARM2FORK-05: Emerging and future risks to plant health

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties (FSTP). In this case, the proposals must define the process of selecting entities for which financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 60000. A maximum of 10% of the EU funding can be allocated to this purpose.

Expected Outcome: Successful proposals should support the farm to fork strategy and the EU biodiversity strategy for 2030, notably the targets to reduce by 50% the overall use and risk of chemical pesticides and reduce the use by 50% of the more hazardous pesticides. Activities will support the plant health law, regulation 2016/2031[56] on protective measures against pests of plants.

Successful proposals will deliver on the impacts of the destination 'Agri-Food systems will contribute to EU strategic autonomy by fostering food and nutrition security practices and safeguarding long-term sustainability with multi-disciplinary approaches including One Health' as well as 'The just transition to overall sustainable, healthy and inclusive food systems'.

Project results are expected to contribute to all of the following expected outcomes:

[56] https://eur-lex.europa.eu/eli/reg/2016/2031/oj

- the understanding of drivers of plant pest emergence, including the influence of climate change, ecosystem degradation and globalisation, is increased;
- cost-effective responses to new and/or emerging plant pests are developed;
- economic, social, and environmentally sound solutions for effective pest management in farming and/or forestry in line with the principles of integrated pest management are developed.
- plant health policies in the EU and Associated Countries are supported.

Scope: Plant health is crucial for agriculture, forestry, natural ecosystems, ecosystem services and biodiversity on a global scale. The current EU plant health legislative framework plays a vital role in protecting the EU from the introduction of new plant pests and as well as tackling existing plant pests more effectively.

To support these efforts, proposals should target one or more new or emerging[57] plant pests[58] (regulated, non-regulated, introduced or native) that are causing or likely to cause, significant socio-economic and/or environmental impact to agriculture and/or forestry in the EU and/or Associated Countries, considering potential exacerbation under climate change. Within the scope of this topic are pests exhibiting an altered and higher probability of entry, establishment and spread in a new area that might be the result of changes in their biology or changes in agriculture or forestry pest management practice or rapid spread in new areas. When selecting target pest(s), it is essential to consider the potential threat in terms of entry, establishment and spread, the exacerbation under climate change and biodiversity crisis as well as the impact on agricultural production, forestry, trade and the wider environment, including soil and water.

Proposals should:

- enhance understanding of pest(s) biology, introduction pathways, interaction with crop-soil ecosystems (if relevant), and mechanisms of spread, especially considering the challenges posed by climate change, biodiversity crisis, land use, and globalisation, thereby reducing uncertainties and lack of data in pest risk assessments;
- develop rapid and cost-effective tools and methods for preventing pest(s) entry, establishment and spread, and establishment; this includes early detection, surveillance, treatment[59], and (bio)control measures (including innovative agro-ecological practices), in line with sustainable and integrated pest management;

57 EFSA Scientific Colloquium XVI

58 A pest is defined here as any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products (EU legislation, Regulation 2016/2031)

59 See IPPC Secretariat. 2024. Glossary of phytosanitary terms. International Standard for Phytosanitary Measures No. 5. Rome. FAO on behalf of the Secretariat of the International Plant Protection Convention.

- assess the social, economic, and environmental impacts of plant pest(s) establishment and spread on farmers and/or forest owners and develop strategies to mitigate these impacts effectively;

- contribute to the identification and development of resistant and/or tolerant varieties and the development of crop diversity and agro-ecological process as a lever for pests regulation to enhance the resilience and long-term sustainability of the sector;

- foster a holistic understanding and management of plant pests following a One Health approach, recognising the interconnection between people, animals, plants and their shared environment.

International cooperation with countries affected or threatened by the same pest(s) is strongly encouraged.

Proposals must implement the 'multi-actor approach' including a range of actors to ensure that knowledge and needs from various sectors such as research, plant health services, farming/forestry sectors, advisory services, and industry are brought together.

Results should benefit diverse farming systems/approaches, including conventional and organic farming.

Proposals may provide financial support to third parties (FSTP) to, for instance, develop, test and demonstrate tools and methods for early detection, surveillance, treatment, and (bio)control measures. Consortia need to define the selection process of organisations, for which financial support may be granted. A maximum of 10% of the EU funding can be allocated to this purpose.

Proposals are encouraged to consider, where relevant, the services offered by European research infrastructures such as AnaEE-ERIC, EMPHASIS or other relevant research infrastructures [60].

Proposals should ensure coherence and complementarities with ongoing relevant Horizon Europe projects and capitalise on existing relevant research findings and tools, such as those resulting from the Horizon 2020 projects. Proposals should specify how they plan to collaborate with other proposals selected under this and other relevant projects, for example by undertaking joint activities, workshops or common communication and dissemination activities. Proposals should allocate the necessary resources to cover these activities.

HORIZON-CL6-2025-02-FARM2FORK-06: Developing innovative phytosanitary measures for plant health - focus on systems approach for pest risk management

Call: Cluster 6 Call 02

[60] The catalogue of European Strategy Forum on Research Infrastructures (ESFRI) research infrastructures portfolio can be browsed from ESFRI website https://ri-portfolio.esfri.eu/

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties (FSTP). In this case, the proposals must define the process of selecting entities for which financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 60000. A maximum of 10% of the EU funding can be allocated to this purpose.

Expected Outcome: A successful proposal should support the farm to fork strategy to transition to fair, healthy and environmentally friendly food systems from primary production to consumption, notably aiding the global transition. Activities will support Regulation (EU) 2016/2031[61] on protective measures against pests of plants.

Project results are expected to contribute to all of the following expected outcomes:

- the capacity of farmers and actors in the agri-value chain to manage pest risks more effectively, in an environmentally friendly and fair manner, across various agricultural and trade contexts through collaborative efforts is enhanced;
- effective measures throughout the entire agri-value chain are developed and tested for using system approaches;
- the combined effect of all measures and their interactions are assessed;

[61] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32016R2031

- plant health policies in the EU and Associated Countries are supported, while promoting international cooperation.

Scope: Effective plant health measures play a vital role in protecting sustainable agriculture and enhancing global food security, safeguarding the environment, forests, and biodiversity, and facilitating economic and trade development. A systems approach to plant health is a comprehensive pest risk management strategy that integrates different measures, at least two of which act independently, with cumulative effect and of high efficacy[62]. This approach is designed to effectively meet phytosanitary import requirements. Systems approaches allow for the consideration of measures and procedures that contribute to effective pest risk management throughout the entire value chain, from pre-planting and pre-harvest stages to harvest, post-harvest handling, transport, and distribution. By integrating these measures, systems approaches enhance the ability to manage pest risks comprehensively and sustainably, ensuring the health of plants and the safety of agricultural products across borders. Proposals should target one or more plant pests[63].

Proposals should:

- develop innovative and environmental-friendly measures for a highly efficacious pest risk management to be implemented across the value chain to meet the phytosanitary requirements in a variety of economic contexts;
- evaluate risk reduction, cost-effectiveness, scalability, and sustainability, of each proposed innovative measures;
- design and validate protocols targeting systems approaches, considering the whole value chain;
- assess the combined effect of all measures and their interactions across the value chain, including cost-effectiveness, scalability, and overall sustainability (economic, social and environmental aspects);
- support capacity building and training of the actors within the value chain, enabling the large-scale adoption of innovative, cost-effective measures.

International cooperation is strongly encouraged. Results should benefit diverse farming systems/approaches, such as conventional and organic farming.

Proposals must implement the ‘multi-actor approach’ including a range of actors to ensure that knowledge and needs from various sectors such as research, plant health services, farming/forestry sectors, advisory services, and other relevant actors of the value chain are brought together. This topic should involve the effective contribution of social sciences and humanities (SSH) disciplines.

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62 International Standard for Phytosanitary Measures No. 14. The use of integrated measures in a systems approach for pest risk management [https://www.ippc.int/en/publications/607

63 A pest is defined here as any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products (EU legislation, Regulation 2016/2031)

Proposals may provide financial support to third parties (FSTP) to, for instance, develop, test and demonstrate innovative measures. Consortia need to define the selection process of organisations, for which financial support may be granted. A maximum of 10% of the EU funding can be allocated to this purpose.

The possible participation of the JRC in the project will consist of supporting the analysis to understand the acceptance and adoption of innovative measures along the value chain.

Proposals should specify how they plan to collaborate with other proposals selected under this and other relevant projects, for example by undertaking joint activities, workshops or common communication and dissemination activities. Proposals should allocate the necessary resources to cover these activities.

HORIZON-CL6-2025-02-FARM2FORK-07: Improving grassland management in European livestock farming systems

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 8.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 16.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).

Expected Outcome: Proposals should contribute to the objectives of the common agricultural policy (CAP), as well as to various EU Green Deal strategies, notably the farm to fork and the EU biodiversity strategies, the climate pact and the EU action plan for the development of organic production.

Project results are expected to contribute to all the following expected outcomes:

- the availability of data, models and methodologies to measure, monitor, assess and valorise the multifunctionality of grassland farming systems is improved;
- the availability for, accessibility and use by farmers of sustainable grassland management knowledge, innovative solutions/practices and strategies is increased;
- networking, participatory approaches and knowledge mobilisation among relevant stakeholders for sustainable grassland management is enhanced;
- scientific support and recommendations for the development, implementation and evaluation of EU policies and strategies relevant for grasslands, including the Common agricultural policy (CAP) and the EU Biodiversity Strategy 2030, is provided.

Scope: Well managed grasslands are key for the sustainability of European agriculture and for the delivery of multiple ecosystem services, including water purification, erosion and flood prevention, carbon sequestration and food production, as well as for preserving biodiversity. Grasslands can also play an important role as protein crop supply for feed. They also constitute key elements of European socio-cultural landscapes. However, grasslands maintenance and functions in the EU are under threat for several reasons, which may include sub-optimal input management, intensification, farm concentration, and abandonment.

Ensuring the sustainable management of grasslands and preventing their disappearance is essential for a sustainable European farming sector. This calls for increasing scientific evidence on grasslands across Europe, including on their performance, benefits and trade-offs (e.g., climate, environment, biodiversity, socio-economic). There is also a need to further develop and demonstrate approaches that allow assessing the climate change adaptation and mitigation potential of grazing livestock systems, along with the other important benefits they can deliver. Moreover, farmers need new knowledge, innovative solutions and dedicated support and advice to sustainably maintain grasslands, and to restore degraded grassland habitats.

In this context, the role of and coherence among policies is crucial, and Research and Innovation have a key role to play in demonstrating that properly managed grasslands systems are viable options for farmers.

This topic focuses on grazing livestock systems and involves both permanent grasslands, as per the definition set in the Regulation (EU) 2021/2115[64], as well as temporary grasslands, understood as arable land with grasses, or grass mixtures with other species, that has been included in the crop rotation before reaching the five years that are necessary to be considered as permanent grassland.

Proposals should address all the following activities and should cover various farming systems/approaches, one of which should be organic farming:

64 http://data.europa.eu/eli/reg/2021/2115/oj

- develop and operationalise methodologies to measure, monitor, benchmark and assess the performance of grassland farming systems in different contexts in terms of the delivery of ecosystem services (e.g., productivity, carbon sequestration, nutrient cycling, resilience to climate change, soil health, forage value), biodiversity restoration, reducing emissions of greenhouse gas (GHG) and air pollutants, and social aspects such as profitability for farmers and for other stakeholders. This should include analysis of synergies and trade-offs between the above elements in the short- to medium- and long-terms. The benchmark of the performance of grassland farming systems should also include comparison between different levels of grass-based ruminants' farming systems in similar pedo-climatic contexts;

- develop new knowledge, innovative solutions/practices, and manageable strategies for creating, maintaining and restoring grasslands systems that are cost-effective, sustainable, environmentally sound, and resilient to a changing climate. These strategies should include assessment of innovations in the social, environmental and economic domains, such as possible market uptakes by value chain actors and consumers through, for instance, standards and labelling related to grassland management;

- develop farm- and landscape level decision tools and strategies to support farmers in managing grasslands sustainably, so as to improve forage productivity and quality and livestock production, as well as the delivery of other ecosystem services, based on documented cases or in-situ demonstrators;

- organise activities to mobilise the sharing of relevant knowledge (scientific, but also practical and traditional), and networking among relevant actors. Proposals should develop diverse practice-oriented dissemination materials, e.g. audiovisual materials, brochures, etc., presenting solutions, and make them publicly available;

- assess relevant public policies at various levels and provide policy recommendations with a view to improving their impact and coherence in supporting sustainable grassland systems;

- perform economic cost-benefit analysis of applying/using the R&I solutions developed during the project and explore the potential of financing or incentive tools specific to the sustainable management, and where relevant, restoration of grasslands farming systems.

Proposals must implement the 'multi-actor approach' and ensure adequate involvement of the main stakeholders involved in grassland management in Europe, e.g., farmers (including farmers managing protected grassland habitats), shepherds and related organisations notably in the ruminants' sectors, advisors, policy-makers, landscape and territorial planners, industry including small and medium enterprises, consumers, environmental Non-Governmental Organisations, etc.

Proposals should capitalise on relevant research findings and tools, included those developed under previous research projects.

Proposals should cover a variety of grasslands systems in different pedo-climatic conditions and biogeographical regions across the EU and consider among those, marginal areas at risk of abandonment or with other constraints, and areas in intensification trends towards arable crop farming.

Activities should allow for the comparison in terms of performance and sustainability between grasslands systems presenting mixtures of plant species, including legumes, compared to mono-species grasslands.

Proposals should include a dedicated task, appropriate resources and a plan on how they will collaborate with other projects funded under this topic. Proposals should, where relevant, consider the use of Earth Observation data. Proposals should ensure complementarities with other relevant activities carried out under other initiatives in Horizon Europe, including those funded under the topic HORIZON-CL6-2025-CLIMATE-04: 'Non-CO_2 greenhouse gas emissions from agriculture: innovative solutions for mitigation and for monitoring, reporting and verification', the topic HORIZON-CL6-2025-02-FARM2FORK-04: 'Enhancing the EU plant protein production to bolster the resilience of agricultural systems and EU self-sufficiency in plant protein feed', as well as with relevant activities of the Horizon Europe Partnership 'Agroecology' and other relevant future Horizon Europe Partnerships and R&I projects.

In order to enhance the societal and long-term impact of the activities beyond the life cycle of the project, proposals should apply social innovation and citizen engagement and include a strong involvement of citizens/civil society, together with academia/research, industry/SMEs/start-ups and government/public authorities.

This topic should involve the effective contribution of social sciences and humanities (SSH) disciplines. In order to achieve the objectives of this topic, international cooperation is encouraged.

HORIZON-CL6-2025-02-FARM2FORK-08: Fostering animal breeding and genetics for climate change adaptation and mitigation, improved robustness and resilience

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility	The conditions are described in General Annex B. The following

conditions	exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Technology Readiness Level	Specified activities are expected to achieve TRL 7 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: Successful proposals will contribute to more sustainable and environmentally responsible land-based agricultural production systems, which are among the objectives of the farm to fork strategy, the methane strategy, the action plan for the development of organic production and the common agricultural policy (CAP) among others. The proposals will help in tackling the issues linked to emissions from livestock and in supporting EU Member States and Associated Countries and in implementing cost effective mitigation efforts and better quantifying their expected impacts.

Project results are expected to contribute to all the following expected outcomes:

- the understanding of interactions between management, genotype and environment is enhanced, with the aim of improving the sustainable management of livestock population and achieving efficient animal/plant recoupling from farm to landscape scale;
- genomic and phenotypic characteristics that could be applied in breeding schemes for the selection and use of animals having desirable traits for lower greenhouse gas emissions and other climate-change related challenges for the livestock sector are widely known and considered by breeders;
- contributions of breeding and genetics in livestock to sustainability and production efficiency, including trade-offs among other breeding objectives, are known, improvement paths are undertaken and obstacles to their adoption are overcome;
- scientific support and recommendations/policy advice for the development, implementation and evaluation of EU policies and strategies, including the CAP and other policies relevant for sustainable livestock production, is provided.

Scope: Breeding and genetic improvements are among the tools with potential to help livestock to increase production efficiency and sustainability, to adapt to the changing environment (e.g., harsh climates, health hazard, changes in feed quality or availability) as well as to help to mitigate emissions. By selecting specific traits that are important for adaptation and mitigation purposes, and integrating them in breeding programmes, livestock farmers and breeders can contribute to more sustainable livestock farming systems. Balancing multiple breeding objectives, including reduction of methane emissions and other environmental considerations, is complex and requires careful consideration of trade-offs, including with animal well-being, and of gender aspects. Proposals should enhance animal breeding programmes by identifying, validating and upscaling easily accessible and low-cost protocols, which can be used at farm level in diverse environments and production systems,

for measuring and selecting existing and new traits with low environmental and climate footprint.

The aim is to optimise the selection of animals with genotypes that are best suited to thrive in different production systems and environmental conditions, with different diets and rumen microbiota by incorporating adaptation and mitigation objectives into breeding and sustainable management decisions.

Proposals should address all the following activities and should cover various terrestrial livestock farming systems/approaches, one of which should be organic farming:

- identify new traits, including proxy indicators from -omic or meta-omic data, that consider genotype-environment interactions on the whole animal lifespans to renew breeding goal, i.e. desirable traits for lower greenhouse gas emissions and other climate-change related challenges, validate and integrate them into indexes used to benchmark farm performance;

- develop tools/systems/methods to measure genotype-environment interaction and traits of interest, predicting the breeding value at animal and population levels in diverse farming conditions, while maintaining genetic diversity;

- demonstrate in an operational environment breeding programs and management practices for improving robustness, lifetime efficiency and resilience, including the contribution of livestock to climate change mitigation efforts and the adaptation to climate change conditions (TRL 7) while demonstrating gender-responsive strategies where relevant;

- analyse the cost effectiveness of the identified breeding programmes and assess private and/or public incentives or rewarding schemes for the use of certain mitigation-related traits currently used in some European regions or countries, with their advantages, limits, and ways to overcome them.

Proposals must implement the 'multi-actor approach' and ensure adequate involvement of the main stakeholders involved in livestock breeding in Europe, including farmers, breeders, advisors, private sector/industry, and policy-makers.

The proposal should include a dedicated task, appropriate resources, and a plan on how it will collaborate with other projects funded under this topic, and ensure coherence and complementarities with ongoing relevant Horizon 2020 and Horizon Europe research projects, including relevant infrastructures. Proposals should interact with relevant structures or organizations at European level and beyond such as FAO, Livestock Environmental Assessment and Performance Partnership (LEAP, FAO)[65], Global Research Alliance on Agricultural Greenhouse Gases[66].

To better address the requirements of the topic, international cooperation is encouraged.

65 https://www.fao.org/partnerships/leap/en/
66 https://globalresearchalliance.org/research/livestock/networks/

HORIZON-CL6-2025-02-FARM2FORK-09: Innovating for on-farm post-harvest operations, storage and transformation of crops into food and non-food products

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Technology Readiness Level	Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties (FSTP). In this case, the proposals must define the process of selecting entities for which financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 60000. A maximum 30% of EU funding can be allocated to this purpose.

Expected Outcome: Successful proposals will support the European Green Deal, farm to fork strategy, the common agricultural policy, the EU bioeconomy strategy, and the successful implementation of the unfair trading practices directive as well as the EU's action plan for the development of organic production. Proposals will deliver on the impact of the destination "Farmers and relevant actors in agricultural primary sector are enabled to manage sustainable, efficient, profitable, circular, low greenhouse gas-emitting farming systems".

Project results are expected to contribute to all of the following expected outcomes:

- innovations are developed with and for farmers in post-harvest, processing and storage of crops;

- farmers are provided with innovative solutions, including digital and technological solutions;

- farmers improve their capabilities to shorten supply chains, contribute to climate mitigation and add value to their food and non-food[67] products at farm level and thereby achieve higher economic benefits;

Scope: Farmers do not always profit from the added value for their agricultural produce, which may avoid greater financial returns. At the same time, farmers need to respond to changing consumer demands. The provision of innovative solutions to shorten supply chains, adding value and extending the shelf life of harvested crops at the farm, can help to leverage their position in the value chain and improve financial viabilities. It may also foster SME-led business models and increase the opportunities for farmers engaging in food and non-food agricultural output processing and storage.

Proposals should:

- develop and assess innovative on-farm solutions to produce, transform and store food and/or, non-food crops preventing and reducing food losses and adding value to the agricultural products. This includes the development of post-harvest and digital technologies;

- focus on flexible and optimised innovative small-scale post-harvest, processing and storage innovations tailored to the needs of farmers ensuring links between food and/or non-food processing and storage adapted to the seasonal character of raw material production;

- assess the impact of proposed innovations on overall sustainability (environmental, social, economic). This should include, as appropriate the testing of the proposed innovations and the assessment of their impacts on storage and transformation efficiency, transformed product quality and traceability;

- consider requirements from relevant EU regulatory frameworks including where relevant needs for pre-market authorisation;

- explore appropriate new business and cooperation models adapted to proposed solutions, taking into account organisation and distribution concepts, and marketability of the resulting products.

Activities will fall under the concept of the 'multi-actor approach' and allow for adequate involvement of relevant actors including farmers, SMEs, scientistsand developers. Proposals should benefit various farming systems/approaches, one of which should be organic farming.

Proposals should perform economic cost-benefit analysis of applying/using the R&I solutions developed within the project.

[67] non-food refers to products from crops that are not edible for human consumption or feed, such as chemicals, textiles, materials, or other biomass uses

Proposals should describe a clear exploitation pathway including new business models through the different necessary steps (research, manufacturing, regulatory approvals and licensing, IP management etc.) in order to accelerate exploitation of the results.

The involvement of SMEs is essential for this topic. Proposals may involve financial support to third parties, particularly for SMEs providing and/or developing testing, or validating the proposed innovative technologies/solutions. Consortia need to define the selection process of organisations, for which financial support may be granted. Maximum 30% of EU funding can be allocated to this purpose.

Proposals should develop publicly available diverse practice-oriented dissemination materials, e.g., audiovisual materials, brochures, etc. presenting R&I solutions.

HORIZON-CL6-2025-02-FARM2FORK-10: Exploring the potential of controlled environment agriculture (CEA)

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Research and Innovation Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants. In this case, the proposals must define the process of selecting entities for which financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. The maximum amount to be granted to each third party is EUR 60000. A maximum 30% of EU funding can be allocated to this purpose.

Expected Outcome: Exploring the potential of controlled environment agriculture (CEA) as a transformative contribution to global food security and sustainability challenges, the successful proposal will support the European Green Deal and the farm to fork strategy. It will also deliver on the expected impact of the destination: 'Fair, healthy and environmentally friendly food systems from primary production to consumption', enabling farmers and related actors in the agricultural primary sector to manage sustainable, efficient, profitable, circular and low emissions farming systems contributing to climate-neutrality and climate-resilience. This will be achieved by new knowledge, innovation and the upscaling and replication of

existing and new sustainable farming approaches while making farming a professionally attractive and remunerative life choice.

Project results are expected to contribute to all of the following expected outcomes:

- a holistic understanding of CEA is provided, comprising technological needs, trade-offs, sustainability, societal and environmental impacts and policy implications;
- the knowledge of CEA sustainability is advanced, in its economic, environmental and societal dimensions (profitability, energy efficiency, environmental sustainability and circularity, social dimension, etc.);
- novel and diverse crop varieties with potential in CEA are identified, and next generation of CEA systems are explored;
- adoption, expansion and uptake of CEA best practices is enhanced.

Scope: Controlled Environment Agriculture (CEA) refers to any form of agriculture that controls and optimises environmental conditions such as temperature, humidity, carbon dioxide, light or nutrient concentration. Examples of CEA include greenhouses, vertical farms, grow rooms, building-integrated agriculture, hydroponics, aquaponics, aeroponics and other practices where technological advancements enable precise regulation of growing conditions farming.

Proposals should:

- assess the state-of-the-art technologies and innovations in CEA, evaluating their effectiveness, assessing resource efficiency (including energy and water demands) and identifying opportunities for optimisation through technological innovations and management practices;
- analyse the economic feasibility of implementing CEA systems at different scales and evaluating their cost-effectiveness compared to conventional agriculture. Analysing the economic viability of sustainable CEA practices.
- investigating the environmental sustainability and environmental footprint[68] of CEA systems. Exploring the social implications of CEA;
- assess the current state of crop varieties grown in CEA systems and identifying gaps and opportunities for the development of novel crop varieties and challenges hindering the adoption of novel crop varieties in CEA;
- provide insights into the future trajectory of CEA, examining emerging trends, investigating technological innovations (like IoT, artificial intelligence, robotics, biotechnologies, etc.), and their implications for sustainable food production in the

[68] Commission Recommendation (EU) 2021/2279 on the use of the Environmental Footprint methods to measure and communicate the life cycle environmental performance of products and organisations

coming decades. Identifying key challenges hindering CEA adoption and providing strategies for enhancing the expansion of best practices in CEA.

Enabling sustainable fisheries and aquaculture

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-02-FARM2FORK-11: Diversifying aquaculture production with emphasis on low-trophic species

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 6-8 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: In the frame of the EU's farm to fork strategy, the EU strategic guidelines for sustainable aquaculture for the period 2021 to 2030, the EU algae initiative and the food 2030 R&I policy framework, successful proposals will contribute to the impact of this Destination on sustainable fisheries and aquaculture.

Project results are expected to contribute to all of the following expected outcomes:

- more diverse and competitive aquaculture in the EU and in Associated Countries[69];
- resilient and climate-adaptive aquaculture sector that contributes to climate change mitigation;
- low-environmental impact aquaculture;
- more literate and informed aquatic food consumers;
- growth and jobs in coastal and rural areas;
- new and improved aquaculture-related technologies.

[69] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf

Scope: Aquaculture is booming globally but in the EU is almost stagnating. The "Strategic Guidelines for a more sustainable and competitive EU aquaculture for the period 2021 to 2030" (COM(2021)236 final) identify diversification as a key area for further work in conjunction with supporting the farming of existing species. The guidelines underline that the EU aquaculture sector has great scope for further diversification, not only in the farming of promising new species (notably diversification into non-fed and low-trophic species with a lower environmental footprint), but also in production methods such as integrated multi-trophic aquaculture (IMTA) and organic aquaculture. The guidelines therefore promote the development of IMTA, organic aquaculture and the diversification to lower-trophic species alongside supporting the existing production of finfish and shellfish species.

Algae and shellfish have a huge market potential but are not always well-known to the consumers. EU imports more than 60% of the seafood consumed, with algae imports alone worth 0,5 billion EUR.

The scope of this topic includes all possible edible aquatic organisms with preference for low-trophic species which, in the frame of this topic, are photosynthetic or herbivorous or un-fed species. There is also preference for fish farming that relies on feed ingredients low in fish meal and oil and/or produced in the region where the farm is situated or in neighbouring to the farm regions, as well as feed ingredients derived from circular practices, such as, the use of wastes or by-products.

Aspects of sustainability, including circularity and zero waste, in particular in relation to the achievement of good environmental status, should also be addressed following a life cycle approach and potentially applying Environmental Footprint methods as described in Recommendation (EU) 2021/2279. Issues of fair pricing as well as regional particularities should also be addressed. Research could include aspects of feeding, breeding but also health and welfare issues as well as economic issues and issues of consumers' acceptance. Regulatory aspects and legal barriers regarding the approval of novel feed ingredients or the licencing of new aquaculture farms should also be considered. Collaboration with European research infrastructures such as EMBRC ERIC and with accredited laboratories is encouraged.

Proposals should take into account the work done under the DIVERSIFY[70] FP7 project, the Horizon 2020 AquaVitae, ASTRAL IMPRESS, NOVAFOODIES, INNOAQUA, ULTFARMS, OLAMUR, AlgaePro BANOS, LOCALITY, VeriFish and Mr.Goodfish3.0 projects and relevant national and regional projects.

This topic should involve the effective contribution of Social Sciences and Humanities (SSH) disciplines. International cooperation is encouraged for win-win outcomes and mutual benefits.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

[70] https://cordis.europa.eu/project/id/603121

HORIZON-CL6-2025-02-FARM2FORK-12: Towards modern, integrated, and effective fisheries monitoring, control and surveillance (MCS) systems in Europe

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.
Technology Readiness Level	Activities are expected to achieve TRL 6-8 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: In line with the common fisheries policy and in particular the Data Collection Framework (DCF)[71], the revised Control Regulation[72], the farm to fork strategy goals, the food 2030 R&I policy framework, the EU biodiversity strategy and in particular its target 15, the EU Marine Strategy Framework Directive and the EU action plan on protecting and restoring marine ecosystems for sustainable and resilient fisheries, successful proposals will contribute to the impact of this Destination on sustainable fisheries and aquaculture.

Project results are expected to contribute to all of the following expected outcomes:

- improve data collection (including position and catch data) for small scale fisheries (SSF), recreational fisheries and long-distance fisheries, i.e. EU fleets operating beyond EU waters, while reducing the costs of data collection and analysis;
- improve efficiency, save costs, and advance fisheries monitoring, surveillance, control and enforcement technologies to fight illegal, unreported and unregulated (IUU) practices in SSF, recreational fisheries and long-distance fisheries;
- provide effective and, where possible, real-time tools for monitoring fishing operations, including for the implementation of technical measures, for mitigation requirements for target and bycatch species, as well as for sensitive species and for comparing and

[71] Regulation EU 2017/1004, http://data.europa.eu/eli/reg/2017/1004/oj.
[72] Regulation EU 2023/2842, https://eur-lex.europa.eu/eli/reg/2023/2842/oj.

matching logbook and/or landing declaration data with data collected and reported by observers on board;

- increase and enhance data collection resolution while exploring the potential of interconnecting vessel tracking and e-logbooks to improve interoperability and expand their usage in SSF and long-distance fisheries;

- contribute to the standardisation on how data are collected and the harmonisation of implementing procedures and quality control for collecting and processing data with a view to using these data in fisheries management and improving the reliability of scientific advice;

- improve the mechanisms for sharing fisheries dependent data among fisheries management authorities and institutions formally charged with provision of scientific advice;

- improve the digital readiness of SSF, recreational fisheries and long distance fisheries by identifying solutions such as business models that encourage and enhance fishers' adoption of digital technology as well as data sharing, through distribution of incentives and risks among stakeholders (i.e. fishers, policy makers, scientists).

The funded projects should contribute to the achievements of the United Nations 2030 Agenda and its Sustainable Development Goals and global biodiversity framework COP-15 goals and targets for marine ecosystems and fishing areas.

Scope: The implementation of the revised Fisheries Control Regulation (EU Regulation 2023/2842) and relevant implementing and delegating acts require tools to identify patterns, anomalies, trends and detect inconsistencies in electronic reporting (validation and cross-checking of data) at high spatial and temporal resolution, supporting more effective fisheries monitoring, control and surveillance. Moreover, it requires secure, tamper-resistant, accurate and innovative vessel tracking systems tailored for the specificities of different types of fisheries such as, small-scale fisheries. These systems need to ensure reliable monitoring, be cost-effective and easily deployed and maintained. In addition, monitoring and controlling the catch reporting by millions of recreational fishers in European waters and estimating the ecological impact of recreational fisheries requires new and effective strategies and tools.

The new European fisheries control system also calls for innovative remote sensing technology and satellite imaging systems equipped with automatic detection abilities. These tools are needed to monitor and control fishing operations, complement and cross check data from fisheries observers, and verify compliance with regulations. Such tools will also help to identify and combat IUU fishing activities (e.g., detecting illegal transhipments, illegal discards, unauthorised gear use, and unlicensed fishing) in EU waters and beyond and improve the European maritime situational awareness.

Funded projects should firstly focus on extending data collection to encompass SSF, recreational fisheries and long-distance fisheries, enhancing MCS capabilities. Secondly,

funded projects should develop, and test user-friendly technologies tailored for these sectors, while striving to reduce associated costs. Thirdly, funded projects should devise innovative MCS methods to improve efficiency alongside advancements in remote monitoring and surveillance technologies to support the effective implementation of relevant fisheries regulations and combat IUU fishing practices in these sectors. Fourthly, funded projects should emphasise the development of technology for automatic real-time data collection, including the vessel monitoring systems (VMS) and other vessel tracking technologies, and explore opportunities for interconnecting vessel tracking position, electronic monitoring systems and e-logbooks to enhance data resolution and expand their usage in SSF and long-distance fisheries. Finally, funded projects should focus on applications of artificial intelligence technologies for mining information and data deriving from various monitoring technologies in a timely and cost-efficient manner, for the purpose of supporting effective data collection and cross verification, as well as, monitoring of compliance with applicable fisheries rules and regulations.

Funded projects should also include solutions to directly gather data from fishing activities, including data required under the DCF and for the meaningful application of the Ecosystem Approach to Fisheries management, such as data on biological, environmental, economic, social aspects of the fisheries and basic information on the fishers, vessels, and gear.

Successful proposals are expected to contribute to increase the number of datasets in fisheries dependent data, also including non-commercial species and discards, while ensuring data collection standardisation as well as harmonisation of process and methods on how data are handled to support small scale fisheries data collection.

The successful proposals must take an integrated approach, encompassing the development of new fisheries monitoring and data collection and analysis for SSF, recreational fisheries and long-distance fisheries. Funded projects should showcase the expected outcomes through four case studies covering the following:

1. EU SSF in European Seas (Mediterranean Sea or Baltic Sea or Black Sea or North East Atlantic);
2. EU SSF in EU Outermost Regions;
3. recreational fisheries in EU waters and
4. EU long-distance fisheries in the Indian Ocean or the Pacific Ocean.

Additional case studies can be included.

Proposals should include, in all stages (from conceptual development until the implementation of the outcomes) the involvement of fishers, other relevant actors, including citizens, and end users.

Proposals are encouraged to cooperate with actors such as the European Commission's Joint Research Centre (JRC). The possible participation of the JRC in the project would consist in providing and/or analysing fisheries data.

Proposals should consider the 2024 recommendations provided by the Strategic Working group on Fisheries and Aquaculture Research (SCAR-Fish1). Funded projects are expected to allocate specific tasks and resources to link with relevant Horizon Europe projects, such as Fish-X, EveryFish, and OptiFish, and projects on the Digital Twin Ocean such as SURIMI and SEADITO as well as projects focusing on observing and mapping biodiversity coastal and marine ecosystems, such as OBAMA-NEXT, MARCO-BOLO and DiverSea and other biodiversity projects such as B-USEFUL.

Particular efforts should be made to ensure that the data produced in the context of this topic is FAIR (Findable, Accessible, Interoperable and Re-usable). When possible, data should become available through the European Marina Observation and Data network, ensuring their further availability for the development of fisheries management related applications through the EU Digital Twin Ocean core infrastructure (EDITO). Proposals should leverage the data and services available through European Research Infrastructures federated under the European Open Science Cloud, as well as data from relevant Data Spaces.

Transforming food systems for health, sustainability and inclusion

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-02-FARM2FORK-13: Nutrition and Mental Health

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant	The rules are described in General Annex G. The following exceptions apply:

Agreements	Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [73].

Expected Outcome: The project will address one of the challenges highlighted in the updated Food 2030 report, particularly under the Food 2030 pathway 7 "Nutrition and Sustainable Healthy Diets"[74], on how inadequate intakes, malnutrition and unhealthy diet affects people's mental health and well-being.

It will contribute to the Commission communication on a comprehensive approach to mental health published in 2023[75] and to the Healthier together - the EU non-communicable diseases (NCD) initiative presented in June 2022[76].

Project results are expected to contribute to all the following expected outcomes:

- improved healthy diet and effects of unhealthy diets on mental health in children (above 36 months), adults (above 18 years old) and older population (above 65 years old) under different social and economic context for a European comprehensive overview;
- improved science-based communication to policymakers and various professionals and facilitate the understanding of the interlink between a healthy diet, nutrition and mental health wellbeing, in particular in the children and adult population;
- identified mechanisms which help to understand the effects of nutrition (i.e. food groups, beverages, macro- and micronutrients) on mental health disorders and also to prevent or exacerbate the development of any mental health disease.
- new and improved evidence to support decision makers, public authorities, health and nutritional public and private institutes, and stakeholders in the assessment of those effects;
- identified sound data for developing standardised/validated metrics and analysis approaches (including the use of Omics approaches) on the function/role of the gut microbiome and its interplay with host metabolism;

[73] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[74] https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/new-report-food-2030-research-and-innovation-pathways-action-20-2023-12-04_en

[75] COM (2023) 298 final.

[76] https://health.ec.europa.eu/non-communicable-diseases/healthier-together-eu-non-communicable-diseases-initiative_en

- enhanced knowledge to improve nutrition in individuals with mental health disorders to ensure better health and longevity conditions;

- identified the use of indicators to measure the beneficial or detrimental effect of food groups, beverages and, macro and micronutrients present in a healthy diet and/or dietary behaviour on preventing mental health disorders.

Scope: Mental health has become a major issue of public health, and economic and social concern across Europe. A healthy dietary pattern can affect mental health and well-being through anti-inflammatory, antioxidant, neurogenesis, microbiome- and immune-modifying mechanisms, as well as through epigenetic modifications[77]. A good nutritional status is important for maintaining normal body function and preventing or mitigating the dysfunction induced by internal or external factors. Environmental psychology has demonstrated the positive impact of healthy nutrition on self-perception, self-efficacy, and successful relationships, as well as on several psychological constructs.

Moreover, alteration of the microbiome could also have an impact on neurodegenerative disorders as microbiome has been linked to several mental illness such as depression, bipolar disorders, schizophrenia[78].

The proposals should address all the following activities:

- establish the specific food groups, beverages, macro and micronutrients needed in a daily diet (from food sources or to be integrated to the daily diet) to prevent the development of mental health disorders in Europe and explore the need to characterise and supplement a healthy diet with specific macro and micronutrients in children, adults, and older population affected by specific diseases related to mental health disorders through interviews and literature review;

- establish through a mapping of the most recent research and innovation projects, the 3-axis ‘diet-gut microbiome-host-health’ interplay to elucidate some molecular mechanisms and the casual relationship between changes in the gut microbiome and some mental health disorders (including the establishment of possible relevant biomarkers as necessary);

- provide recommendations and developing specific communication materials for prevention campaigns, in line with international and national health and dietary advice and related policies, for nutritional professionals, to communicate the link between healthy diets and mental health, as well as the need to supplement a healthy diet with macro- and micronutrients and/or adapt dietary patterns to prevent mental health disorders to patients;

[77] Maurizio Muscaritoli, The Impact of nutrients on mental health and well-being: insights from the literature. Frontiers in Nutrition, mini review 8 March 2021.
[78] Hayley A Young, Nutrition research reviews (2023) 36, 471-483.

- provide recommendations on how established deficiencies or excess intake of macro and micronutrients could be addressed, in line with international and national health_and dietary advice and related policies, including means to increase or decrease nutrients in the diet, in particular in vulnerable groups.

The information is collected for different ranges of the population in Member States and Associated Countries. Experts, which make the link of the role of food groups, beverages, macro- and micronutrients to mental health should work closely in identifying the main food groups, beverages, macro- and micronutrients needed or to be limited in a daily diet and which are linked to specific mental health disorders and the possible development of mental disease.

The proposals should include a dedicated task in the workplan and appropriate resources to collaborate with the projects funded under this topic.

The proposals must implement the 'multi-actor approach' and ensure adequate involvement of all relevant stakeholders and value chain actors including industry, nutritionists, healthcare professionals, scientists, patients, consumers associations. The active participation and engagement of different stakeholders should span the entire project development and implementation to ensure performance and sustainability and maximise the final impact.

The proposals should involve the effective contribution of SSH disciplines.

Where relevant, the proposals could consider complementarities and avoid duplication with other related funded projects. In particular ERA4Health partnership and the Nutribrain call topic [79] and JPND's ERA-NET Cofund (JPcofund2) and the project 'EURO-FINGERS multimodal precision prevention toolbox for dementia in Alzheimer's disease', which included nutritional guidance [80] (Call - Better Health and care, economic growth and sustainable health systems (H2020-SC1-BHC-2018-2020) [81].

HORIZON-CL6-2025-02-FARM2FORK-14: Raising citizen awareness on alternative proteins derived from biotechnology

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 2.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 2.00 million.

79 https://era4health.eu/nutribrain-2024/
80 https://www.neurodegenerationresearch.eu/wp-content/uploads/2020/06/PROJECT-EU-Fingers.pdf
81 https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-health_en.pdf

Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [82].

Expected Outcome: In line with Food 2030 R&I initiative [83] and the Commission communication on Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU [84], the successful proposal will empower citizens to make informed decisions regarding alternative proteins sources derived from biotechnology[85] and increase the awareness of the impact of such dietary shift (sustainability and health-related impacts). The successful proposal will also strengthen education, communication awareness and access to information on alternative proteins and contribute to the public acceptance challenge on the use of biotechnologies in the food sector.

Project results are expected to contribute to all the following expected outcomes:

- improved scientific knowledge at national, regional and local levels on the use of different biotechnology applications for food and food ingredients;
- improved analysis of the social and economic aspects as well as of the environmental impact of the use of alternative protein sources derived from biotechnology;

82 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

83 New Report: Food 2030 Research and Innovation – Pathways for action 2.0 - European Commission (europa.eu). See Pathway 4"Alternative Proteins for Dietary Shift".

84 COM (2024) 137 final.

85 According to the OECD, biotechnology is defined as the application of science and technology to living organisms, as well as parts, products and models of them, to alter living or non-living materials for the production of knowledge, goods and services. Advanced biotechnologies are geared towards various application areas, being the main ones medical and pharmaceutical ("red" biotechnology), agri-food ("green" biotechnology), and industrial and environmental ("white" biotechnology), with the marine biotechnology (so-called "blue") gaining increased attention.

- citizens' awareness on the characteristics of alternative proteins, derived from biotechnology (such as precision fermentation) is enhanced through different tools of communication at national, regional and local level;

- identified policy inconsistencies (e.g. public funds directed towards unsustainable/unhealthy foods despite Green Deal objectives) or regulatory issues limiting market uptake with a negative impact to the public.

Scope: The proposal is expected to help counteracting all sources of misinformation on alternative proteins produced through biotechnology. It will support as appropriate educational interventions and information dissemination on the transition towards diets based on alternative protein derived from biotechnology. The proposal will also address which (new) food products offer market opportunities and where the potential of their production is and which accompanying measures (hygienic conditions, dissemination campaign, etc.) are necessary so that consumers buy alternative proteins produced through biotechnology.

The proposal must address all the following activities:

- establish a collaborative science-based information programme to enable citizens understanding of the dietary shift towards alternative proteins produced from biotechnology by launching a survey on citizens consumption patterns and dietary choices;

- improve the transfer of scientific knowledge at different level (different actors and different territorial/geographical areas) with a collection of data on the perception, behaviours and understanding of citizens of alternative protein sources derived from different biotechnological applications;

- produce technical and dissemination material based on scientific evidence and knowledge, encompassing the technical and hygienic processing conditions for the production of alternative proteins through biotechnology and eventual consumption;

- provide recommendations for updating and improving educational curricula in schools and in other educational institutes as appropriate and in accordance with any applicable national, regional and local obligations.

The proposal should take into account the preliminary results developed by the project B-Trust [86] funded under Horizon Europe.

The proposal should involve the effective contribution of SSH disciplines

The proposal must implement the 'multi-actor approach' and ensure adequate involvement of all relevant stakeholders including citizens and value chain actors. The active participation

[86] Co-creation methodology for biotechnology trust-building measures for improved innovation uptake in the bio-based innovation system | B-TRUST | Project | Fact sheet | HORIZON | CORDIS | European Commission (europa.eu)

and engagement of different stakeholders should span the entire project development and implementation to ensure performance and sustainability and maximise the final impact.

To maximise the impacts of R&I, the collaboration with international partners in particular with US is encouraged.

The duration of the project should be maximum 36 months.

HORIZON-CL6-2025-02-FARM2FORK-15: Nutrients produced by microbes utilising CO2 from the air, with the support of biotechnology

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Technology Readiness Level	Activities are expected to start from TRL 5 in order to achieve TRL 7 by the end of the project – see General Annex B.

Expected Outcome: In line with Food 2030 R&I initiative [87] and the Commission communication on: Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU[88], the successful proposal will address the application of the precision fermentation through microbes genetically engineered and will contribute to safer food systems. It will also promote innovation through creation of new start-up companies in the field of production of food production via biotechnology. The outcomes will foster EU strategic autonomy and leadership in delivering innovative nutrient production processes through business models for food applications in industrial plants and SMEs.

Project results are expected to contribute to all the following expected outcomes:

87 New Report: Food 2030 Research and Innovation – Pathways for action 2.0 - European Commission (europa.eu).See pathway 6 ‘ The Microbiome World”.

88 COM (2024)137 final.

- Improved analysis of the costs and resource-efficiency of bioreactors and upstream and downstream processing is carried out;
- Better understanding of the environmental impact resulting from the reduction of CO_2 in the air;
- Food producing companies support the set-up of new or existing living laboratory facilities and pre-commercialisation infrastructure or shared infrastructure solutions to test the implementation of biotechnologies;
- Innovative technologies are identified for the use of microbes that have been genetically engineered transforming CO2 into nutrients for food purposes and scaled up by SMEs and innovative start-up.
- Existing pilot plants in Europe are improved to scale up the production by identifying and removing barriers that slow down the scaling up of the production of nutrients for food and food ingredients.

Scope: Innovations using microbes have the potential to deliver benefits in several fields, including agriculture, food and feed, industries, environment, marine and biodiversity. Utilising microbes genetically engineered for precision fermentation is an innovative approach that could significantly contribute to safer food systems[89]. This biotechnology leverages the capabilities of microbes to produce proteins including enzymes, fats, and other valuable compounds with high efficiency and specificity. Therefore, it represents a key area for investments and research, promising to revolutionise the food system and thus, contributing to a healthier planet.

The proposals should address all the following activities:

- provide the costs and investments for the use of the biotechnology for scaling up production of proteins through the use of microbes genetically engineered that capture CO_2 from the air or from on-site plant emissions;
- establish an open space database or platform for companies to create their own business models for precision fermentation using microbes genetically engineered and performing a pre-commercialisation testing to go along with business model strategies development also in situ application;
- establish business models for industry and for in-situ application also when other gases than CO2 are considered;
- evaluate the sustainability, efficiency, and resilience of European companies that use precision fermentation with genetically engineered microbes and its contribution to reducing the presence of CO2 in the air;

[89] https://link.springer.com/article/10.1007/s11367-022-02087-0

- provide a scale-up feasibility analysis for the developed biotechnologies which should take into consideration in the design process the feasibility for up-scaling, already from the early stages.

The proposals must implement the 'multi-actor approach' and ensure adequate involvement of existing private companies in Europe, participation of SMEs and start-ups.

The proposals should include a dedicated task in the workplan and appropriate resources to collaborate with the projects funded under this topic.

The proposals must establish links with Regional Innovation Valleys for the bioeconomy and food systems (RIV4BFS) [90] to encourage the deployment of technologies related to biotechnological processes across the EU regions.

To maximise the impacts of R&I, collaboration with international partners in particular with US is encouraged.

HORIZON-CL6-2025-02-FARM2FORK-16: Making food systems more resilient to food safety risks through the deployment of technological solutions

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Technology Readiness Level	Activities are expected to achieve TRL 8 by the end of the project – see General Annex B.

Expected Outcome: The successful proposal will be in line with the European Green Deal priorities and the farm to fork strategy for a fair healthy and environmentally friendly food

[90] RIV4BFS is a thematic RIV's use case. RIV4BFS can involve actors from across the quadruple helix, meaning promoting a model of cooperation between industry, academia, civil society, and public authorities, with a strong emphasis on citizens and their needs. The New European Innovation Agenda - European Commission (europa.eu).

system. This topic is also in line with the overall challenges highlighted in the updated Food 2030 pathways for action 2.0 report, particularly on the food safety systems of the future pathway, this report was published in December 2023 by the European Commission[91].

The topic will address all of the following outcomes:

- a new level of ambition and creativity is implemented to tackle innovation creation, enhancing the deployment of solutions in the field of food safety and/or food fraud using existing knowledge, available technologies (such as molecular methods, genomic strategies, photonics, biotechnology, etc.) and also the results achieved by European framework programmes projects. The EU's strong knowledge base needs to be translated into marketable results so the "innovation paradox" is addressed;
- making food systems more resilient to food safety risks;
- increase food chain and food systems competitiveness creating close to the market impactful applications that will benefit and connect solutions for food systems actors (i.e., farming, raw materials and ingredients suppliers, food industry, etc.);
- increase complementarities and results uptake with past and existing European framework programmes projects, and synergies with programmes and their associated project results from the European Research Council (ERC), the European Innovation Council (EIC), etc. in the field of food safety and/or food fraud;
- contributing to EU climate action.

Scope: Proposals should contribute to all of the following aspects:

- in the area of food safety and food fraud a lot of efforts have been invested in European framework programme projects generating knowledge and potential applications. Proposals will contribute to further develop existing knowledge and technological results to reach higher TRL's aligned with user's needs and estimating the potential impact on cost for the consumers;
- support innovation to foster advances along the food system implementing digital and technological solutions in high TRL´s covering existing food safety and/or food fraud gaps. Proposals will develop and implement innovative solutions close to the market. This will be based on an initial food chain needs and technology gap analysis in the area of food safety and/or food fraud justifying the followed decision-making process; in scenarios of equal conditions, the most innovative clean technologies will be favoured. The exploitation plan should include preliminary plans for commercialisation and deployment (feasibility study, business plan) indicating the possible funding sources to be potentially used;

[91] European Commission, Directorate-General for Research and Innovation, Bizzo, G., Fabbri, K., Gajdzinska, M. et al., *Food 2030 – Pathways for action 2.0 – R&I policy as a driver for sustainable, healthy, climate resilient and inclusive food systems*, Publications Office of the European Union, 2023, **https://data.europa.eu/doi/10.2777/365011**

- identify existing regulations and give recommendations about which technologies could use sandboxes to foster future commercialisation;

Activities are expected to achieve TRL 8 by the end of the project. Proposals should clearly define the TRL starting point for each involved technology and the plan to reach more advanced TRL;

Applicants should seek complementarities and capitalise on the results of past and ongoing research and innovation projects (including projects under the same topic) in the areas of food safety and/or food fraud (i.e. HORIZON-CL6-2023-FARM2FORK-01-12 and HORIZON-CL6-2024-FARM2FORK-01-3 among others). Therefore, proposals should include a dedicated task, appropriate resources, and a plan on how they will collaborate with other ongoing projects under this theme. In the case of already finished projects applicants will define the best way to engage relevant stakeholders of such projects and the cooperation agreements (also in terms of technology transfer and intellectual property) that are needed;

Proposals are encouraged to consider, where relevant, the services offered by European research infrastructures such as METROFOOD-RI or other relevant research infrastructures.

Governmental and food safety regulatory authorities (i.e. EFSA) should, alongside with other stakeholders (startups, SMEs, investors, etc.) be involved. The multi-actor approach applies to this topic.

Proposals are also encouraged to consider citizens and societal engagement in their activities for the implementation of technological results better aligned with consumer's needs.

To achieve the expected outcomes, international cooperation is encouraged.

HORIZON-CL6-2025-02-FARM2FORK-17: Research and innovation for food waste prevention and reduction at household level through measurement, monitoring and new technologies

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 8.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: the proposals must

	apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [92].

Expected Outcome: Successful proposals will be in line with the European Green Deal priorities, notably the farm to fork strategy, the revised Waste Framework Directive and the EU's climate targets for 2030 and 2050. Actions will also be in line with the overall challenges highlighted in the updated Food 2030 pathways for action report published in December 2023[93] on food waste and resource efficient food systems.

Project results are expected to contribute to all of the following expected outcomes:

- successful implementation of the harmonisation of food waste measurement across Europe, supported by the development of new tools, producing reliable and comparable data on food and waste at household level;
- alleviate the burden of reporting of household waste data by making use of technological innovations;
- the main factors influencing the disposal of food at household level are better understood;
- in line with targets set by the Waste Framework Directive revision, contribute to the reduction of food waste at household level, thereby reducing greenhouse gas emissions and pressures on natural resources.

Scope: In the EU, over 58 million tonnes of food waste (131 kg/inhabitant) are generated annually[94], with an associated market value estimated at 132 billion euros.

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92 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

93 European Commission, Directorate-General for Research and Innovation, Bizzo, G., Fabbri, K., Gajdzinska, M. et al., *Food 2030 – Pathways for action 2.0 – R&I policy as a driver for sustainable, healthy, climate resilient and inclusive food systems*, Publications Office of the European Union, 2023, **https://data.europa.eu/doi/10.2777/365011**

94 Eurostat (2023), Food waste and food waste prevention – estimates, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Food_waste_and_food_waste_prevention_-_estimates

Eurostat roughly estimates that around 10% of food made available to EU consumers (at retail, food services and households) may be wasted. At the same time, over 37 million people cannot afford a quality meal every second day[95]. In the EU, households generate more than half of the total food waste (54%).

Wasting food is not only an ethical and economic issue but it also depletes the environment of limited natural resources, Food waste has a huge environmental impact, accounting for about 16% of the total Greenhouse Gas emissions from the EU food system. Therefore, by reducing food waste we can also support the fight against climate change.

Proposals should contribute to all of the following aspects:

- develop and validate new tools and methods to measure and estimate food waste at household level, including the food waste discarded as or with wastewaters and that would help distinguish between amounts of avoidable (edible) fraction of food waste and non-avoidable (inedible) food waste. The potential of AI and other technologies (including ones that are currently available) to simplify the collection of data and the reporting (by being integrated in advanced monitoring solutions) should be considered. Interoperable metadata standards accompanying indicators coming from these new tools and methods should be provided. The metadata standards for edible and inedible food waste indicators should allow data to be federated through the European Open Science Cloud (EOSC) infrastructure;

- these new tools and methods should be measured across a large enough sample of diverse type of products and target groups (in terms of gender, age, socio-economic status, ethnic and/or cultural origins, sexual orientation, etc.) as well as a more precise assessment of food waste fractions (edible and inedible), across several years and in all Member States, and potentially in Associated Countries. This should generate robust measurement/estimation of food waste at household level for different target groups, at national and EU levels. The potential for extensive uptake of the proposed solution should be clearly highlighted;

- in addition to measurement, the direct and indirect drivers and root causes of food waste at household level should be thoroughly investigated. Particular attention should be paid to the identification of consumer behaviours (food consumption and disposal patterns) and other factors that influence food waste at household level, to assess the potential for a reduction strategy based on change in consumer behaviours;

- explore potential eco-friendly, low-input and efficient technological solutions to prevent edible food from being discarded in households, e.g. by preventing product degradation.

The required multi-actor approach must be implemented by conducting inter- and trans-disciplinary research and involving a wide diversity of food system actors, with special attention paid to consumers and civil society organisations.

95 Ibidem

Proposals are encouraged to build on past or ongoing EU-funded research (in particular, the EU-funded CHORIZO and WASTELESS projects, expected to be finalised in 2025) and on the work carried out by the European Consumer Food Waste Forum, and create synergies with relevant initiatives including the EU Platform on Food Losses and Food Waste.

This topic should involve the effective contribution of SSH disciplines. Citizen Science is encouraged at all stages of the research activities for this topic and should be integrated in the research methodology. Proposals should take into account and address inequalities (e.g. by addressing the risk of AI bias in terms of gender, disability, ethnicity, etc.).

HORIZON-CL6-2025-02-FARM2FORK-18: Additional activities of the European partnership on sustainable food systems for people, planet and climate

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 35.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 35.00 million.
Type of Action	Programme Co-fund Action
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The proposal must be submitted by the coordinator of the consortium under HORIZON-CL6-2023-FARM2FORK-01-9: European partnership on sustainable food systems for people, planet and climate. This eligibility condition is without prejudice to the possibility to include additional partners.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions. If the proposal is successful, the next stage of the procedure will be grant agreement amendment preparations. If the outcome of amendment preparations is an award decision, the coordinator of the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-9: European partnership on sustainable food systems for people, planet and climate will be invited to submit an amendment to the grant agreement, on behalf of the beneficiaries.
Legal and	The rules are described in General Annex G. The following exceptions

financial set-up of the Grant Agreements	apply: This action is intended to be implemented in the form of an amendment of the grant agreement concluded pursuant to topic HORIZON-CL6-2023-FARM2FORK-01-9. For the additional activities covered by this action: • The funding rate is 30% of the eligible costs. • Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in theform of grants. • Financial support provided by the participants to third parties is one of the primary activities of this action in order to be able to achieve its objectives. The EUR 60 000 threshold provided for in Article 204(a) of the Financial Regulation No 2018/1046 does not apply. • The maximum amount of FSTP to be granted to an individual third party is EUR 10 000 000. This amount is justified since provision of FSTP is one the primary activities of this action and it is based on the extensive experience under predecessors of this partnership. The starting date of grants awarded under this topic may be as of the submission date of the application. Applicants must justify the need for a retroactive starting date in their application. Costs incurred from the starting date of the action may be considered eligible (and will be reflected in the entry into force date of the amendment to the grant agreement).
Total indicative budget	The total indicative budget for the duration of the partnership is EUR 175 million.

Expected Outcome: The second instalment of the partnership is expected in continuation to contribute to expected outcomes specified in topic HORIZON-CL6-2023-FARM2FORK-01-9: European partnership on sustainable food systems for people, planet and climate, for continuation of the activities and the continuation of already agreed outcomes.

Scope: The objective of this action is to continue to provide support to the European Partnership identified in the Horizon Europe Strategic Plan 2021-2024 and that will be implemented under the topic HORIZON-CL6-2023-FARM2FORK-01-9: European partnership on sustainable food systems for people, planet and climate, and in particular to fund additional activities (which may also be undertaken by additional partners) in view of its intended scope and duration, and in accordance with Article 24(2) of the Horizon Europe Regulation.

The consortium which applied to and is under grant agreement preparations under HORIZON-CL6-2023-FARM2FORK-01-9: European partnership on sustainable food systems for people, planet and climate is uniquely placed to submit a proposal to continue the envisioned partnership. The foreseen consortium has expertise in relation to the objectives of the Partnership and the activities to be implemented by calls and internal activities. In practice, another consortium could not continue the activities of the Partnership underway without significant disruption to the ongoing activities, if at all.

The scope of the application for this call on the European partnership on sustainable food systems for people, planet and climate should focus on the partnership's co-created strategic research and innovation agenda for seven to ten years which includes inspiration for calls for research projects and horizontal activities to allow the Partnership to operate and to achieve its specific objectives.

The partnership should seek to include additional partners, in particular from Member States and Associated countries not yet in the consortium funded under HORIZON-CL6-2023-FARM2FORK-01-9.

It is expected that the partnership organises joint calls on an annual base and therefore it should factor ample time to run the co-funded projects. The partnership should collaborate closely with relevant partnerships in Horizon Europe Cluster 6 and beyond, the partnership should describe specific activities foreseen to strengthen the synergies with other related Missions and Partnerships.

While the award of a grant to continue the Partnership in accordance with this call should be based on a proposal submitted by the coordinator of the consortium funded under HORIZON-CL6-FARM2FORK-01-9: European partnership on sustainable food systems for people, planet and climate and the additional activities (which may include additional partners) to be funded by the grant should be subject to an evaluation, this evaluation should take into account the existing context and the scope of the initial evaluation as relevant, and related obligations enshrined in the grant agreement.

Taking into account that the present action is a continuation of topic HORIZON-CL6-2023-FARM2FORK-01-9: European partnership on sustainable food systems for people, planet and climate and foresees an amendment to an existing grant agreement, the proposal should also present in a separate document the additional activities and additional partners, if any, to be covered by the award in terms of how they would be reflected in the grant agreement.

Targeted international cooperation

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-02-FARM2FORK-19: Developing agroecology living labs and lighthouses under the Food and Nutrition Security and Sustainable Agriculture (FNSSA) partnership

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part. The following additional eligibility criteria apply: due to the specific challenge of this topic, in addition to the minimum number of participants set out in the General Annexes, consortia must include at least three independent legal entities established in Africa. The places of establishment of at least two of these legal entities must be in the same geographical region of Africa (as defined by the African Union: https://au.int/en/member_states/countryprofiles2). International organisations with headquarters in a Member State or Associated Country are exceptionally eligible for funding. Due to the scope of this topic, legal entities established in in all African Union member states* are exceptionally eligible for Union funding. * "African Union member states" includes countries whose membership has been temporarily suspended.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants. In this case, the proposals must define the process of selecting entities for which

	financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. The maximum amount to be granted to each third party is EUR 60000. A maximum 30% of EU funding can be allocated to this purpose.

Expected Outcome: A successful proposal should support the European Green Deal priorities and the farm to fork strategy for a fair, healthy and environment friendly food system, and be in line with the conclusions of the 2023 AU-EU Agriculture Ministerial Conference and in support of the African Free Trade Area and of the climate objectives of the African Union and the EU, while supporting the biodiversity strategy and the Kunming-Montréal Global Biodiversity Framework. Projects will therefore contribute to the expected impacts of this Destination by developing innovative tools and approaches to improve the resilience and sustainability of agriculture and food systems in Africa.

Project results are expected to contribute to all the following expected outcomes:

- availability, accessibility and adoption of strategies and approaches that improve agricultural productivity and sustainability in Africa, while optimising the use of ecological processes with co-benefits for producers, climate, biodiversity and citizens, are increased and accelerated;
- coordination and experience sharing among researchers and agricultural actors in the Africa is strengthened;
- climate, environmental and economic performance of African agroecological farming systems is enhanced.

Scope: Agroecology is a holistic approach that relies on and optimises the use of ecological processes to support agricultural production. By working more with nature and ecosystem services, it has the potential to increase farms' circularity, diversification and autonomy, while preserving/enhancing biodiversity, and drive a full transformation of farming systems and agricultural value chains, from input substitution and beyond. Agroecological farming systems therefore have great potential to enhance the sustainability performance of agriculture and agricultural value chains that contribute to the objectives of the EU farm to fork strategy and the FNSSA partnership.

Living Labs under this topic are intended as open innovation ecosystems in real-life sites using iterative feedback processes throughout a lifecycle approach of an innovation to create sustainable impact (see https://enoll.org/about-us/what-are-living-labs/).

While Living Labs are collaborative initiatives to co-create knowledge and innovations, Lighthouses are sites for demonstration of exemplary solutions, training, peer-to-peer learning, and communications related to promoting agroecological approaches. Lighthouses can be included in a Living Lab area. However, they could also be located outside of Living Lab areas.

Proposals should demonstrate how they will contribute significantly to:

- setting up living labs and light houses as places for testing agroecological approaches in different pedoclimatic conditions in Africa, building on experience gained with on-going FNSSA projects on agroecological approaches under Horizon Europe Work Programme as well as with activities of the DeSIRA initiative part of the EU International Partnerships;

- carrying out participatory and transdisciplinary research and innovation activities in living labs, including on socio-economic aspects to support sustainability transitions and upscaling, to seek practical agroecological solutions to the challenges/opportunities identified;

- identifying sites that demonstrate high performance in terms of their actions and results on agroecology and that may be converted into lighthouses;

- strengthening interactions between existing living labs, light houses and like-minded arrangements on agroecology to share lessons and facilitate science policy interfaces using where relevant existing network arrangements, such as those under the CEA-First project;

Proposal should contribute to the AU-EU High Level Policy Dialogue (HLPD) on Science, Technology and Innovation, and its priority on Green Transition (and the respective R&I partnerships on Food and Nutrition Security and Sustainable Agriculture and Climate Change and Sustainable Energy), as well as to the implementation of the short-term and medium-term actions outlined in the AU-EU Innovation Agenda with special regards to the priority area of "Green Transition", aiming to translate R&I efforts into tangible business, products, services, development and employment opportunities in Africa and Europe.

Proposals should contribute to the implementation of the short- and medium-term actions of the joint AU-EU Innovation Agenda, particularly in the area of Green Transition, particularly in the priority area of Green Transition [notably actions (4) and (5) among short-term actions and (1) and (3) for medium-term actions].

Proposals should contribute to the implementation of the Union for the Mediterranean (UfM) adopted R&I roadmaps pertaining to climate change, particularly in the areas impact of water scarcity and drought in rural areas; sustainable agriculture production and biodiversity in changing climate.

Proposals should create synergies with any relevant activities carried out under the European Partnership "Agroecology" ('Accelerating farming systems transition – agroecology living labs and research infrastructures') and targeted EU-Africa cooperation activities under the EU Mission "A soil deal for Europe". Proposals should include a dedicated task and appropriate resources to create those synergies.

Proposals should adopt an inclusive approach that respects and integrates local knowledge and practices alongside technological and scientific expertise, where indigenous insights are enriched by innovative approaches and new technologies through mutual learning.

Proposals must implement the 'multi-actor approach' to ensure the adequate involvement of the farming sector, civils society and relevant policy actors.

Participation of Mediterranean countries other than from EU and AU is encouraged.

The possible contribution of the JRC could involve exploring possible pathways for a sustainable transition of agriculture and food systems, defining scenarios for the agro-ecological transition, assessing the impacts of such transition, engaging with stakeholders and disseminating results notably to policymakers.

The proposals must ensure that gender dimension and social categories such as disability, age, socioeconomic status, ethnic and/or cultural origins, sexual orientation, etc., and their intersections, are duly considered.

Proposals may involve financial support to third parties to researchers, farmers, advisors and other multidisciplinary actors contributing to the setting up of living labs and/or lighthouses. The provision of training (including technical guidelines and ad-hoc materials) and support services to farmers may be considered as a criterion to grant financial support to third parties.

HORIZON-CL6-2025-02-FARM2FORK-20: Developing a joint AU-EU Agricultural Knowledge and Innovation System (AKIS) supporting the Food and Nutrition Security and Sustainable Agriculture (FNSSA) partnership

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the

	introduction to this work programme part. The following additional eligibility criteria apply: due to the specific challenge of this topic, in addition to the minimum number of participants set out in the General Annexes, consortia must include at least three independent legal entities established in Africa. The places of establishment of at least two of these legal entities must be in the same geographical region of Africa (as defined by the African Union: https://au.int/en/member_states/countryprofiles2). International organisations with headquarters in a Member State or Associated Country are exceptionally eligible for funding. Due to the scope of this topic, legal entities established in in all African Union member states* are exceptionally eligible for Union funding. * "African Union member states" includes countries whose membership has been temporarily suspended.

Expected Outcome: A successful proposal should support the European Green Deal priorities and the farm to fork strategy for a fair, healthy and environment friendly food system, and be in line with the conclusions of the 2023 AU-EU Agriculture Ministerial Conference and in support of the African Free Trade Area and of the climate objectives of the African Union and the EU, while supporting the biodiversity strategy and the Kunming-Montréal Global Biodiversity Framework. Projects will therefore contribute to the expected impacts of this Destination by developing innovative tools and approaches to improve the resilience and sustainability of agriculture and food systems in Africa.

Project results are expected to contribute to all the following expected outcomes:

- AU and EU science-policy interfaces are strengthened to achieve the Sustainable Development Goals, in line with the FNSSA roadmap;
- R&I actors in AU and EU, including farm advisors, primary producers, other business and service providers, and consumers, are better informed and engaged within a well-functioning joint AU-EU AKIS supporting the implementation of agroecological approaches both in Africa and in the EU;
- better experience sharing among AKIS actors in the EU and AU is achieved;

Scope: AKIS is defined as the combined organisation and knowledge flows between persons, organisations and institutions who use and produce knowledge for agriculture and interrelated fields. Technological, non-technological and social innovation should be considered in an AKIS context. In the context of the FNSSA, developing an effective AKIS in close cooperation with the International Research Consortium on FNSSA will strengthen long-term sustainability and foster the co-creation and flows of knowledge and innovation aimed at ensuring food and nutrition security and improving sustainability of agriculture through agroecological transition.

Proposals should:

- develop and animate a joint AU-EU Agricultural Knowledge and Innovation System (AKIS) as a bi-continental platform linking African and European AKIS actors to exchange best practices on how to enhance co-creation and flows of knowledge and innovation aimed at food and nutrition security and sustainable agriculture;
- identify, map and study the main AKIS actors and AKIS functioning at different levels (local, national, regional) in a set of countries in African context to support the agroecological transition, in close cooperation with the FNSSA International Research Consortium;
- analyse the AKIS relationships (synergies, complementarities, contradictions) between different AKIS levels: local, national, regional, and continental;
- formulate operational recommendations to develop a joint AU-EU AKIS to improve resilience and sustainability of agrifood systems both in Africa and Europe.

Proposal should contribute to the AU-EU High Level Policy Dialogue (HLPD) on Science, Technology and Innovation, and its priority on Green Transition (and the respective R&I partnerships on Food and Nutrition Security and Sustainable Agriculture and Climate Change and Sustainable Energy), as well as to the implementation of the short-term and medium-term actions outlined in the AU-EU Innovation Agenda with special regards to the priority area of "Green Transition", aiming to translate R&I efforts into tangible business, products, services, development and employment opportunities in Africa and Europe.

Proposals should contribute to the implementation of the short- and medium-term actions of the joint AU-EU Innovation Agenda, particularly in the area of Green Transition, particularly in the priority area of Green Transition [notably actions (4) and (5) among short-term actions and (1) and (3) for medium-term actions].

Proposals should contribute to the implementation of the Union for the Mediterranean (UfM) adopted R&I roadmaps by researchers, farmers and policymakers pertaining to climate change, particularly in the areas impact of water scarcity and drought in rural areas; sustainable agriculture production and biodiversity in changing climate.

Proposals must implement the 'multi-actor approach' to ensure the adequate involvement of the public authorities, advisory services and farmer organisations.

HORIZON-CL6-2025-02-FARM2FORK-21: Nutrition in emergency situations - Ready-to-use Supplementary Food (RUSF) and Ready-to-use Therapeutic Food (RUTF)

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU	The Commission estimates that an EU contribution of around EUR 4.00

contribution per project	million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 8.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part. The following additional eligibility criteria apply: due to the specific challenge of this topic, in addition to the minimum number of participants set out in the General Annexes, consortia must include at least three independent legal entities established in Africa. The places of establishment of at least two of these legal entities must be in the same geographical region of Africa (as defined by the African Union: https://au.int/en/member_states/countryprofiles2). International organisations with headquarters in a Member State or Associated Country are exceptionally eligible for funding. Due to the scope of this topic, legal entities established in in all African Union member states* are exceptionally eligible for Union funding. * "African Union member states" includes countries whose membership has been temporarily suspended.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 60000.

Expected Outcome: Ready-to-use Supplementary Food (RUSF) and Ready-to-use Therapeutic Food (RUTF) rely often on imported components while local resources are not exploited A sustainable and healthy food systems approach is needed for corrective action. Research and Innovation will ncrease the use of locally available sources of protein, micronutrients and fatty acids (plant-, marine-, and other locally available ingredients) in the local production and food processing of RUSF and RUTF, the latter in line with Codex Guidelines CXG 95-2022 in Africa. Identify options that allow for the safe use of new, locally produced, alternative supplementary foods to be certified by WHO and used, based on the

health status of the child and the local conditions, as alternatives to the current 'all RUTF' approach. An approach that is more and more challenged by the increasing production and transportation costs, lack of access to beneficiaries, mainly in fragile and conflict affected countries and with a large carbon footprint.

The topic follows the Food 2030 approach, in particular its co-benefits on nutrition, climate, circularity and innovation and implements the FNSSA roadmap of the AU-EU research and innovation partnership. It is also part of a humanitarian-development-peace (HDP) nexus action.

Project results are expected to contribute to all the following expected outcomes:

- scaling up locally produced RUSF and RUTF will help improving access to the life saving nutrition products for more children in need;
- sustainable and locally produced RUSF and RUTFs will enable national governments to develop versions of these products that are best suited to the local context, having higher acceptability, and provide the regulatory frameworks to manufacturers for national production in line with the relevant Codex Alimentarius Guidelines, such as CXG 95-2022.
- supporting African countries' governments in their effort of local production of energy, protein and micronutrient supplements contributing to the objectives of climate change adaptation and mitigation, sustainable and efficient management of natural resources, resilience and disaster risk reduction and biodiversity preservation.

In parallel research could be developed around new safe and efficacious, science based recipes that could complement and replace under specific circumstances, in collaboration with the Nutrition Technical Advisory Board and after the validation by WHO, the exclusive use of RUTF for persons not affected by severe acute malnutrition, while making sure that relevant quality criteria, information practices and use criteria are established (based on the child health status and local circumstances).

Scope: Research and innovation collaboration between Europe and Africa will help the African countries (health specialists, producers, seed companies, SMEs and food industries) to develop/ scale up the relevant and sustainable local production of RUSF and RUTF or any other types of supplements and related ingredients, using varieties adapted to local climate and agro-ecological conditions. Thereby contributing to reduce the climate footprint of production and transport in line with the objectives of climate change adaptation and mitigation, sustainable and efficient management of natural resources.Implement the multi-actor approach by involving a wide range of food systems actors and conducting inter-disciplinary research. Link up for clustering to other projects of the AU-EU research and innovation priorities, in particular linked to Food Systems transition projects and the wider range of projects in Food and Nutrition Security and Sustainable Agriculture (FNSSA), Climate Change and Sustainable Energy (CCSE) and the AU-EU Innovation Union using the

network linkages to the CEA-First project and the International Research Consortium on FNSSA.

Innovation: Proposals should foresee a space for mentoring and accelerating innovative business concepts, including social innovation and upscaling in view of African or European food business entrepreneurs and start-ups with special consideration of women and the diaspora using cascading funding opportunities. Proposals should involve financial support to third parties e.g. to academic researchers, health institutes, start-ups, SMEs and other multidisciplinary actors, to, for instance, develop, test or validate developed assessment approaches or collect or prepare data sets or provide other contributions to achieve the project objectives. Consortia need to define the selection process of organisations, for which financial support will be granted. Maximum 20% of the EU funding can be allocated to this purpose.

Destination - Circular economy and bioeconomy sectors

The Destination supports the European Green Deal, and a wide range of EU initiatives such as the circular economy action plan, the EU bioeconomy strategy, the forest strategy for 2030, and the Common Agriculture Policy. In addition, this Destination contributes to the industrial strategy, the chemicals strategy for sustainability, the European Climate Law, the SME strategy, the communication on safe and sustainable by design framework, the sustainable blue economy and its offshoot initiatives, the EU biodiversity strategy for 2030, the EU Nature Restoration Law, the proposals for an EU forest monitoring regulation and an EU soil monitoring and resilience regulation, as well as the EU farm to fork strategy.

The Destination also upholds the upcoming working plan for the implementation of Ecodesign for Sustainable Products Regulation, as well as research needs identified in the Global Resources Outlook 2024.

Furthermore, it will support the EU Biotechnology and Biomanufacturing Initiative covering and underpinning sustainable bio-based innovation systems. Also, it will support the capacity of bio-based systems to enable a sustainable carbon management and allow the better understanding of the carbon removal potential of circular bio-based economies. The destination will align with the Global Biodiversity Framework, the future science-policy panel to further contribute to the sound management of chemicals and waste and to prevent pollution and promote the new approach for the sustainable blue economy in the EU which stresses that marine/aquatic biotechnology offers solutions for materials, enzymes, food supplements and pharmaceuticals.

R&I activities under this Destination will help establishing healthy, biodiverse and resilient forests that are sustainably managed and able of providing a wide range of key ecosystem services, including climate mitigation through carbon removals and continuing supplying materials and services for the development of a sustainable forest bioeconomy in line with the EU forest strategy for 2030.

Proposals for topics under this destination should set out a credible pathway contributing to "**achieving healthy soils and forests, as well as clean air, fresh and marine water, whilst ensuring water resilience and the transition to a clean, competitive and circular economy and sustainable bioeconomy**", and more specifically to one or more of the following impacts:

- innovative circular and bio-based materials, products, processes and value chains are developed for the consumers and industry, replacing unsustainable alternatives and leading to new and more sustainable approaches for managing waste materials and by-products, aiming at pollution avoidance and remediation, and the promotion of new forms of cooperation between diverse economic and societal actors across sectors and territories;

- industry and consumers benefit from new opportunities both through sustainable novel products in line with ecodesign principles, and novel circular business models that have a mitigating impact on resource use and greenhouse gas emissions;

- innovative business and governance models, are advanced to foster safe and sustainable product design t. This includes durability, reliability, reusability, upgradability, reparability, recyclability, recycled content, and circularity with a comprehensive approach addressing environmental impacts also at a territorial level and involving civil society in fostering a circular economy;

- large-scale diffusion of social and technological innovation across circular and bioeconomy sectors within planetary boundaries thanks to innovative climate-neutral, circular, bio-based and nature-based solutions;

- the full potential of marine and freshwater biological resources and blue biotechnology is leveraged to deliver societal benefits, such as more environmentally-friendly industrial products and processes, support public health and environmental conservation;

- actors in the forest sector foster the multi-functionality of forests based on the three pillars of sustainability (economic, environmental and social), enhancing sustainable and circular bioeconomy including support to business development; restoring and protecting biodiversity and ecosystems, ensuring that ecosystem services continue to be delivered including mitigating and adapting to climate change; and delivering societal expectations including well-being of different actors.

R&I fostering circular economy and other sectors under this Destination aimed at impacting or involving civil society will take into account the participation of disadvantaged groups based on gender and other social categories as appropriate.

The Horizon Europe work programme for 2025 will play a critical role in implementing the Ecodesign for Sustainable Product Regulation (ESPR). More sustainable and circular products will contribute to the resilience of the EU economy. Changes in consumer behaviour and availability of attractive service solutions will lead to waste prevention and tangible reduction in material and energy consumption and greenhouse gas emissions. R&I can link various EU policies, namely those related to the green and digital transitions, resilience and competitiveness.

Outcomes will ensure synergies with Cluster 4 – ‘Digital, industry and Space’, its partnerships and with Cluster 5 – ‘Climate, Energy and Mobility’. Full synergy and complementarity will be ensured with the fully operational EU partnership on ‘Circular Bio-based Europe’ (CBE Joint Undertaking), the EU partnership for a climate neutral, sustainable and productive blue economy and with the EU mission ‘Restore our Ocean and Waters by 2030’, as well as with the Soil mission. Furthermore, to maximise the local impact under this destination, synergies and complementarities with the Circular Cities and Regions Initiative (CCRI) and the New European Bauhaus (NEB) Facility are encouraged as appropriate. Coordination will be ensured with the long-standing EC Knowledge Centre for Bioeconomy. Possible synergies

should be sought with other JRC activities. The destination will ensure synergies and complementarities with the future European Partnership "Forests and forestry for a sustainable future". To maximise the impacts of R&I under this Destination, international cooperation is encouraged.

Enabling a circular economy transition

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-01-CIRCBIO-01: Novel circular business models to enable the just transition to a sustainable and circular economy

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 6-8 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: In supporting the implementation of the European Green Deal, and in particular the 2020 circular economy action plan (CEAP), the Waste Framework Directive and the Ecodesign for Sustainable Products Regulation (ESPR), successful proposals will contribute to the expected impacts of this Destination, notably to benefits for industry and consumers from new opportunities both through sustainable novel products in line with ecodesign principles, and to novel circular business models that have a mitigating impact on resource use and greenhouse gas emissions.

Project results are expected to contribute to all of the following expected outcomes:

- consumers obtain access to new circular products and services, such as reuse, repair and sharing, that encourage sustainable consumption and thus reduce the environmental footprint, greenhouse gas emissions, and the pressure on biodiversity;
- economic operators that want to introduce circular business models are provided with examples and recommendations how to do it;
- (re-)skilling programmes and new job opportunities emerge in the areas of re-use, preparing for reuse, repair, upgrade, remanufacture, repurpose and refurbishment.

Scope: The green transition and moving to a circular economy will require changes not only in the way materials are used and products are designed, but also in the way companies operate and business models are set up. The majority of current business models and the global economic and trading system are based on linear and unsustainable use of materials and products. This results in ever-increasing consumption, depletion of resources, increase in CO_2 emissions and environmental deterioration, and undesirable generation of waste. The transition to a sustainable and circular economy necessitates transformative changes in material usage and corporate operations, with innovative business models able to trigger sustainable consumer behaviours and purchasing preferences. These models are pivotal in steering both industries and consumers towards sustainable practices, aligning with the comprehensive environmental objectives of the European Green Deal and the EU biodiversity strategy for 2030. The transition to a circular economy is key to reducing pressures on natural resources. It is also a prerequisite to achieve the EU's 2050 climate neutrality target and to halt biodiversity loss.

Novel circular business models can affect business-internal practices as well as interactions with other businesses or civil society. Proposals should develop and demonstrate at large scale innovative business models to facilitate product reusability, reparability, refurbishment, repurpose and remanufacture, including the preparation stage, as well as product-as-a-service business models.

Proposals should assess and quantify, including monetisation, when possible, the environmental, social and economic impacts of these novel business models on relevant stakeholders, i.e., consumers, social partners, private companies with a focus on SMEs, municipalities and regions. The assessment of environmental impacts should be done from a lifecycle perspective and build on rules set in the Environmental Footprint methods wherever possible. Impacts of the business models on the overall resource efficiency should also be assessed, as far as possible. Proposals should analyse the 'pull' factors that shift consumer choices in the direction of products/services offered by circular business models, as well as what can encourage more to do so. Ecodesign and EU Ecolabel aspects, and the verification of green claims should be considered where relevant.

Proposals should contribute to the development of innovative business models, including social economy entities and social enterprises, to enable the transition towards a circular and sustainable ecosystem and to stimulate the uptake of sustainable consumption patterns. Proposals should address the opportunities of developing new business models in the context of the circular economy R-strategies (refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose) as well as upgrade.

Proposals should include social innovation and explore behavioural change routes towards an increase of demand for sustainable products and even towards an overall reduction of consumption and product/materials use. Proposals should also explore self-sufficiency approaches and promote regenerative practices aimed at restoring biodiversity, mitigating climate change, and strengthening local communities and social justice.

The proposals should address the different perspectives of all relevant actors in a proposed project, which could be actors involved in raw material sourcing, material processing and manufacturing, intermediate production, end-product manufacturing, as well as brand owners, retailers, enterprises, re-use and repair organisations, civil society/consumers, etc. Proposals should also reflect on how access to finance can be facilitated and how economic viability can be ensured, and how governance can promote the establishment of these new business models. Critical issues of change management, scaling and diffusion of solutions should be addressed.

Proposals should target specific social groups and their purchasing power while developing novel business models, in order to keep a fair transition to climate neutrality in mind. This includes possible questions of gender equality, diversity and inclusion. Also, proposals should assess the potential of and prerequisites for new job opportunities in the areas of reuse, preparing for reuse, repair, upgrade, refurbishment, repurpose and remanufacture, contributing qualitative and quantitative data to the reskilling programmes of the green transition.

For the development of novel business models, projects should include elements of fair and affordable pricing of services/labour within various R-strategies as well as upgrade. In this context, projects should also analyse barriers to such models and possible regulatory, governance and economic solutions. Projects should also address possible unintended effects, both positive and negative, particularly for consumers and the environment, of such novel business models.

Proposals should explore the territorial and geographical dimensions of the establishment and success of new business models, and aim at synergies with the New European Bauhaus and the Circular Cities and Regions Initiative (CCRI). Projects are strongly encouraged to organise joint activities, ensure synergies and undertake clustering activities with CCRI projects and the CCRI Coordination and Support Office. To avoid double-funding and to create added value, projects should seek synergies with projects to be performed under the LIFE-2024-SAP-ENV Call[96].

This topic requires the effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

HORIZON-CL6-2025-01-CIRCBIO-02: Improving ecodesign of products and development of testing methods for products prioritised under the Ecodesign for Sustainable Products Regulation

Call: Cluster 6 Call 01

[96] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/life/wp-call/2021-2024/call-fiche_life-2024-sap-env_en.pdf

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 8.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: In supporting the implementation of the European Green Deal, and in particular the circular economy action plan (CEAP), the Ecodesign for Sustainable Products Regulation (ESPR), and the Right to Repair initiative, successful proposals will help reach the Green Deal objectives of lower resource consumption and less environmental impact. They will contribute to the expected impacts of this Destination, notably to innovative business and governance models that foster safe and sustainable product design.

Project results are expected to contribute to all of the following expected outcomes:

- material and product manufacturers apply the ecodesign principles in developing and manufacturing products and are equipped with methods to assess the performance and potential compliance of their products with the ecodesign requirements to be developed under ESPR, as well to drive sustainability innovations;
- market surveillance authorities and notified bodies are equipped with methods for the verification of compliance of products with the ecodesign requirements;
- consumers have access to reliable and verified information about the ecodesign performance of products;
- consumers benefit from more sustainable and circular products, i.e. durable, reliable, reparable, reusable, upgradable, recyclable products including increased recycled content.

Scope: The Regulation on Ecodesign for Sustainable Products (ESPR) [97] lays down requirements for products placed on the EU market to improve their environmental sustainability. First, the product groups will need to be identified, based on the prioritisation criteria laid down in the text of the regulation. Then secondly, targeted performance and information requirements – known as 'ecodesign requirements' – will need to be laid down, on a product-specific basis, or horizontally for several product groups sharing similar technical characteristics allowing requirements to be defined horizontally. Such requirements will need to address the environmental impacts of the product(s) in question in a meaningful

[97] Regulation (EU) 2024/1781 of the European Parliament and of the Council of 13 June 2024 establishing a framework for the setting of ecodesign requirements for sustainable products, amending Directive (EU) 2020/1828 and Regulation (EU) 2023/1542 and repealing Directive 2009/125/ECText with EEA relevance. (europa.eu)

way, making reference to the methodologies prescribed in the ESPR. The project outputs will serve as a scientific basis for and feed into the consequent "preparatory studies" which will be conducted per each prioritized product group under the ESPR work plan once published.

Each applicant should choose one of the following product groups: furniture and mattresses (as one group), home/interior textiles, footwear or toys. For the analysed product groups, proposals must include in the scope representative sub-categories of the product groups on the EU market making reference to relevant European, international and national classification systems and standards, where existing.

Projects are expected to:

- assess how product parameters (as per Annex I of the ESPR) relevant for circularity can be determined for the given product group and explore potential new parameters with the aim of improving the circularity performance of the product;
- assess the performance of products in relation to the specific product parameters (as per Annex I of the ESPR) and explore pathways to their improvement;
- focus on those product parameters having impact on product aspects contributing to circularity, i.e., durability, reliability, reusability, upgradability, reparability, possibility of maintenance and refurbishment, presence of substances of concern, resource use and resource efficiency, recycled content, possibility of remanufacturing and recycling, possibility of recovery of materials, expected generation of waste materials, and premature obsolescence, as well as social sustainability requirements;
- develop, test and validate product-specific testing methods for the determination and verification of product performance in relation to the said specific parameters;
- provide analyses and recommendations for additional mechanisms and incentives to reward design for circularity and product durability – such as extended guarantees, VAT reduction, and others – including potential trade-offs;
- map the material flows relevant for the given product group and assess the impacts of potential requirements on these flows within and across value chains (requirement on e.g. recycled content in one value chain can impact availability of secondary raw material in another value chain, etc.);
- develop quantitative and qualitative data on relevant aspects of consumer behaviour in relation to the product parameters for the given product groups.

Proposals should take into account all provisions of the ESPR. The ESPR provisions aim at improving the overall sustainability of the product(s) in question, and by improving the product aspects set out in that regulation (see Art. 5; Annex I). In addition, the revised version of the MEErP methodology by JRC[98] , and the JRC's preliminary study on new product

[98] Review of the MEErP - Publications Office of the EU (europa.eu)

priorities under ESPR[99] whose draft was published in 2023 should all be reference points. The series of standards on material efficiency for energy-related products EN455XX must be considered as well. In relation to the presence of substances of concern, building on the relevant provisions in the ESPR, the proposals should take into account the principles of Safe and Sustainable by Design (SSbD)[100] applied to chemicals and materials.

For the individual products within the product groups, the proposals should assess the existing methods for the setting of the ecodesign requirements in relation to the specific parameters (as set out in Annex I of the ESPR) with the objective to improve the product aspects (as set out in Article 5 of the ESPR) and, as appropriate, develop them further based on the nature of the product, its most relevant aspects and its impacts over its life cycle. In doing so, the projects should make use of the work already done in assessing the setting of requirements under Directive 2009/125/EC and the continuing efforts to develop and improve science-based assessment tools, such as the updated methodology for ecodesign of energy-related products (MEErP).

Also, proposals should take into account relevant technical information in particular of Regulation (EC) No 66/2010 on the EU Ecolabel, Directive 2010/75/EU on Industrial emissions (integrated pollution prevention and control), technical screening criteria adopted pursuant to Regulation (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment, and green public procurement criteria.

The development of a product specific testing method should include not only the development of the method from the theoretical point of view, but also its proper testing and validation to evaluate its suitability, repeatability, and reproducibility in practice. Projects should demonstrate advances in the development and/or application of related digital/AI computational tools, methods or technologies in the area of assessing ecodesign requirements and developing methods for the verification of performance.

As part of the project, proposals should address the knowledge gap in capacity and skills, especially for SMEs, potentially limiting the understanding of upcoming ecodesign requirements especially if trickling down from upstream in their product value chains as well as when conducting the assessments of compliance with ecodesign requirements. Learning and training materials should be developed for dissemination and training purposes within the relevant companies and value chains.

The integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

99 https://susproc.jrc.ec.europa.eu/product-bureau/sites/default/files/2023-01/Preliminary%20ESPR%20WP%20Report_MERGED_CLEAN_.pdf

100 JRC Publications Repository - Safe and Sustainable by Design chemicals and materials - Methodological Guidance (europa.eu)

HORIZON-CL6-2025-01-CIRCBIO-03: Product Environmental Footprint (PEF) of policy and market-relevant product groups

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 8.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: In supporting the implementation of the European Green Deal, and in particular the circular economy action plan (CEAP) and the Ecodesign for Sustainable Products Regulation (ESPR), successful proposals will contribute to the expected impacts of this Destination, notably 'addressing environmental impacts at a territorial level and involving civil society in fostering a circular economy'.

Project results are expected to contribute to all of the following expected outcomes:

- improved knowledge for stakeholders on links of circular economy with environmental pollution on air, soil and water and the pressures on biodiversity and ecosystems through the analysis of the environmental impacts of specific products;
- the development of sector-specific methods, data, tools and guidance documents for the assessment, communication and comparison of environmental impacts of targeted product groups, relying on Environmental Footprint (EF) methods;
- the PEF-based assessment and reduction of environmental impacts for a significant number of relevant products;
- engagement of stakeholders, including industry, SMEs and NGOs, to enhance consistency, reliability and use of developed sustainability metrics and tools across sectors.

Scope: The circular economy action plan (CEAP) aims to stimulate the development of sustainable products, in the EU and beyond, contributing to the EU's 2050 climate neutrality target and to halt biodiversity loss. To achieve this, it establishes a sustainable product policy regulation that broadens the scope of the Ecodesign Directive both in terms of products (covering a very broad range of products, beyond energy-related products only) and new kinds of requirements. It will be key to achieve a sustainable and circular economy.

Life cycle assessment (LCA) is a key source of information on environmental impacts of products, services or systems. The Commission proposed the Product Environmental

Footprint (PEF)[101] as a common way of measuring environmental performance. The PEF methodology, grounded on the LCA standard methodology, allows manufacturers and consumers to obtain reliable and comparable information about the performance of products with respect to various environmental impact categories. A calculation based on the general PEF methods gives quantitative information on the impacts of products, taking into consideration the entire value chain.

R&I activities in the proposal should:

- review existing knowledge, identify and fill knowledge gaps and then develop and test PEF category rules for selected product groups of policy and market relevance;
- perform in-depth full life cycle assessment studies (also addressing end-of-life aspects) based on PEF for those products groups to identify, quantify, interpret and communicate environmental impacts;
- develop appropriate datasets tailored to the assessed product groups identifying and filling data gaps, as much as possible based on industry and other representative data, and create tools which will be made publicly available to enable and ease PEF-compliant assessments and communications among stakeholders, as well as their verification;
- develop methods to derive or link relevant ecodesign requirements [102] from PEF-compliant assessments, i.e. how decisions for design with a lower environmental footprint can be motivated;
- develop guidance, training and dissemination strategies and material to support the wider use of PEF in the selected sector(s).

Proposals should focus on at least one of the following product groups: furniture and mattresses (as one group); home/interior textiles; final products made of metals, or plastics; tyres; polymers and selected groups of other chemicals; ICT products.

For the analysed product groups, proposals should target a sufficiently broad and granular scope, targeting comprehensive representative sub-categories and products on the market. In doing that, proposals should refer to relevant European, international, and national classification systems and standards where possible. Projects should adhere to the most recent EU rules and data[103] established for the PEF methods and bring together all relevant expert

101 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021H2279 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L_202401781 the current recommendation for PEF is the recommendation 2021/2279 which is now being revised with the target of having a new recommendation for 2025

102 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021H2279 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L_202401781 the current recommendation for PEF is the recommendation 2021/2279 which is now being revised with the target of having a new recommendation for 2025

103 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021H2279 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L_202401781 the current recommendation for PEF is the recommendation 2021/2279 which is now being revised with the target of having a new recommendation for 2025

groups and different stakeholders active along the value chains of the selected product groups (industry members, researchers, SMEs and NGOs).

Proposals should develop appropriate and comparable datasets for assessing the analysed products as well as tools and digital solutions to facilitate the sharing and processing of information along the value chain as well as the assessment, communication and verification of environmental characteristics of products based on the PEF method. As part of the project, proposals should also address the knowledge gap in capacity and skills, especially for SMEs, potentially limiting the understanding, conducting and implementing of PEF-based assessments. Learning and training materials should be developed for dissemination and training purposes within and across companies and value chains. Efforts should be made to ensure that the data produced in this topic is FAIR (Findable, Accessible, Interoperable and Re-usable). Furthermore, different tasks, outputs, interactions with stakeholders, and communication, dissemination and exploitation activities should be conceived in a logical sequence along the lifetime of the project.

HORIZON-CL6-2025-01-CIRCBIO-04: Development and testing of Extended Producer Responsibility schemes (EPR) within the priority Circular Economy Action Plan value chains

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: In supporting the implementation of the European Green Deal, the 2020 circular economy action plan, the Waste Framework Directive and the Ecodesign for Sustainable Products Regulation, successful proposals will contribute to achieving improved circularity in selected product value chains and improving efficiency of separate collection and waste management systems. They will contribute to the expected impacts of this Destination, notably improving the "durability, reliability, reusability, reparability, recyclability and circularity" of consumer products.

Project results are expected to contribute to all of the following expected outcomes:

- demonstrated innovative solutions for large scale uptake and implementation of Extended Producer Responsibility (EPR) schemes, providing for its application by producers, producer organisations and relevant actors across the EU and Associated Countries, including cross-border cooperation mechanisms.

- improved knowledge of economic operators (including SMEs) and consumers regarding EPR schemes, notably eco-modulation of EPR fees, and how these contribute to increasing circularity, minimising the demand for primary resources, reducing GHG emissions, preventing environmental pollution and reducing the pressure on biodiversity and ecosystems.

- optimal functioning and increased uptake of EPR schemes in specific priority value chains within EU and Associated Countries: construction products, ICT products, furniture, mattresses, and carpets.

Scope: The new circular economy action plan introduces measures that aim at making sustainable products the norm, contributing to the EU's 2050 climate neutrality target and to halt biodiversity loss. It focuses on sectors that use the most resources and have the highest circularity potential such as textiles, plastics, packaging, electronics including ICT products, furniture and construction products.

EPR schemes can contribute to improve circularity deficits in key product value chains with high circularity potential given its full lifecycle approach. They make producers responsible for the entire lifecycle of the products placed on the market, from their design up to end of life, including waste collection and recycling. These schemes can be a lever for producers, including SMEs, to design their products for circularity considering sustainability criteria and have been proven successful in improving the management of waste in products such as packaging and batteries.

R&I activities in proposals should:

- develop, test and demonstrate operational solutions for implementing at large scale EPR schemes that consider the eco-modulation of EPR fees for one or more of the above-mentioned product value chains;

- develop and test novel circular business models and solutions linked to EPR schemes for the above-mentioned product value chains, supported by ecodesign requirements[104], and assess the economic, environmental and social cost-benefits of their implementation for the relevant stakeholders, especially producers (namely SMEs) and consumers;

- develop and test the application of dedicated digital technologies, such as the digital product passport and tracking applications, to collect evidence within those product value chains;

[104] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L_202401781

- provide policy recommendations for specific elements of an EPR scheme that incentivises waste prevention and/or minimisation (e.g., ecodesign, reuse, preparation for reuse, repair and refurbishment, remanufacturing and recycling).

Proposals should consider the global perspective within the national EPR schemes, as frequently the value chains mentioned above are established at a global scale and producers may be established outside of the EU. This may apply to new products made available on the EU-market or waste from post-consumer products managed outside the EU. They should also include the case of online marketplaces, given the increase of online sales and the fact that producers may avoid registering under EPR schemes for the countries that they are selling into (free-riding), as well as cross-border cooperation mechanisms.

Projects should bring together all relevant stakeholders active in the selected product value chains (industry members, local authorities, waste management operators, SMEs, economic operators, consumer organisations, researchers, and NGOs).

This topic requires the effective contribution of SSH disciplines, namely economics and sociology, and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

HORIZON-CL6-2025-01-CIRCBIO-05: Consumption patterns and environmental awareness as enablers of transition to circular economy

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions

Expected Outcome: In supporting the implementation of the European Green Deal, and in particular the 2020 circular economy action plan (CEAP), the Waste Framework Directive, the upcoming Green Claims Directive, the EU Ecolabel and the Ecodesign for Sustainable Products Regulation (ESPR), successful proposals will contribute to the expected impacts of this Destination, notably to benefits for industry and consumers from new opportunities both through sustainable novel products in line with ecodesign principles, and novel circular business models that have a mitigating impact on resource use and greenhouse gas emissions.

Project results are expected to contribute to all of the following expected outcomes:

- increased awareness of consumers of the importance of their choices, and of available sustainable and circular purchasing and use options, and demonstrated willingness to change their consumption behaviour accordingly;

- guidance is made available to public authorities and civil society organisations on how awareness about sustainable and circular consumption decisions can be increased and how decisions for consumption with a lower environmental footprint and lower greenhouse gas emissions can be motivated;

- circularity-related knowledge and skills of economic operators including product designers are strengthened, with the intention to make sustainable circular products and services more attractive to consumers.

Scope: The transition to a circular economy is key to reducing pressures on natural resources. It is also a prerequisite to achieve the EU's 2050 climate neutrality target and to halt biodiversity loss. Sustainable consumption and production are key elements in the societal transition to circular and sustainable economy. Decoupling economic activities and human well-being from natural resource use and environmental impacts is essential and necessary. As part of the transition, with the emergence of circular and sustainable products, consumers will play an even more important role in making sustainable choices. Consumer empowerment encourages sustainable choices, which in return contribute to pollution reduction and climate neutrality.

Proposals should address the gaps in public awareness about the environmental impacts of the mainstream consumption patterns and between prevalent consumer knowledge/awareness and actual behaviour. Proposals should make use of social innovation and should analyse and identify the economic, social, behavioural, psychological, technical and legal barriers and levers for the uptake of circular and sustainable products, solutions and services. The analysis should address relevant aspects of fairness, equality, diversity, inclusion, and gender.

Proposals should first assess the patterns and underlying motivations of consumption habits through experimentation within various cultural, geographical, social, and economic groups. Based on this assessment, projects should draw and evaluate possible pathways to behavioural change of various economic actors (municipalities, companies including retailers and service providers, end-users) to enable the transition to circular and sustainable economy. These pathways should show how to change the demand for products and services with high environmental impacts and resource intensity, towards more circular and sustainable ones, including used and second-hand products and sharing services. The assessment of environmental impacts should be done from a lifecycle perspective and build on rules set in Environmental Footprint methods wherever possible. The pathways should include policy, governance and business recommendations in all relevant areas (economic, behavioural, educational, technical, legal, cultural, etc.).

Power imbalances between industry and civil society should be addressed, and the impact and potential of Ecodesign, Ecolabel, green claims, and of digital infrastructures and digital

product passports should be explored with a view to changing vantage points and consumer behaviour.

Convincing narratives, framing strategies and storytelling tactics should be developed, improving knowledge of selling points, i.e., which features and qualities make a product or service attractive for consumers.

Proposals should explore the territorial and geographical dimensions of consumption patterns, and aim at synergies with the New European Bauhaus and the Circular Cities and Regions Initiative. Proposals are strongly encouraged to organise joint activities, ensure synergies and undertake clustering activities with CCRI projects and the CCRI CSO.

This topic requires the effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

HORIZON-CL6-2025-01-CIRCBIO-06: Open Topic: Innovative solutions for the sustainable and circular transformation of SMEs

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 6-8 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: In line with the EU 2050 climate neutrality objective, the circular economy action plan (CEAP), zero pollution action plan, the EU biodiversity strategy and the EU industrial strategy, a successful proposal will contribute to the expected impacts of this Destination related to innovative circular and bio-based materials, products, processes and value chains and to innovative business and governance models to reduce resource consumption environmental impact .

Project results are expected to contribute to all of the following expected outcomes:

- SMEs are equipped to overcome key barriers and challenges in the green transition and to implement requirements of relevant EU policies to mitigate climate change, reduce

pollution emissions to air, water and soil, to protect, restore and sustainably use biodiversity or to reduce environmental degradation;

- significantly more SMEs are engaged in sustainable business practices and management practices, have improved their environmental performance and offer innovative circular and bio-based materials, products, processes, or services enhancing industrial competitiveness, resilience, and resource independence;

- sustainable circular business practices are taken up and diffused.

Scope: Under this open topic, proposals should address common but also new, upcoming, or unforeseen challenges to the green transition of SMEs through innovative, disruptive and sustainable solutions. Proposals should identify and analyse key barriers for the sustainable and circular transition of SMEs and develop and demonstrate innovative solutions. If they relate to some of the topics covered by Horizon Europe Calls 'Circular economy and bioeconomy sectors' 2021-2022 or 2023-2024, the proposals should convincingly explain how they will build on and not duplicate them.

Solutions can be innovative products, processes, services, or also plans and arrangements. Solutions can include for example, new business models (e.g. regenerative), collaborative governance and organisational approaches, development of tailored transformation plans, the identification, development and communication of meaningful set of metrics and indicators, environmental management and reporting tools or others. Proposals can also include the use of digital solutions e.g. digital product passports (DPP), Artificial Intelligence (AI) or digital assistants enabled by Generative Artificial Intelligence. Proposals should analyse the required skills and include skill development activities for current and future employees of the SMEs.

Proposals should demonstrate the feasibility (e.g. economic, technical), environmental performance and utility and transferability of the developed and demonstrated solutions, notably to address climate change mitigation, biodiversity or environmental remediation aspects related to the sustainable and circular transformation of SMEs. The demonstrations of the innovative solutions should be done in a large-scale operational environment with strong involvement of SMEs. The first deployment of the solutions and the validation of their utility can be demonstrated at territorial, sectoral or value chain context. Nevertheless, the solution should be transferable, and the proposal should include the effectively replication in other contexts.

Successful proposals should address the requirements of EU policies relevant to the green transformation of SMEs and consider demands from business partners, as customers, to advance their related commitments. Proposed solutions should be concrete and user-friendly tolower the administrative burden for SMEs. This includes adopted, and planned legislation such as the Corporate Sustainability Reporting Directive (CSRD), Ecodesign for Sustainable Products Regulation (ESPR), Green Claims Directive, the Eco-Management and Audit Scheme (EMAS), EU taxonomy, best available techniques standards and technology developments like digital product passports (DPP). Proposals should also include the development of policy recommendations that support the widespread adoption of the

validated solution and use of new knowledge in the development and revision of regulatory frameworks.

Successful proposal should build on the publicly available achievements and findings of related previous national or EU-funded projects as well as collaborate with existing public organisations, e.g. the Enterprise Europe Network, Innovation Centre for Industrial Transformation and Emissions (INCITE) or the EU pact for skills initiative. It is expected that SMEs or SME associations are participating in the consortia, to ensure applicability and dissemination of the results. The engagement of non-governmental organisations, small-scale initiatives and suitable industry or industry associations is encouraged.

HORIZON-CL6-2025-01-CIRCBIO-07: Indicators for the transition to sustainable and circular economy

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 8.00 million.
Type of Action	Research and Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 4-6 by the end of the project – see General Annex B. Activities may start at any TRL.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [105].

Expected Outcome: In supporting the implementation of the European Green Deal, and in particular the 2020 circular economy action plan (CEAP), successful proposals will contribute to the expected impacts of this Destination, notably to innovative business and governance models and innovative circular materials, products, processes and value chains.

[105] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Project results are expected to contribute to all of the following expected outcomes:

- increased knowledge about suitable indicators for measuring the progress and level of circularity in local communities, households, or in value chains at different company levels, as well as associated impacts, including on greenhouse gas emissions, and using Environmental Footprint methods and the derived Consumption Footprint;
- recommendations are made available on how to develop these indicators further, including for the collection of necessary data;
- guidance and recommendations are made available to local public authorities, social economy entities and financial institutions on how to use these indicators in their circularity-supporting activities.

Scope: The EU circular economy monitoring framework has been developed to monitor the progress of the EU and Member States in the circular economy transition. It uses aggregated macroeconomic indicators suitable for understanding how the whole economy changes. At the microeconomic level, i.e., at the level of individual economic agents such as companies, households or investors, or at the level of small territorial units such as cities or regions, no formal monitoring system exists besides the criteria set under the Taxonomy Regulation for Sustainable Activities that are set at activity level. However, more and more economic agents start to use CE indicators either for their internal decisions or for communication with their business partners, clients or the public. The European Commission's Joint Research Centre and the European Environment Agency[11] are currently doing research into circularity indicators in specific areas. The European Commission also launched a stocktaking exercise in the form of a contract for the development and testing of indicators and methods for measuring transition to climate-neutral circularity, its benefits, challenges and trade-offs under the Horizon Europe work programme for 2021.

A number of different indicators are currently used for this purpose, often with low information value or outright erroneous and misleading. Several organisations attempted to develop more robust indicator systems and offer them to their members or clients. While this effort is useful, none of these organisations has the authority to propose a monitoring system that would be accepted by a majority of economic actors and stop the proliferation of micro-level CE indicators. The European Commission is in the unique position to convene relevant stakeholders and facilitate the process of development of harmonised CE micro-economic monitoring indicators. Financial institutions are turning to the European Investment Bank (EIB) to organise a similar process to harmonise the monitoring indicators suitable for financial institutions.

Projects should develop and test a set or several sets of simple and meaningful indicators for monitoring of progress towards circular economy at the level of individual economic agents, i.e., in cities and regions, in households, or at different company levels. These indicators should allow circularity monitoring for the addressed entities, but also help public administration and financial institutions in their decision-finding in support of circularity

transition measures. Proposals should test the operability of these indicators in the public/private investor environment, or in municipal/regional governance.

If within a project several separate sets of indicators are developed for different users, these should be compatible and possibly have a common set of core indicators.

Proposals should also thematise reasons for and benefits from the use of these circularity indicators and present convincing arguments. Proposals should take a lifecycle perspective and consider available instruments such as the consumption footprint indicator.

Project results will be of relevance for the Circular Cities and Regions Initiative. Projects are therefore strongly encouraged to organise joint activities, ensure synergies and undertake clustering activities with CCRI projects and the CCRI CSO.

The integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

HORIZON-CL6-2025-01-CIRCBIO-08: Demonstration, deployment and upscaling of circular systemic solutions in cities and regions (Circular Cities and Regions Initiative)

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 9.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 18.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 6-8 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: In supporting the implementation of the European Green Deal, and in particular the 2020 circular economy action plan (CEAP), a successful proposal will contribute to various expected impacts of this Destination, notably by supporting the development of innovative circular solutions as well as innovative business and governance models, and fostering social, technological and non-technological innovation across sectors and value chains at local and regional level.

Project results are expected to contribute to all of the following expected outcomes:

- increased circularity and reduced GHG emissions in the economic sectors, services and product value chains at local and/or regional scale, and efficient valorisation of local resources, with positive effects on air quality and biodiversity;

- widespread deployment and easier replication, scalability and visibility of circular systemic solutions for a multiplication of their economic, social and environmental benefits;

- enhanced collaboration and knowledge transfer between the cities, regions and their partners, and increased uptake and stakeholder engagement in their circular and climate-neutral practices.

Scope: Proposals are expected to implement and demonstrate at large scale circular systemic solutions for the deployment and upscaling of the circular economy in cities and regions. The main objective is to stimulate social innovation through new circular innovative technologies, novel governance and business models in order to contribute to climate mitigation and help reduce pressures on natural resources.

This CCRI-related topic does not target specific technologies or industrial sectors, but supports the implementation of a systemic approach. This means that the implemented circular systemic solutions must involve relevant circular economy stakeholders in the targeted cities/regions, and address several (at least two) sectors and value chains – as set out in the 2020 circular economy action plan[106].

Proposals should select their circular systemic solutions and related economic sectors (e.g. construction and buildings, transport and mobility, bioeconomy, land use and spatial planning) based on a detailed analysis of the cities' and regions' socio-economic and environmental needs, as well as their local circular potentials.

Proposals should monitor and evaluate the implementation and the impacts of their circular systemic solutions through the project lifespan. This should include the identification, analysis, and when feasible, quantification of the economic, social and environmental benefits and other results. By doing so, proposals could take into consideration various social variables (e.g. gender, age, socio-economic status). In this case, proposals should involve the effective contribution of SSH disciplines.

Proposals should facilitate knowledge and experience transfer for further outreach and replication across EU Member States and Associated Countries. They should therefore clearly identify the lessons learned from the demonstration projects, specifying the enabling framework, the main (regulatory and/or market) barriers and the enablers, the business case as well as any other relevant factors for successful replication and upscaling in other cities and/or regions. In that respect, proposals should include a clear action plan to communicate experiences and results to 'replicators'. This is essential for ensuring that circular systemic solutions demonstrated in specific areas are replicated in others.

Proposals should define financing strategies for their circular systemic solutions, for instance in the form of a business plan and/or proven technical and economic feasibility of the

[106] The CEAP focuses on the sectors and value chains that use most resources and where the potential for circularity is high such as: electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients.

implemented solutions. Proposals should also foresee financing follow-up, for instance by linking with the Circular Cities and Regions Initiative financial advisory services (including the Horizon Europe funded Project Development Assistance Projects[107] and the European Investment Bank's Circular City Centre[108]).

Selected proposals will form part of the implementation of the European Commission's Circular Cities and Regions Initiative (CCRI) and will be carried out in close coordination and cooperation with the CCRI Coordination and Support Office. This means that:

- Proposals must cooperate with the CCRI Coordination and Support Office[109] and must ensure that all evidence, information and project outcomes (e.g. good practices, novel governance and business models) will be accessible through the CCRI website and other related channels.

This topic targets public local and regional authorities or their groupings in EU Member States and Associated Countries. At least 3 different demonstration and 6 replication cities/regions must be part of the consortium as beneficiaries. Proposals should support the engagement and active participation of all relevant circular economy stakeholders in the targeted cities and regions, such as policymakers (at all governance levels), research bodies and academia, the civil society, the private sector (industry, entrepreneurs, start-ups, small and medium enterprises etc.) and financial intermediaries. Moreover, proposals should ideally consider different typologies (urban/peri-urban/rural), sizes (towns/cities) and/or geographical areas. Multi-actor Approach (MAA) and social innovation are encouraged.

Proposals must clearly specify how they will ensure synergies and complementarities with other relevant circular economy projects and initiatives, including those recognised as CCRI Projects[110] and CCRI Associated Partners[111]. In that sense, proposals must include a dedicated task, appropriate resources and a plan on how they will collaborate with the CCRI office, projects and partners.

Joint activities with CCRI projects are encouraged. Linkages with relevant initiatives such as the Hubs for Circularity[112], the Regional Innovation Valleys[113], the New European Bauhaus and the Climate-Neutral and Smart Cities Mission should be explored – whenever relevant.

Innovating for sustainable bio-based systems, biotechnology and the bioeconomy

Proposals are invited against the following topic(s):

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107 https://circular-cities-and-regions.ec.europa.eu/ccri-projects?f%5B0%5D=type_of_action%3A183

108 https://advisory.eib.org/about/circular-city-centre.htm

109 CCRI Coordination and Support Office: (dedicated section in the online FAQs)

110 List of CCRI Projects from Horizon 2020 or Horizon Europe (LC-GD-3-2-2020; HORIZON-CL6-2021-CIRCBIO-01-01; HORIZON-CL6-2021-CIRCBIO-01- 02, HORIZON-CL6-2022-CIRCBIO-01-01, HORIZON-CL6-2023-CircBio-02-1-two-stage, HORIZON-CL6-2024-CircBio-01-1): https://circular-cities-and-regions.ec.europa.eu/ccri-projects

111 List of CCRI Associated Partners: https://circular-cities-and-regions.ec.europa.eu/associated-partners

112 Hubs4Circularity (h4c-community.eu)

113 Inforegio - Regional Innovation Valley - Matchmaking map now available (europa.eu)

HORIZON-CL6-2025-01-CIRCBIO-09: Bioprospecting and optimized production of the terrestrial natural products: new opportunities for bio-based sectors

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 11.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: Successful proposals should contribute to European policies, in particular the European Green Deal, and the bioeconomy strategy, and particularly as relevant to the bio-based sector. They should deliver on the following impacts of this Destination: "*innovative circular and bio-based materials, products, processes and value chains developed for the consumers and industry, replacing unsustainable alternatives and (...) promote the optimised use of sustainable bio-based resources for greater efficiency*", as well as "*large-scale diffusion of social and technological innovation across circular and bioeconomy sectors within planetary boundaries thanks to innovative climate-neutral, circular, bio-based and nature-based solutions*", and "*contributing to ensure that all ecosystems are restored, resilient, and adequately protected*".

Project results are expected to contribute to all of the following expected outcomes:

- demonstrating the broadened range of more sustainable and more accessible natural bioactive products from terrestrial ecosystems with high value market applications;
- demonstrating advances in the development and/or application of related computational tools and methods or technologies, such as AI etc. in the biodiscovery pipeline;
- increased commitment to biodiversity preservation and conservation through enabling bioproduction routes (biosynthesis, fermentation, culturing) of natural products, ensuring that the biodiscovery of new compounds does not lead to unsustainable harvesting from the wild, to ensure a sustainable use of genetic diversity;
- awareness raising and creation of a better framework for biotechnology and bio-based innovation and uptake through broad stakeholder engagement, supporting the EU biotechnology and biomanufacturing initiative.

Scope: The action covers modern biodiscovery approaches, including full integration of digital-driven, '-omics' and associated bioinformatic tools[114], which make possible the identification and further upscaling (optimized production) of bioactive natural compounds with potential high-value application in various bio-based sectors including pharmaceuticals, nutraceuticals, cosmetics, food/feed additives, agrochemicals, etc. In the context of this topic, the natural products are understood as biologically active products such as secondary metabolites as well as enzymes derived from terrestrial organisms. New products should be safe and sustainable following the SSbD approach.[115]

The scope covers immense diversity of terrestrial micro- and macro-organisms and their communities, which represents a rich and largely unexplored reservoir of natural products and their base ingredients (e.g. plants, fungi, microorganisms etc are in scope. The biochemical interplay between interspecies communities, e.g. symbiotic or defence mechanisms may offer attractive leads and is also in scope). For the coverage of aquatic bioprospecting see parallel topic HORIZON-CL6-2025-01-CIRCBIO-15: Bioprospecting of marine natural products in the -omics & artificial intelligence era.

The aim of this action is to broaden the range of novel compounds, lowering the production costs, quicken the development pipeline, and enable more innovation for the industrial operators, with clear-cut benefits for the final users (consumers and industries). The biodiscovery pipeline may cover in silico prospecting, genomic characterisation, creation of natural product libraries, bioactivity screening, chemical structure elucidation, natural products isolation and purification, and/or optimized production pathways via biotechnology and biomanufacturing approaches (including via gene editing) in suitable industrial facilities (bioreactors/biorefineries, e.g. microbial production), or synthetic biology approaches.

Targeted terrestrial biological resources can be sourced from their natural environment (in-situ) and/or from public and private collections and gene-banks (ex-situ).

The integration of digital approaches and tools (AI, computer algorithms such as machine learning, modelling, data science, digital twins etc) on optimizing the biodiscovery processes such as identification of biosynthetic gene clusters and metabolic pathways, enzyme selection, combinatorial assembly and annotation of high-throughput DNA sequencing data, bioactivity prediction, elucidation of the structure of compounds, experimental design etc is in scope (see the parallel topic HORIZON-CL6-2025-01-CIRCBIO-10: Unleashing the potential and advancing the impact of the digitalization/AI of the bio-based value chains).

Safety to the end-users, and operators needs to be assessed and guaranteed.

The action needs to avoid overlaps to past or ongoing topics (e.g. projects funded under the topic HORIZON-CL6-2022-CIRCBIO-02-05-two-stage - Life sciences and their convergence with digital technologies for prospecting, understanding and sustainably using biological

[114] Related to e.g. statistics, algorithms, AI, data science, modelling etc.

[115] Commission Recommendation (EU) 2022/2510 of 8 December 2022 establishing a European assessment framework for 'safe and sustainable by design' chemicals and materials. https://cordis.europa.eu/programme/id/H2020_FNR-11-2020/en

resources, or the topic HORIZON-CL6-2023-CIRCBIO-01 - Broadening the spectrum of robust enzymes and microbial hosts in industrial biotechnology), consider synergies to parallel actions (e.g. HORIZON-CL6-2025-01-CIRCBIO-15 - Bioprospecting of marine natural products in the omics and artificial intelligence era), as well as funded under topic Horizon2020-FNR-11-2020: Prospecting aquatic and terrestrial natural biological resources for biologically active compounds[116]. Also, links to the actions under the Circular Bio-based Europe Joint Undertaking (CBE JU) may be established, as relevant.

Proposals should take into account the findings of the Global Resources Outlook 2024 of the International Resource Panel.

Projects will have a strong industry/SME focus and include demonstration activities to proof the techno/economic viability of the production of the proposed terrestrial natural product(s) and/or the biodiscovery platform tools combining digital approaches and tools and biotechnologies.

The action needs to guarantee biodiversity preservation, offering decrease of pressure on wild resources and higher overall sustainability, with policy dialogue with competent authorities; projects need to comply with applicable EU regulations and international rules on access to biological resources, such as UN Convention on Biological Diversity and its Nagoya Protocol, their sustainable use and the fair and equitable sharing of benefits from their utilisation. This can be addressed, inter alia, by covering propagation of biological material, including by in vitro cultivation, as well as by biotechnological approaches. A sustainability assessment should be carried out in order to evaluate the environmental, economic and social performance of the developed product(s). Proposals should contribute to understanding of potential trade-offs inherent in the exploitation of ecosystems, and their potential to deliver ecosystem services. Any risks to the ecosystems should be assessed and minimised, along the application of the Do-No-Significant-Harm (DNSH) principle.

Proposals should include a task dedicated to sharing methodologies and findings with projects funded under this topic and with similar recent or ongoing projects.

International cooperation is in scope and encouraged, for win-win outcomes and mutual benefits.

HORIZON-CL6-2025-01-CIRCBIO-10: Unleashing the potential and advancing the impact of the digitalization/AI of the bio-based value chains

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU	The Commission estimates that an EU contribution of around EUR 5.00

[116] Commission Recommendation (EU) 2022/2510 of 8 December 2022 establishing a European assessment framework for 'safe and sustainable by design' chemicals and materials.
https://cordis.europa.eu/programme/id/H2020_FNR-11-2020/en

contribution per project	million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 7 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: Successful proposals should contribute to European policies, in particular the European Green Deal, and the bioeconomy strategy, and particularly as relevant to the bio-based sector. They should deliver on the following impacts of this Destination: "*innovative circular and bio-based materials, products, processes and value chains developed for the consumers and industry, replacing unsustainable alternatives and (...) promote the optimised use of sustainable bio-based resources for greater efficiency*", and "*large-scale diffusion of social and technological innovation across circular and bioeconomy sectors within planetary boundaries thanks to innovative climate-neutral, circular, bio-based and nature-based solutions*"[117]

Project results are expected to contribute to all of the following expected outcomes:

- the sustainability, resilience and the strategic autonomy of the European bio-based industry is improved due to the unleashing the full potential of Artificial Intelligence (AI), digitalisation and IT solutions, supporting the bio-based innovation;
- the opportunities on more sustainable feedstocks, more productive and efficient industrial processes and operations, and products, including via increased circularity, biodegradability, and due to better understanding of the carbon removal potential of bio-based systems, are advanced and demonstrated;
- improved understanding of risks and benefits based on new inclusive assessment methods, taking on board advances on technical and social innovation level.

Scope: There is an unprecedented amount of data available in the bio-based sector today, among others, from the ever-growing '-omics' technologies and integration of sensors and the Internet of Things (IoT) devices. Big data and analytics solutions allow bio-based actors, in particular, the bio-based industry, but also other R&I and civil society stakeholders, to tap into this wealth of data to drive innovation and sustainability. Operators already use the bioinformatics solutions but there is still much potential to explore undiscovered bio-based systems, improve processes and develop cleaner solutions (e.g. see parallel topics HORIZON-CL6-2025-01-CIRCBIO-15: Bioprospecting of marine natural products in the omics & artificial intelligence era, and HORIZON-CL6-2025-01-CIRCBIO-09: Bioprospecting and

[117] Nature-based solutions - European Commission (europa.eu)

optimized production of the terrestrial natural products: new opportunities for bio-based sectors).

AI enables also the bio-based operators to automate a wide range of processes, helping them scale up their operations. Using AI image analysis or leveraging deep learning can be used to analyse microbiomes, screen phenotypes, and develop rapid diagnostics in a vast range of applications. Use of AI to predict best metabolic pathways for biosynthesis, optimize/engineer enzymatic activities, and virtually test several variables can speed up bioprocesses' development, while helping to reduce costs and deliver novel molecules for the market. Also, streamlining biorefineries with AI can led to several levels of productivity gains. Moreover, systemic and integrated modelling approaches can optimise the rational deployment of bio-based value chains.

The action will first, explore the potential of AI and other digital technologies and tools in the bio-based sector and, next, focus on developing new capacities, high-quality tools and algorithms of AI and other digital technologies and tools to be demonstrated for the most promising (in terms of impact on environmental sustainability and competitiveness) applications of this sector. In this context, the concept of a 'digital twin'[118] could be explored. Generative artificial intelligence is in scope, if relevant to the proposed concept.

In line with the current definition of the EU bioeconomy strategy, health biotechnology sector is not in scope.

The scope covers all relevant aspects of the contribution of AI/digital methodologies and tools capable of delivering the high sustainability gains (resource efficiency, circularity, climate neutrality etc), as well as enhance the European industrial competitiveness (in particular in regard to improved quality of bio-based products, strategic autonomy, resilience and role of innovative SMEs). The proposals should demonstrate the upscaling from the current potential, align it to parallel actions on AI and other digital technologies and tools (e.g. database development, predictive capacities, EU-level initiatives (e.g. EU AI Act, Biotechnology and Biomanufacturing Initiative), and incorporate the systematic assessment of the risks and opportunities for the sector.

Multi-actor Approach (MAA) and social innovation are encouraged, especially to address the societal concerns and perceptions on the role of AI in the bio-based innovation and broader bioeconomy (e.g., impacts on skills and job opportunities/risks). All relevant stakeholders and value chain actors are in scope. Links to the Circular Bio-based Europe Joint Undertaking (CBE JU) operations are strongly encouraged. Proposals should also consider citizens engagement and dialogue, for seeking wider input and support, and encourage social innovation approaches.

[118] A digital twin is a digital representation of a physical object, person, or process, contextualized in a digital version of its environment. Digital twins can help an organization simulate real situations and their outcomes, ultimately allowing it to make better decisions.

Proposals should take into account the findings of the Global Resources Outlook 2024 of the International Resource Panel. Any risks to the ecosystems should be assessed and minimised, along the application of the Do-No-Significant-Harm (DNSH) principle.

The action will serve to develop guidelines for the policy makers, industry and civil society, in an inclusive co-creation process.

Proposals should include a task dedicated to sharing methodologies and findings with projects funded under this topic and with similar recent or ongoing projects.

Proposals should leverage the data and services available through European Research Infrastructures federated under the European Open Science Cloud, as well as data from relevant Data Spaces. Proposals are encouraged to consider, where relevant, the services offered by European research infrastructures such as IBISBA or other relevant research infrastructures[119]

International cooperation is encouraged, e.g. with countries mentioned in the EU biotechnology and biomanufacturing initiative communication, such as USA, Japan, South Korea, and India, for win-win outcomes and mutual benefits.

HORIZON-CL6-2025-01-CIRCBIO-11: Support to the EU Biotechnology and Biomanufacturing Initiative: scoping action

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 2.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 2.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the

[119] The catalogue of European Strategy Forum on Research Infrastructures (ESFRI) research infrastructures portfolio can be browsed from ESFRI website https://ri-portfolio.esfri.eu/

	Research and Training Programme of the European Atomic Energy Community (2021-2025). [120].

Expected Outcome: Successful proposals should contribute European policies, in particular the European Green Deal, and the bioeconomy strategy, and particularly as relevant to the bio-based sector. They should deliver on the impacts of this Destination: "*innovative circular and bio-based materials, products, processes and value chains developed for the consumers and industry, replacing unsustainable alternatives and (...) promote the optimised use of sustainable bio-based resources for greater efficiency*", as well as "*large-scale diffusion of social and technological innovation across circular and bioeconomy sectors within planetary boundaries thanks to innovative climate-neutral, circular, bio-based and nature-based solutions*"[121].

Project results are expected to contribute to all of the following expected outcomes:

- improved uptake of the solutions in the context of the European biotechnology and biomanufacturing initiative[122], as related to the bio-based sector and broader bioeconomy including by ensuring consumers' rights and needs (e.g., increased transparency, co-creating solutions that have high potential for uptake by consumers and stakeholders);

- higher environmental sustainability, including of biomass uses for the development of new bio-based materials and products, replacing fossil- or less environmentally - friendly bio-based ones, and overall innovation capacity, enabled by the technical solutions and stakeholder engagement. This will focus on sharing best practice and inclusive participation across the EU and society;

- improved awareness on the level of EU, national and regional policy making, based on scientific excellence and inclusive co-creation process with relevant stakeholders;

- development of an EU vision and strategic research and innovation agenda to foster biotechnology and biomanufacturing solutions to address EU economic security risks and global challenges like climate change or biodiversity protection.

Scope: The action will take stock of the large number of funded actions on biotechnology and biomanufacturing (EU – including European Partnerships (in particular, under Circular Bio-based Europe Joint Undertaking (CBE JU)), EU Missions, and European research

120 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

121 Nature-based solutions - European Commission (europa.eu)
COM(2024) 137 Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU

122 Nature-based solutions - European Commission (europa.eu)
COM(2024) 137 Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU

infrastructures programmes in the area of biotechnology such as EU-IBISBA, as well as others on the national, regional, and international level), related to industrial, environmental, marine and agri-food biotechnology (note: in line with the current definition of the EU bioeconomy strategy, health biotechnology is not in scope), as well as parallel broader scientific advances on the same topics.

Areas of interest could cover CRISPR-Cas gene editing, digital technologies, including as advanced under the EU-funded projects, e.g. project GENEBECON, funded under topic HORIZON-CL6-2021-ZEROPOLLUTION-01-08: New genomic techniques (NGT): understanding benefits and risks – focus on bio-based innovation, projects DETECTIVE and DARWIN, under topic HORIZON-CL6-2023-FARM2FORK-01-11: New detection methods on products derived from new genomic techniques for traceability, transparency and innovation in the food system etc., as well as social developments (trust-building measures, evidence-based policy making, social innovation (e.g. project B-TRUST, funded under topic HORIZON-CL6-2023-GOVERNANCE-01-6: Co-creation and trust-building measures for biotechnology and bio-based innovation systems). Also, the action may take into consideration the outputs from the parallel topics, such as HORIZON-CL6-2025-01-ZEROPOLLUTION-02: Environmental sustainability criteria for primary agricultural crops for industrial bio-based systems, or HORIZON-CL6-2025-02-FARM2FORK-14: Raising citizen awareness on alternative proteins, including those derived from biotechnology**,** as well the results of the upcoming European Commission study on "Supporting the green transition via the EU Industrial Strategy: opportunities and challenges for bioeconomy, through bio-based industrial systems and biotechnology in the EU"**.**

The action will provide scientifically robust assessment of the social, economic and environmental benefits and risks of biotechnologies and biomanufacturing and deliver recommendations in form of a consolidated EU vision and research and innovation agenda, on future trends and main innovation avenues. This action will serve as future basis of the next stages of implementation of the EU biotechnology and biomanufacturing Initiative or its follow-up actions/legislation (e.g. a possible future EU Biotech Act). It should also explore the role of biotechnology and biomanufacturing in terms of knowledge needs around the potential positive impacts and potential risks of biotechnology, including on biodiversity and ecosystems, e.g., resource efficiency, sustainable biomass management, impacts on air, water and soil quality. Furthermore, the action should inform the policy makers on national level, as an input to new or updated national bioeconomy strategies or roadmaps. Furthermore, as biotechnology has also been identified as a critical technology from the economic security perspective[123] , given its cross-cutting nature, and also as one of the technologies prioritised in the Strategic Technologies for Europe Platform (STEP) regulation[124], such aspects should be covered in scope of the present action.

[123] Commission Recommendation (EU) 2023/2113 of 3 October 2023 on critical technology areas for the EU's economic security for further risk assessment with Member States.

[124] Proposal for a Regulation of the European Parliament and the Council establishing the Strategic Technologies for Europe Platform ('STEP') and amending Directive 2003/87/EC, Regulations (EU) 2021/1058, (EU) 2021/1056, (EU) 2021/1057, (EU) No 1303/2013, (EU) No 223/2014, (EU) 2021/1060, (EU) 2021/523, (EU) 2021/695, (EU) 2021/697 and (EU) 2021/24, COM/2023/335 final.

The action should include scoping activities related to the environmental aspects and the new advances e.g. on using synthetic biology for novel functionalities with large application in several (circular bio-based) industrial sectors. It will also support the capacity of bio-based systems to enable a sustainable carbon management and the better understanding of the carbon removal potential of bio-based economies. Proposals should take into account the findings of the Global Resources Outlook 2024 of the International Resource Panel. The proposals under the topic should ensure best use of outcomes from previous projects on biotechnology (some of which are already referenced in the topic), for building consumer trust regardless of regulatory status of the products. To promote this, mapping use cases from past projects should be included. Furthermore, synergies with projects on biotechnology/biomanufacturing pilot infrastructure, such as projects Pilots4U and Copilot (BBI-JU and CBE-JU, respectively) is encouraged, given they may enable the accessibility to pilot infrastructure to bring biotech/biomanufacturing initiatives to the market.

International cooperation is encouraged, e.g. with countries mentioned in the EU biotechnology and biomanufacturing Initiative communication, such as USA, Japan, South Korea, and India, for win-win outcomes and mutual benefits.

This topic should involve the effective contribution of SSH disciplines.

HORIZON-CL6-2025-01-CIRCBIO-12: Demonstration of reduced energy use and optimised flexible energy supply for industrial bio-based systems

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 11.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 7 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: Successful proposals should contribute to a clean, competitive and circular bioeconomy, through the development of innovative and climate-neutral bio-based processes.

Project results are expected to contribute to all the following expected outcomes:

- bio-based industries' operators increase the uptake of innovative low-energy bio-based processes and the use of renewable energy in the processes and utilities of the industrial

assets to progress towards climate neutrality and reduction of emission of air pollutants related to energy consumption;

- industrial bio-based systems improve their resilience against energy provision issues.

Scope: Key elements of circular economy applicable to industrial bio-based processes and technologies include increasing their energy and resource efficiency. In fact, on one side, industrial bio-based systems may be affected by a higher energy consumption; on the other side, energy supplies may experience shortage and/or price fluctuations that make the most energy-intensive sectors more vulnerable. Industrial bio-based systems within the scope of this topic do not include food/feed, biofuels, bioenergy and cultural/recreation sectors.

Proposals should select one or more case-studies of bio-based industrial systems, within the scope of the topic, and:

- describe how to improve energy efficiency , developing and implementing, for example: energy efficient (thermal) separation technologies (e.g., membrane distillation); fast and energy efficient drying processes of biomass (e.g., for wood residues, algae residues, and other residual streams); optimized catalysts, enzymatic processes and reactors to save energy, etc.. analyse the rebound effect of energy saving measures and how to address them;

- analyse the nexus water-energy in the processes of the selected bio-based industrial systems and how the reduction of water consumption contributes to energy saving, e.g., in separation and purification processes, as well as how to address the water-energy integration within the factory by considering the whole processes and all the utilities;

- describe how to enable energy consumption flexibility through the optimization of processes with faster response rate to be flexible to variable energy supply, (e.g., by slowing production when less energy available, and prices are high, or increasing the production and/or storing energy and energy carriers onsite when surplus of energy is available, and prices are low);

- analyse the implementation of renewable energy use in the selected bio-based industrial systems, including shifting from fossil-based to renewable resources and/or shifting to electrification;

- include a task in the project to demonstrate the solutions analysed at points 1-4, to i) improve energy efficiency; ii) integrate water-energy nexus; iii) enable energy consumption flexibility; iv) use renewable energy. Such solutions should be demonstrated on one or more of the selected case-studies, and should be optimized, also through the applications of digital tools including based on artificial intelligence. Assess the contribution to climate neutrality of the selected solutions.

For increased resource efficiency (water and energy use) and circular economy (e.g. minimisation of waste generation or raw materials use) in large industrial installations, please

refer to the INnovation Centre for Industrial Transformation and Emissions (INCITE) (https://innovation-centre-for-industrial-transformation.ec.europa.eu/).

Multi-actor approach is mandatory.

In this topic the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement

HORIZON-CL6-2025-01-CIRCBIO-13: Harmonizing and optimising composting plants performances in Europe

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 2.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 2.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [125].

Expected Outcome: Successful proposals should contribute to a clean, competitive and circular economy and sustainable bioeconomy, through the involvement of waste management operators, enabling the deployment of innovative circular bio-based materials and more sustainable approaches for managing waste materials.

Project results are expected to contribute to all the following expected outcomes:

- local authorities and operators responsible for the waste management improve the territorial deployment of individual or centralised composting plants;

[125] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- waste management operators in the EU and Associated Countries share best practices on harmonized performances of composting plants and the optimization of their environmental performances reducing the impacts on air/water/soil.

Scope: From 31 December 2023, EU Member States must collect bio-waste separately. The Waste Framework Directive allows waste which complies with relevant standards for packaging recoverable through composting and biodegradation, to be collected together with bio-waste. For example, the collection of bio-waste with industrially compostable plastic bags is encouraged (EC Communication on "EU policy framework on biobased, biodegradable and compostable plastics" COM(2022)). However, industrial composting facilities in the EU are often unable to biodegrade such packaging due to different performances of composting processes than those required for the biodegradation of compostable packaging compliant with the standard EN 13432. Harmonization of the performances of industrial composting plants in the EU would help meeting the targets for bio-waste collection and the quality of resulting compost.

Proposals should:

- analyse the technical performances of industrial composting plants, with a special focus on the treatment of compostable packaging, at EU and at global scale. Compostable packaging in the EU is compliant with the standard EN 13432. The analysis should address the environmental impacts of composting plants, including emissions of pollutants to air/water/soil, emissions of odours and energy consumption, and the quality and safety of the product (e.g., control of pathogens in compost), also monitoring potential changes in the microbial communities in presence of compostable materials;

- include a task for the project to select ad hoc performance parameters to define the best practices of industrial composting plants, ensuring the full biodegradation of compostable packaging;

- describe how the project will deliver a collection and assessment of the best practices of industrial composting, at EU and global level, ensuring the full biodegradation of compostable packaging , and will individuate promising innovation, e.g., microbial bioaugmentation strategies to improve composting performances in a range of conditions, to generate high quality compost, and/or to biodegrade pollutants commonly present in compost waste (i.e., microplastics);

- include a task for the project to provide recommendations towards the harmonization of EU industrial compositing processes and conditions, ensuring the full biodegradation of compostable packaging sustainably and safely and delivering safe and sustainable compost, as well as recommendations on improving the environmental performances of such plants, in terms of emissions of pollutants to air/water/soil and of odours.

International cooperation and multi-actor approach, including the involvement of waste managers in municipalities, are encouraged.

HORIZON-CL6-2025-01-CIRCBIO-14: Reconstructing areas affected by conflicts: the role of the bio-based solutions

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 8.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Technology Readiness Level	Activities are expected to achieve TRL 3-5 by the end of the project – see General Annex B. Activities may start at any TRL.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [126].

Expected Outcome: Successful proposals should contribute to European policies, in particular the European Green Deal, and the bioeconomy strategy, particularly as relevant to the bio-based sector, as well offer synergies with the strategic objective of nature/biodiversity restoration. They should deliver on the following impacts of this Destination: "*innovative circular and bio-based materials, products, processes and value chains developed for the consumers and industry, replacing unsustainable alternatives and (...) promote the optimised use of sustainable bio-based resources for greater efficiency*", "*large-scale diffusion of social and technological innovation across circular and bioeconomy sectors within planetary*

[126] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

boundaries thanks to innovative climate-neutral, circular, bio-based and nature-based solutions[127]", and "*contributing to ensure that all ecosystems are restored, resilient, and adequately protected*". They should help improve European international commitments and outreach, including actions directed at the future EU enlargement and the EU's international partnerships and humanitarian aid.

Project results are expected to contribute to all of the following expected outcomes:

- advanced mapping and assessment of local problems and needs and the opportunities and synergies of both bio-based innovation and of nature-based solutions, for reconstruction of areas affected by conflict;
- enhanced and more rapidly accessible uptake and community co-creation of more sustainable bio-based solutions, aimed at restoration efforts; promoting the 'build back better and greener' concept, at all government levels and by different stakeholders;
- enhanced understanding and engagement of the policymakers and society stakeholders of the role of bio-based innovation, at relief efforts, underpinned by principles of scientific excellence, sustainability, circularity and inclusiveness.

Scope: The recent man-made conflicts, some of which are taking place at or near the EU borders, in particular the unprovoked and illegitimate war of aggression of Russia on Ukraine, and the humanitarian catastrophe in Gaza, are causing not only tragic loss of human life and human suffering, but also serious environmental degradation, across ecosystems, terrestrial and aquatic, and in consequence biodiversity loss. Beyond the EU's borders, conflicts and fragility also persist where communities are affected by recurring conflicts with no real efforts to reconstruct, much less to build back better and greener. In this context, the options for the reconstruction process offered by the innovative bio-based solutions should be explored and seized. There is also a clear urgency to assess the resilience of solutions, map and deploy the remedies arising at the from both bio-based innovation and from nature-based solutions to address the reconstruction of such areas, both rural, coastal and urban, to promote the 'build back better and greener' concept.

The action covers developing practical solutions to achieve reconstruction efforts and strategies for restoring and 'renaturing' destroyed areas, made possible by bio-based innovation (including, i.e. the role of biotechnology, digital solutions, or bio-based (construction materials), taking into account the circular and cascading use of biomass principles, local valorisation of underutilised biological residues, using nature-based solutions for their potential for bringing back biodiversity and restoring areas degraded or destroyed by conflicts, and overall, more sustainable and more environmentally-friendly management of biological resources. The aspect of the disaster risk reduction can be also included, if relevant. Covering the potential use of the bio-based innovation and nature-based solutions and their interplay in the humanitarian relief sphere and preparing for the deployment of concrete and human-centric applications is strongly encouraged.

[127] Nature-based solutions - European Commission (europa.eu)

Synergies with ongoing projects are encouraged, e.g. those funded under topics HORIZON-CL6-2023-CIRCBIO-01-06: Bio-based solutions for humanitarian applications or HORIZON-CL6-2023-GOVERNANCE-01-05: Revitalisation of European local (rural/peri-urban) communities with innovative bio-based business models and social innovation, upcoming topics (e.g. HORIZON-CL6-2025-01-ZEROPOLLUTION-04: Environmental biotechnology applications in service of restoration of polluted ecosystems, as well as with the actions supported under the New European Bauhaus (NEB) Facility. In addition, synergies with the EU Mission on Climate-neutral and Smart Cities, and with LIFE projects, are encouraged, notably the ones which contributed to the Ukraine Green Recovery Conference [128].

Proposals should include a task dedicated to sharing methodologies and findings with projects funded under this topic and with similar recent or ongoing projects (some of which are referenced in the topic).

Proposals should take into account the findings of the Global Resources Outlook 2024 of the International Resource Panel.

Social Sciences and Humanities aspects, including gender dimension, multi-actor approach (MAA) and social innovation are mandatory elements to be covered, to ensure an inclusive engagement of all key stakeholders.

The action will provide recommendations to policymakers and EU and international relief organisations, to develop any replication actions, including in the context of the possible EU accession process, if relevant. International cooperation is strongly encouraged.

Innovating for blue bioeconomy and biotechnology value chains

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-01-CIRCBIO-15: Bioprospecting and optimised production of marine/aquatic natural products in the omics & artificial intelligence era

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions
Technology	Activities are expected to achieve TRL 6-7 by the end of the project –

[128] Ukraine Green Recovery Conference - European Commission (europa.eu)

Readiness Level	see General Annex B. Activities may start at any TRL.

Expected Outcome: Successful proposals should contribute to reaching the impacts of this destination, and European policies, in particular the European Green Deal, the bioeconomy strategy, the new approach for a blue economy. They should help harnessing the full potential of marine and freshwater biological resources and blue biotechnology is leveraged to deliver societal benefits, such as greener more environmentally-friendly industrial products and processes, support public health and environmental conservation.

Project results are expected to contribute to all of the following expected outcomes:

- demostrating the broadened range of more sustainable and more accessible marine/aquatic natural products with high value applications
- demonstrating advances in the development and/or application related computational tools such as AI etc. in the biodiscovery pipeline;
- increased commitment to biodiversity preservation and conservation through enabling bioproduction routes (biosynthesis, fermentation, culturing) of natural products, ensuring that the biodiscovery of new compounds does not lead to unsustainable harvesting from the wild and a sustainable use of genetic diversity;
- awareness raised and creation of a better framework for blue biotechnology innovation and uptake through broad stakeholder engagement, supporting the EU biotechnology and biomanufacturing initiative.

Scope: The immense diversity of marine micro- and macro-organisms and their communities represents a rich and largely unexplored reservoir of natural products and their base ingredients. To survive in habitats raging from deep-sea sediments to polar regions or shallow waters, marine organisms have developed a broad spectrum of structures, defence mechanisms and metabolic pathways resulting in natural products with vast chemical diversity and wide range of biological activities. The biological interplay between interspecies communities, e.g. symbiotic or defence mechanisms may officer attractive leads and is also in scope. For the coverage of terrestrial bioprospecting see parallel topic HORIZON-CL6-2025-01-CIRCBIO-09: Bioprospecting and optimized production of the terrestrial natural products: new opportunities for bio-based sectors.

The action covers modern biodiscovery approaches including, *in-silico* bioprospecting and the full integration of digital methods (e.g., statistics, algorithms, AI, data science, modelling, digital twins) with bioinformatics and biotechnological tools, which make possible the identification and production of bioactive natural compounds with potential high-value application in sectors such as pharmaceuticals, nutraceuticals, cosmetics, food/feed additives, agrochemicals, etc. In the context of this topic, natural products are understood as biologically active products such as secondary metabolites as well as enzymes derived from marine/aquatic organisms.

Targeted marine/aquatic biological resources can be sourced from their natural environment (in-situ) and/or from open access and public/private collections and gene-banks (ex-situ).

The aim is to broaden the range of novel compounds, lowering the production costs, quicken the development pipeline, and enable more innovation for the industrial operators, with clear-cut benefits for the final users. Projects will have a strong industry drive and include demonstration activities to proof the techno/economic viability of the production of the proposed marine natural product(s) and/or the biodiscovery platform tools combining digital and biotechnologies.

The scope covers relevant steps of the biodiscovery process such as isolation and characterization of microbial strains and consortia, genomic characterisation, creation of natural product libraries, bioactivity screening, natural products isolation and purification, chemical structure elucidation or optimized production pathways via biotechnology and biomanufacturing approaches in suitable industrial facilities (bioreactors/biorefineries, e.g. for microbial production), synthetic biology or gene editing. The integration of digital approaches (AI, computer algorithms such as machine learning, modelling, data science etc) on optimizing the biodiscovery processes such as identification of biosynthetic gene clusters and metabolic pathways, enzyme selection, combinatorial assembly and annotation of high-throughput DNA sequencing data, bioactivity prediction, elucidation of the structure of compounds, experimental design etc is in scope. Safety to the end-users and operators needs to be assessed and guaranteed.

Ensure avoiding overlaps to past or ongoing topics (e.g. projects funded under the topic HORIZON-CL6-2022-CIRCBIO-02-05-two-stage: Life sciences and their convergence with digital technologies for prospecting, understanding and sustainably using biological resources, topic HORIZON-CL6-2023-CIRCBIO-01: Broadening the spectrum of robust enzymes and microbial hosts in industrial biotechnology), consider synergies to parallel actions (e.g. HORIZON-CL6-2025-01-CIRCBIO-09: Bioprospecting and optimized production of the terrestrial natural products: new opportunities for bio-based sectors as well as funded under the topic Horizon2020-FNR-11-2020 - Prospecting aquatic and terrestrial natural biological resources for biologically active compounds [129]). The action is expected to establish links with relevant projects funded under the EU Mission Restore our Ocean and Waters.

The action needs to guarantee biodiversity preservation and comply with applicable EU regulations and international rules on access to biological resources, their sustainable use and the fair and equitable sharing of benefits from their utilisation, including the Nagoya protocol and the agreement on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ). This can be addressed, inter alia, by covering propagation of biological material, including by in vitro cultivation, as well as by biotechnology approaches. A life-cycle assessment should be carried out in order to evaluate the environmental, economic and social impact of the developed product(s). Proposals should contribute to the understanding of potential trade-offs inherent in the exploitation of ecosystems, their potential to deliver ecosystem services and ideally provide solution

[129] https://cordis.europa.eu/programme/id/H2020_FNR-11-2020/en

approaches to address these trade-offs. Potential risks to the environment, ecosystems and society as well as benefits should also be assessed under this topic.

Safeguarding and sustainably innovating the multiple functions of EU forests

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-01-CIRCBIO-16: European partnership: Forests and Forestry for a Sustainable Future

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 30.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 30.00 million.
Type of Action	Programme Co-fund Action
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The funding rate is up to 30% of the eligible costs. Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. As financial support provided by the participants to third parties is one of the primary activities of the action in order to be able to achieve its objectives, the EUR 60 000 threshold provided for in Article 204(a) of the Financial Regulation No 2018/1046 does not apply. The maximum amount to be granted to each third party is EUR 10 000 000 for the whole duration of Horizon Europe
Total indicative budget	The total indicative budget for the duration of the partnership is EUR 70 million.

Expected Outcome: In line with the European Green Deal and its vision for a climate-neutral, prosperous economy by 2050, and the EU Forest Strategy for 2030, this partnership will mobilise research and innovation to accelerate the transition to a sustainable forest bioeconomy to enhance forest sector value, biodiversity, and climate resilience.

The partnership will deliver knowledge and solutions that will support the implementation of several other European Green Deal strategies and initiatives, notably: the EU's 2050 climate neutrality target, the EU forest strategy for 2030, the EU biodiversity strategy for 2030, the

EU bioeconomy strategy, the European industrial strategy, circular economy action plan, the Land Use, Land Use Change and Forestry Regulation (LULUCF), the Nature Restoration Law and the proposal for a Regulation on a forest monitoring framework.

The expected outcomes of the topic will contribute to impacts of various Destinations under Cluster 6 of Horizon Europe, notably Destination 'Circular economy and bioeconomy sectors'.

The partnership is expected to contribute to all the following expected outcomes:

- a robust European R&I system for forests and forestry, co-created through complementary forest research agendas across the EU Member States and Associated Countries, leading to strengthened collaborations, enhanced understanding of forest ecosystem resilience, and reinforced role of the EU in the international forest agenda;
- stronger consistency between social, environmental and economic dimensions of forests and forestry, and improved knowledge of their interplay is established;
- increased knowledge of the functioning and the role of forests in climate action and ecosystems protection and restoration and improved guidelines on innovative and adaptive forestry regimes for different European regions are available to reach climate mitigation and adaptation, biodiversity, and bioeconomy objectives;
- better understanding of the time perspective and accelerating climatic change is available for assessing the role of forests in achieving climate and biodiversity objectives. New knowledge and tools enable timely, consistent, and comprehensive monitoring of forest condition, biodiversity, resilience, and productivity;
- new knowledge, methods, and processes to support major transitions (including increased carbon removals and the restoration of forest ecosystems) and innovations in the sustainable forest-based bioeconomy are developed towards higher added value;
- better understanding of the trends and bottlenecks in the emergence of new green forestry business models, including carbon farming, ecotourism and payments for environmental services is established.

Scope: As the main instrument for public organisations in EU Member States and Associated Countries to collaborate in the forest-based sectors, the partnership will facilitate concerted research and innovation actions on Europe's diverse forestry challenges, with the participation of a wide range of stakeholders, thus reducing fragmentation of related R&I.

The partnership should mobilise key partners and stakeholders, including ministries in charge of research, forest-related areas, and environment, funding agencies, research performing organisations, research infrastructures, foresters, industry, NGOs, international networks, etc.

The partnership should align with transnational research and innovation activities, as defined in its Strategic Research and Innovation Agenda (SRIA) and address all the following:

- identify R&I priorities to strengthen alignment of European and national research, development and innovation programmes and to increase the impact of policy relevance;
- develop new knowledge and innovative solutions for a systemic and inclusive approach to forest and forestry challenges, looking for synergies in complementary actions and trade-offs between competing actions;
- reinforce the European collaboration on improving the understanding of resilience of forest ecosystems and forest-based sectors, and their underlying constituents to multiple hazards, driven by ongoing climate change and other human made impacts as a basis for adaptative and mitigation measures;
- strike an optimal balance in a range of forest functions and related societal values, including views of different stakeholders, thus responding to societal expectations while supporting the forest industry in a transition towards a greener and circular bioeconomy;
- focus on the multifunctional role and the sustainable management of forests as well as the interplay between forestry biomes, regimes and the continuous provision of biodiversity and ecosystem services, and resilience to climate change (drought, fire, pests and diseases, compound and cascading risks etc.) as well as climate adaptation;
- consider cascading use of forest products and higher added value, supporting business and social enterprise development (creating employment and quality job opportunities and diversified revenue for foresters) in rural areas and industrial development in crucial sectors such as sustainable forest-based industries (traditional and emerging branches), construction, transport, and energy;
- stronger focus on the processes that lead to transformations toward sustainability in the forest-based and bioeconomy sector at European level, which will also be key to the forest industry´s long-term competitiveness, in Europe and globally;
- ensure forests and forest management monitoring while seeking to better anticipate future developments, provide early alert on disturbances (e.g., pest outbreaks and climate change driven impacts), and assess the impact of forestry practices on forest health and conservation and local communities;
- increase and strengthen international cooperation to develop a critical mass in relation to the global challenges faced including climate mitigation and imported deforestation.

The partnership is open to all EU Member States, as well as to Countries Associated to Horizon Europe. Partners are expected to provide financial and/or in-kind contribution, in line with the level of ambition of the proposed activities. The partnership should be open to include new partners over its lifetime. Its governance should allow for engaging a broad range of stakeholders, together with the full members of the partnership. Guidelines, standards, and legislation in the field should be taken into consideration, to facilitate the marketing of the methods and products developed in the partnership.

The partnership should allocate resources to cooperate with existing projects, initiatives, platforms, science-policy interfaces, and/or institutional processes at European level, and at other levels where relevant to the partnership's goals.

To ensure that all work streams are coherent and complementary, and to leverage knowledge and innovation investment potential, the partnership is expected to foster close cooperation and synergies the Horizon Mission 'A Soil Deal for Europe', 'Adaptation to Climate Change', and 'Climate-neutral and Smart Cities', with the existing European Partnerships Circular Bio-based Europe, Biodiversa+, Water4All, Agroecology, Built4People, Safe & Sustainable Food Systems, and with other relevant future partnerships, in particular the project that may follow from the topic "HORIZON-CL6-2024-GOVERNANCE-02-01: European Partnership of Agriculture of Data" .

Cooperation with the JRC may be envisaged, in particular for actions related to monitoring forests and forest management.

The partnership should allocate resources to cooperate with existing projects, initiatives, platforms, science-policy interfaces, and/or institutional processes at European level, and at other levels where relevant to the partnership's goals.

Proposals should pool the necessary financial resources from the participating national (or regional) research programmes with a view to implementing joint calls for transnational proposals resulting in grants to third parties. The partnership will provide financial support to third parties as one of the means to achieve its objectives. To explore the full range of financing options available under Horizon Europe, the general annexes of the main Work Programme setting out the general conditions applicable to calls and topics for grants should be considered.

To achieve the international cooperation objectives, and given the global dimension of forests, collaboration with strategic third country partners with proven added value in the field of forests and forestry is strongly encouraged. In particular, the participation of legal entities from international countries and/or regions, including those not automatically eligible for funding, is encouraged in the transnational co-funded calls and/or in other activities of the partnership. Cooperation with international organisations may be considered.

Applicants are expected to describe in detail how they would carry out this collaborative work in practice.

Efforts should be made to ensure that the data produced in the context of this topic is FAIR (Findable, Accessible, Interoperable and Re-usable).

This topic should involve the effective contribution of social sciences and humanities disciplines.

In order to enhance the societal impact of the activities, the approach should empower citizens to contribute to the co-design/co-creation/co-assessment of research and innovation agendas/contents/outcomes.

Cross-articulation with the other data spaces, and notably with the European Open Science Cloud should be foreseen, exploiting synergies and complementarities of the different approaches.

The Commission envisages to include new actions in future work programme(s) to continue providing support to the partnership for the duration of Horizon Europe.

The expected duration of the partnership is seven to ten years.

Destination - Clean environment and zero pollution

This destination serves the zero-pollution ambition for a toxic-free environment towards the 2030 zero pollution targets for air, water and soil and the EU's chemicals strategy for sustainability. R&I under this destination will contribute to reach the 2030 targets for pollution reduction, by pursuing the precautionary principle and an effective 'zero pollution hierarchy'[1], prioritising preventive measures.

Proposed activities related to ocean and seas will be aimed at the implementation of the zero pollution action plan within the scope of the Marine Strategy Framework Directive and the EU water legislation.

The destination will also support the implementation of the revised legislation on industrial emissions and air quality, by promoting innovative monitoring and modelling systems. It will support sustainable solutions to prevent and reduce pollution from agriculture, and address pollution stemming from food and drink industries, in line with the nine specific objectives of the common agricultural policy (CAP), the farm to fork strategy and the Food 2030 initiative.

The development of innovative solutions for a transformative change in bio-based industrial sectors towards a zero pollution approach is also in scope of this destination, in line with the principles of the bioeconomy and the industrial carbon management strategies and the climate law.

R&I initiatives within this destination will contribute to the objectives of the EU biodiversity strategy for 2030, the Nature Restoration Law, by addressing pollution as one of the main drivers of biodiversity loss.

Proposals for topics under this destination should set out a credible pathway to "**achieve a clean environment, ensure water resilience, and enable the transformative change necessary to reduce air, water and soil pollution to levels no longer considered harmful to health and natural ecosystems, while respecting planetary boundaries**". More specifically, they should contribute to one or several of the following impacts:

- enhanced scientific capacity and innovative solutions for detecting and characterising pollution sources, pathways, distribution, and cumulative impacts, including pollutants of great and emerging concern, assisted by AI domain and improved environmental observation and modelling systems, resulting in cleaner air and healthier ocean, seas and waters;

- safe and sustainable by design bio-based (Commission Recommendation (EU) 2022/2510) solutions are developed for and by the bio-based industries, also through innovative biotechnology and biomanufacturing techniques, to contribute to climate neutrality and replace harmful chemicals in industrial bio-based processes and products;

- sustainable bio-based and nature-based solutions will be developed and tested to remediate polluted environments;

- food systems adopt the zero pollution ambition, preventing and reducing pollution in water, air, and soil;
- farmers are empowered to make informed management decisions on water, carbon, nutrients and greenhouse gas balances for environmental and economic sustainability, preventing and reducing pollution from agriculture.

The expected impacts from actions under Destination 4 will be maximised by the complementarities and synergies with other instruments within Horizon Europe and other programmes, like co-funded partnerships Water security for the planet (Water4All), Sustainable food systems for people, planet and climate, Sustainable Blue Economy, Agroecology and Biodiversa+; and the Horizon Europe Missions 'A Soil Deal for Europe', 'Restore our Ocean and Waters by 2030' and 'Climate-Neutral Smart Cities'. Collaboration with the institutionalized partnership Circular Bio-based Europe Joint Undertaking will help industrial bio-based systems to replace harmful processes and substances, while fostering the use of sustainable natural resources.

Collaborations with Destinations 1 and 5 will enhance understanding of ecosystem adaptation and resource management under climate change, while addressing freshwater and groundwater challenges.

To maximise the impacts of R&I under this Destination, international cooperation is encouraged.

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-01-ZEROPOLLUTION-01: Innovative and advanced monitoring and modelling systems for revised air quality policies

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 10.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. If projects use satellite-based earth observation, positioning, navigation

	and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).

Expected Outcome: A successful proposal will contribute to the impact of this Destination related to enhanced scientific capacity and innovative solutions for detecting and characterising pollution, thus contributing to the zero pollution objective for cleaner air.

Project results are expected to contribute to all the following expected outcomes:

- public authorities and other relevant stakeholders (e.g., researchers, NGOs and patient organisations) have access to better and cost-effective solutions to detect, measure, monitor and assess air pollution, including its sources and impacts, as well as pathways for their integration into operational atmospheric monitoring services and networks;
- enhanced and more rapidly accessible air quality data and information support science-based decision-making, and policy development at local and national levels, ultimately leading to more effective air quality measures aligned with the revised EU air policy, as well as to more efficient use of EU, public and private funding for improving air quality;
- increased public awareness and more accurate information of local air quality issues lead to healthier behaviours of citizens, particularly vulnerable groups and sensitive populations (e.g., during air pollution peak periods), including by supporting better evidence-based access to justice related to negative effects of air pollution.

Scope: The revised Ambient Air Quality Directive (AAQD) complements the European Green Deal and is a key action in the Commission's zero pollution action plan. It seeks to align EU air quality standards more closely with WHO recommendations and to better support national and local authorities in achieving cleaner air through strengthening air quality monitoring and modelling and improving air quality plans. For these objectives, several challenges will need to be overcome in the coming years, particularly when it comes to the improvement of accuracy, comparability and real-time nature of monitoring and modelling to assess air quality in Member States and Associated Countries referring to already regulated air pollutants facing stricter limit values (main pollutants include PM10, PM2.5, NO2, SO2, benzene, and O3) and to air pollutants of emerging concern (such as ultra-fine particles, black carbon, volatile organic compounds, ammonia, heavy metals) and their source apportionment. The proposals are expected to:

- develop or improve cost-effective monitoring and modelling tools, approaches and methods for different types of well-known and emerging air pollutants and pollution sources, addressing the most urgent needs in measurement accuracy and dispersion mapping, in support of the implementation of the revised AAQD.
- develop recommendations for designing optimal monitoring networks, considering relevant aspects of different spatial locations (rural, urban, major hotspots), combining traditional reference measurements and innovative measurement techniques, including

Artificial Intelligence (AI) and the use of innovative low-cost sensors. Recommendations should consider also funding challenges and opportunities.

- improve the processing and integration of in situ, ground-based remote sensing and satellite (e.g. Sentinels) observations, and air quality numerical models utilising various methods, including AI algorithms and finite elements modelling.

Where relevant, activities should build and expand on the results of past and ongoing research projects and initiatives with a relevant air quality monitoring and/or modelling component to share experiences, reach synergies and avoid duplication. These could include, but are not limited to, Horizon 2020 and Horizon Europe projects (potentially those funded under HORIZON-CL6-2024-GOVERNANCE-01-6), research infrastructures (for example, ACTRIS ERIC), as well as relevant LIFE integrated projects for clean air. Proposed activities should, where possible, build on results of and cooperate with AQUILA and FAIRMODE communities. Furthermore, this topic is part of a coordination initiative between ESA and the European Commission on Earth System Science. The proposals should articulate how they will coordinate with current and future actions funded by ESA's FutureEO programme within ESA atmospheric science cluster.

The integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

HORIZON-CL6-2025-01-ZEROPOLLUTION-02: Environmental impacts from the production of agricultural crops for bio-based industrial systems

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 2.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 2.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the

	Research and Training Programme of the European Atomic Energy Community (2021-2025). [130].

Expected Outcome: Successful proposals will support the implementation of the zero pollution action plan through the deployment of safe and sustainable by design bio-based solutions, including the supply of sustainable biogenic carbon in line with the industrial carbon management strategy.

Project results are expected to contribute to all the following expected outcomes:

- bio-based industries and stakeholders along the supply chain improve their knowledge of the environmental impacts on air/water/soil quality, biodiversity and climate from the production of primary biological resources for industrial bio-based systems
- public authorities, farmers, advisors and economic actors in the bio-based industrial value chains have access to best practices to produce crops for industrial uses sustainably.

Scope: The assessment of environmental sustainability of biological resources production and trades in the bio-based industrial systems is still a challenge. There is a lack of information and environmental assessment, including the indirect land use change (ILUC) effects and possible impacts on the ecosystems, related to primary biomass[131] grown for bio-based value chains.. Industrial bio-based systems within the scope of this topic include those for the production of bio-based chemicals/materials/products excluding food/feed, biofuels/bioenergy. The scope of the topic focusses on the environmental impacts from biomass production, not covering the full life cycle of the uses of such biomass, nor the valorisation of waste and residues.

Proposals should:

- identify the types of primary agricultural crops currently produced for bio-based products within the scope of this topic at EU and Associated Countriesscale;
- include a task for the project to collect data and figures on volumes and geographical distribution of the identified primary agricultural crops traded within the EU and Associated Countries, and from outside the EU towards the EU and Associated Countries. In the cases of primary agricultural crops grown in the EU and Associated Countries, collect data on type of land used and of pedo-climatic zones, cultivation systems and agronomic practices (crop diversification, intercropping, cultivation of catch-crops, etc);

130 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

131

- analyse the environmental impacts of the identified primary agricultural crops produced for industrial purposes and identified at points 1. The analysis should be based on literature data;

- include a task for the project to assess quantitatively such environmental impacts addressing, but not limiting to, the following environmental categories: i) GHG emissions/savings and carbon footprint, including temporary carbon removals; ii) emissions to air/water/soil from nitrogen and phosphorous based fertilisers; iii) land use and land use change and its related impact on land carbon sink capacity; iv) water use; v) biodiversity and ecosystem services; vi) energy consumption, vii) any other aspects of air/water/soil environmental quality. The quantitative assessment should consider the range of climatic and land conditions, for each primary agricultural crop, due to the geographical distribution. It should be based on data from literature and stakeholders' consultations. Based on such assessment, individuate best practices and the means to share them among concerned stakeholders

Multi-actor approach and international cooperation are encouraged. The integration of the gender dimension (sex and gender analysis) in research and innovation content is not mandatory requirement. Proposals should include a task dedicated to sharing methodologies and findings with similar recent or ongoing projects, e.g., MIDAS and MarginUp funded under the topic HORIZON-CL6-2022-CIRCBIO-01-02-Marginal lands and climate-resilient and biodiversity-friendly crops for sustainable industrial feedstocks and related value chains.

HORIZON-CL6-2025-01-ZEROPOLLUTION-03: Substances of concern and emerging pollutants from bio-based industries and products: mapping and replacement

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: Successful proposals will support the implementation of the zero pollution action plan, the chemical strategy for sustainability and the revision of the Industrial Emissions Directive through the deployment of safe and sustainable by design bio-based solutions, to provide their carbon removal capacity in a sustainable way.

Project results are expected to contribute to all of the following expected outcomes:

- stakeholders of bio-based value chains, including in public procurement, researcher centres, industries, public administrations, final consumers, etc., gain awareness on the releases of hazardous substances, emerging pollutants and substances which are persistent and liable to bio-accumulate in ecosystems from bio-based industrial processes and from bio-based products;

- bio-based industries operators and customers improve their knowledge and use of safe and sustainable bio-based alternatives replacing hazardous substances, to achieve healthier air, water and soil.

Scope: Preventing hazardous emissions at source is key to reach the 2030 pollution reduction targets, including substances of concern, very high concern and emerging pollutants (e.g., PFAS and EDC) as defined by REACH regulation. Bio-based innovative solutions, also in line with the recent initiative on biotechnology and biomanufacturing and the industrial carbon management strategy, should be designed to provide the solutions to replace hazardous substances in industrial assets and in final products and materials. Bio-based materials and products within the scope of this topic do not include food/feed, biofuels and bioenergy.

The proposals should:

- track presence of substances of very high concern and of concern, emerging pollutants and substances which are persistent and liable to bio-accumulate in ecosystems emitted from a selection of bio-based materials and products. This includes substances released in all the life phases of bio-based materials and products, during their use and their end-of-life. Evaluate the exposure of targeted end users to the substances, including integrating the gender dimension (sex and gender analysis) and vulnerable groups;

- include a task for the project to perform a full risk assessment of the substances emitted from the selected bio-based materials and products, also assessing the impacts on affected ecosystems and the risk for biodiversity loss;

- track presence of substances of very high concern and of concern, emerging pollutants and substances which are persistent and liable to bio-accumulate in ecosystems, emitted from a selection of industrial bio-based systems;

- include a task for the project to identify and improve a set of bio-based safe and sustainable by design (Commission Recommendation (EU) 2022/25) and circular solutions, to replace hazardous substances and to increase the resources efficiency, both at the level of industrial processes and in final materials and products selected at points 1 and 3. The number of bio-based solutions provided is not pre-defined. The task should include the assessment of the reduction of substances of concern and emerging pollutants, derived from the substitution;

- describe the collection of recommendations and best practices to replace substances of concern with safe and sustainable by design bio-based alternatives.

Proposals should include a task dedicated to sharing methodologies and findings with all projects funded within this topic. Moreover, the projects should collect and analyse the outcomes from past and ongoing projects under EU programmes, including the Circular Bio-based Europe Joint Undertaking, addressing the challenges in the scope of this topic.

This topic requires the effective contribution of SSH disciplines, including gender studies, especially in the task on risk assessment. Multi-actor approach is mandatory.

For depollution to achieve zero pollution in large industrial installations, please refer to the INnovation Centre for Industrial Transformation and Emissions (INCITE) (https://innovation-centre-for-industrial-transformation.ec.europa.eu/).

HORIZON-CL6-2025-01-ZEROPOLLUTION-04: Environmental biotechnology applications in service of remediation of polluted ecosystems

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 8.00 million.
Type of Action	Research and Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 5 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: Successful proposals will support the implementation of the zero pollution action plan addressing the remediation of polluted ecosystems through bio-based and nature-based solutions.

Project results are expected to contribute to all the following expected outcomes:

- engage public authorities, scientists and operators in the protection and restoration of ecosystems;
- integrate, in local plans for ecosystems restoration, bio-based and nature-based solutions able to remediate degraded soil, sediment, surface water and groundwater affected by pollutants and threats such as salinization;
- take advantage of innovative tools enabled by digital innovation, including AI, for the remediation of pollution in emergency conditions.

Scope: Degradation of soil, sediment and water due to anthropogenic causes may result from continuous exposure to pollution and/or unsustainable exploitation, but also from sudden accidents. Degradation may be exacerbated by negative effects of climate change or other threats (e.g., heat waves, fires, floods and landslides, soil/coastal erosion, ocean acidification, etc.). Moreover, in case both the exposure of soil, sediment and water to degrading factors and their vulnerability are high, whereas their resilience is low, the degradation may take the dimension of a disaster. The scope of this topic is the remediation of contaminated soil, sediment and water from pollutants, such as hazardous chemicals, pharmaceutical and waste, including litter and plastics, and their further restoration, including in case of accidents and disasters driven by anthropogenic activities and extreme environmental events. The results from projects funded under this topic will contribute to one of the restoration measures included in the Nature Restoration Law to (Annex VII, point (32) *Stop, reduce or remediate pollution from pharmaceuticals, hazardous chemicals, urban and industrial wastewater, and other waste including litter and plastics as well as light in all ecosystems*).

Proposals should:

- select and analyse a set of case-studies of degraded soil, sediment and water affected by pollution and contaminants. This could include cases where the degradation is exacerbated by climate change or biodiversity loss or other natural or anthropogenic events;

- include a task in the project to develop bio-based solutions for the environmental remediation of the degraded soil, sediment and water in the selected case-studies, driven by biotechnology applications, and the integration of such bio-based solutions with nature-based solutions. The task should include the assessment of the alignment with the precautionary principle, environmental sustainability and efficiency of the developed solutions in remediating soil, sediment and water, also addressing biodiversity loss and the functional state of the ecosystems. Moreover, it should evaluate the improvement of resilience to the impacts of climate change on the affected ecosystems, due to the applications of the developed solutions;

- include a task in the project on the development of models enabled by digital innovation, including based on artificial intelligence, for the optimization of remediation approaches, also in case of emergency facing disaster sand extreme environmental events like fires, drought, flood, etc.;

- identify and assess the economic, social and safety risks and benefits of the remediation activities in the selected case-studies, in particular in terms of circular economy and of the reduction of the risks for human health resulting from exposure to the contaminants (e.g., vulnerable populations, integrating the gender dimension). The risk reduction should take into consideration the bioavailability and mobility of the contaminants, including heavy metals and organic chemicals (i.e., PFAS, PAHs, pesticides, etc.);

- include a task in the project to deliver the overall environmental, economic, social and safety risk assessment for the developed integrated bio-based and nature-based solutions.

This topic requires the effective contribution of SSH disciplines, including gender studies, especially for the risk assessment on human health. Multi-actor approach and international cooperation are encouraged.

Proposals should include a task dedicated to sharing methodologies and findings with all projects funded under this topic and with similar recent or ongoing projects, e.g., those funded under the topic HORIZON-CL6-2021-ZEROPOLLUTION-01-10: Environmental services: improved bioremediation and revitalization strategies for soil, sediments and water, or under the topic HORIZON-CL6-2023-ZEROPOLLUTION-01-6: Biosensors and user-friendly diagnostic tools for environmental services.

HORIZON-CL6-2025-01-ZEROPOLLUTION-05: Towards a comprehensive European strategy to assess and monitor aquatic litter including plastic and microplastic pollution

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [132].

[132] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Expected Outcome: A successful proposal will contribute to the impacts of this Destination related to pollution in the ocean, seas and waters.

Project results are expected to contribute to all of the following expected outcomes:

- harmonised and coordinated approaches across the EU for monitoring aquatic litter in European freshwater and marine environments;
- improved knowledge and FAIR data enabling a comprehensive assessment of litter sources, pathways, degradation, spatial distribution including on the seabed, hotspots and areas of accumulation, leakage, and transport at EU scale and at basin level;
- implementation of optimised, validated, harmonised, cost-effective, and pan-European monitoring strategies for freshwater, coastal and marine environments, which are taken up by relevant environmental authorities in the EU.

Scope: The monitoring and assessment of litter including plastic and microplastic pollution in Europe's marine and freshwater environment remains fragmented and diverse, although progress has been made under the Marine Strategy Framework Directive (MSFD) for monitoring quantities and impacts of marine litter and harmonised guidance for monitoring has been produced[133]. However, large discrepancies between countries, marine regions, litter types and environmental compartments can still be observed and large data and knowledge gaps persist on the sources, pathways, distribution and concentrations of litter in marine and freshwater, which are impeding comprehensive assessments of the extent of litter pollution including microplastics in EU waters. Different approaches for assessing and monitoring litter pollution in freshwater and marine environments are further hindering such assessments.

Despite the large amount of literature and recent scientific advancements to develop reliable and harmonised analytical research methodologies, guidance, protocols and reference materials, pan-European approaches and strategies that set out what to measure, where to measure, when to measure and how to measure are missing.

Actions should in particular inform monitoring and assessments, including threshold setting, under the Marine Strategy Framework Directive and more broadly support its implementation, the implementation of the Water Framework Directive, the zero pollution action plan, the evaluation and possible revision of the Single Use Plastics Directive as well as EU initiatives on microplastics (such as under REACH and reduction of plastic pellets releases). Actions will also contribute to the planned Global Agreement to End Plastic Pollution and the UN Decade of Ocean Science for Sustainable Development.

Proposals should demonstrate how they will contribute significantly at EU level to:

- enhanced data acquisition and effective use of available data from source-to-sea including lake, riverine, coastline, sea surface and seabed monitoring of (plastic) litter including (different types of) microplastics, making use of diverse data sources (incl.

133 https://mcc.jrc.ec.europa.eu/documents/201702074014.pdf

data collected by citizen science initiatives) and new technologies to improve quantitative knowledge on pollution sources, pathways, spatial distribution and accumulation zones, including on the seabed, leakage and transport at EU scale and at basin level;

- development of scientific approaches as well as environmentally relevant reference materials and matrices needed to design harmonised methods for detecting, identifying, classifying, and quantifying plastic and microplastic pollution in realistic conditions;
- improved tools and methodologies for efficient and where possible autonomous sampling, developing rapid and reliable analytical methods and imaging techniques for seabed macro litter and monitoring of microplastic pollution to address policy needs;
- development of analytical methods for detecting and monitoring nano plastic particles in aquatic environments;
- development, improvement and implementation of fit-for-purpose, optimised, validated, harmonised and cost-effective monitoring strategies for freshwater, coastal and marine environments and collaborative data collection across borders needs to be implemented on a sufficient scale to assess the problem;
- enable the uptake of monitoring data in large scale databases (e.g. the European Marine Observation and Data Network (EMODnet) and the European Digital Twin of the Ocean) following FAIR principles, to ensure public data accessibility and use and foster a comprehensive assessments of litter pollution at European level;
- strengthened cooperation between scientific institutions and relevant environmental authorities responsible for monitoring pollution in freshwater and marine environments at EU and national level, fostering competence in monitoring aquatic litter in the EU;
- support implementation of related EU policies, in particular baselines, threshold-setting and identification of changes in levels of plastic litter and microplastics in freshwaters and all coastal and marine compartments under the MSFD.

The action is expected to build on the work and engage with the Technical Group on Marine Litter under the Marine Strategy Framework Directive, which is co-led by the JRC. It should build on the outcomes and establish links with relevant projects, including projects funded under the EU Mission Restore our Ocean and Waters and its Mediterranean lighthouse (e.g. the projects PlasticPirates – Go Europe! [134], UPSTREAM [135], INSPIRE [136] and topic HORIZON-MISS-2025-03-OCEAN-02: A toolbox for public authorities to address marine plastics and litter from river-to-ocean), the EUROqCHARM [137] project and JPI Oceans microplastics projects.

134 https://cordis.europa.eu/project/id/101088822
135 https://cordis.europa.eu/project/id/101112877
136 https://cordis.europa.eu/project/id/101112879
137 https://cordis.europa.eu/project/id/101003805

The action should also contribute to regional and global efforts on monitoring plastic pollution in the ocean and waters, by building links with activities of relevant regional seas conventions, the International Council for the Exploration of the Sea (ICES) and contributing to the UN Decade of Ocean Science for Sustainable Development. Proposals should also building on and contribute to the GEO Blue Planet initiative and the Integrated Marine Debris Observing System (IMDOS) in cooperation with GOOS and UNEP. Proposals are encouraged to liaise with and consider the services offered by, where relevant, European research infrastructures[138].

International cooperation is encouraged, including with AAORIA partner countries. This topic is part of a coordination initiative between ESA and the European Commission on Earth System Science. The EC-ESA Earth System Science Initiative enables EC and ESA to support complementary collaborative projects funded on the EC side through Horizon Europe and on the ESA side through the FutureEO programme.

The integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

HORIZON-CL6-2025-01-ZEROPOLLUTION-06: Cumulative impacts of marine pollution on marine organisms and ecosystems

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: A successful proposal will contribute to the impacts of this Destination related to pollution in the ocean, seas and waters.

Project results are expected to contribute to all of the following expected outcomes:

- improved understanding of the interplay of different pollutants, their 'cocktail effect' and degradation pathways, on marine organisms and ecosystems;
- improved understanding of the risks and cumulative impacts of different forms of pollutants for the health of marine organisms and ecosystems and ultimately human health;

[138] The catalogue of European Strategy Forum on Research Infrastructures (ESFRI) research infrastructures portfolio can be browsed from ESFRI website https://ri-portfolio.esfri.eu/

- better understanding of the interplay of the triple planetary crises of climate change, biodiversity loss and pollution on marine life.

Scope: Marine pollutants cause harmful effects on marine species and wildlife, serious negative impacts on the structure and functioning of ecosystems, the goods and services they provide, and ultimately on human health and prosperity.

While there have been significant advances in understanding the effects of individual pollutants on marine life, the cumulative effects of different marine pollutants, including persistent organic pollutants (POPs), pharmaceuticals, per- and polyfluoroalkyl substances (PFAS), heavy metals and trace elements, micro- and nano plastics, nanomaterials, biodegradable products, microbiological contaminants, pesticides, fertilisers and nutrients, and the associated risks for marine life are not fully understood. The interplay of climate change (and the resulting effects of a warming and more acidic ocean) with pollutants including actual and predicted changes in their bioavailability, toxicity and water quality, need to be further examined including (gender-specific) implications for human health following a 'One-Health' approach.

R&I in this area is therefore expected to support the implementation of the Marine Strategy Framework Directive, in particular the assessments of the adverse effects of pollutants, including cumulative effects, on the health of species and habitats in line with Commission Decision (EU) 2017/848, the Water Framework Directive, the zero pollution action plan, the objectives of protecting and restoring ecosystems of the EU biodiversity strategy for 2030 and of the EU Nature Restoration Law, the evaluation and possible revision of the Single Use Plastics Directive, the planned Global Agreement to End Plastic Pollution and contribute to the UN Decade of Ocean Science for Sustainable Development.

Proposals should demonstrate how they will contribute significantly to:

- develop new analytical tools, methods and sensors for the screening, detection, identification and monitoring of different pollutants in the marine environment such as persistent organic pollutants (POPs), pharmaceuticals, per- and polyfluoroalkyl substances (PFAS), heavy metals and micro- and nano plastics including their degradation products, microbiological contaminants, pesticides, fertilisers and nutrients.

- advance assessments of the risks in real conditions, accumulation, exposure (incl. low-level) and ecotoxicological effects (e.g., on endocrine systems, fertility, metabolism, neurological development and behaviour, growth as well as genetic and physiological changes) of these pollutants on marine organisms and (vulnerable) populations including seabed habitats, benthic communities, endangered species and species for human consumption, incl. risks associated with effects such as harmful algal blooms.

- better understand the cumulative impacts of a combination of different pollutants ('cocktail effect'), their degradation pathways in living systems, and their interplay with climate change such as changes in bioavailability, toxicity and water quality on marine organisms and populations.

- improved understanding of bioaccumulation and biomagnification processes of pollutants in the marine food chain incl. in seafood and implications for human health including and variations in effects on e.g., different sexes or age groups.

Proposals should build on the outcomes and establish links with relevant projects, including those funded under the EU Mission Restore our Ocean and Waters and its Mediterranean lighthouse, and the topic HORIZON-CL6-2025-02-CLIMATE-02: The ocean-climate-biodiversity-people nexus: uncovering safe operating space for safeguarding the integrity and health of the global ocean and relevant JPI Oceans projects. Proposals are encouraged to liaise with and consider the services offered by, where relevant, European research infrastructures[139].

To achieve the expected outcomes and line with the EU-India Trade and Technology Council, international cooperation with India strongly encouraged.

HORIZON-CL6-2025-01-ZEROPOLLUTION-07: Provide digital solutions tailored to small and medium-sized farms to monitor and sustainably manage water, nutrients, other inputs and natural resources

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 8.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 8.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Technology Readiness Level	Activities are expected to achieve TRL 7-8 by the end of the project – see General Annex B.

[139] The catalogue of European Strategy Forum on Research Infrastructures (ESFRI) research infrastructures portfolio can be browsed from ESFRI website https://ri-portfolio.esfri.eu/.

Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The proposals must define the process of selecting entities for which financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. The maximum amount to be granted to each third party is EUR 100 000, as some of the specific technical services and will require extensive work. It is expected that minimum 60% and maximum 75% of the EU funding will be allocated to this purpose.

Expected Outcome: In line with the European Green Deal and the headline ambitions of a digital age and economy that works for people, leaving no one behind, as well as the Biodiversity Strategy and the Common Agricultural Policy (CAP) objectives, the successful proposal will improve the capacities of small- and medium-sized farms to manage agricultural inputs and natural resources through the uptake of tailored digital tools making use of data technologies, including generative AI. In that way, the proposal should mainly encourage food systems to prevent and reduce pollution in water, air and soil, and empower farmers to take informed decisions on agricultural inputs and natural resources for environmental and economic sustainability, as described for this destination.

Project results are expected to contribute to all of the following expected outcomes:

- Small- and medium-sized farmers are empowered with innovative digital and data-driven solutions tailored to their specific needs, allowing for an optimal monitoring and sustainable management of water, nutrients, other inputs and natural resources for agricultural production in conventional and other types of agriculture, including organic farming systems;
- The digital divide between farms with differing capacities and characteristics is reduced.

Scope: : A key challenge for the agricultural sector is to provide food in a context of increasing global population and price volatility while reducing pollution and preserving natural resources for future generations. Farmers should be able to adopt innovative solutions to increase the efficiency and competitiveness of the farming sector while lowering its environmental footprint. However, still many farmers, particularly small- and medium-sized ones, do not have easy access to monitoring and decision support systems and tools fed with data reflecting local conditions and farm characteristics.

Digital and data technologies offer solutions to monitor environmental parameters (e.g. soil conditions, water and air quality, nutrients content and availability) in a cost-efficient manner while supporting decision-making of natural resources and inputs management.

Proposals should:

- critically analyse the potential and limitations of R&I results from relevant past and ongoing projects, and the requirements of further development to meet farmers' needs (including a cost-benefit analysis), made available to industrial partners (including SMEs) that provide technological solutions to farmers to monitor and manage natural resources and agricultural inputs. This should be in the form of a structured catalogue of these results relevant to the topic such as new sensors, software, databases, applications, methodologies, algorithms, etc. (non-exhaustive list), and covering different farming systems/approaches, including organic farming;

- identify barriers and enablers for translation of R&I results into practical and commercial tools for small- and medium-sized farmers, and for the uptake by these end-users, as well as characterise remaining knowledge, training and/or advice gaps, and needs for policy feedback.

- design and set up an accessible and searchable web-based database with technical descriptions and relevant information of all the available results from the catalogue in a structured way, making concrete efforts to follow the FAIR principles;

- set up a central brokerage and support service point aimed at matching innovation ideas from industrial partners that want to improve or create new products or services with the needs of small- and medium-sized farmers. These developments include, for example, increasing the number of measured parameters on existing devices, improving precision, automation, integration of systems and decision-making tools considering the diverse pedo-climatic, cropping and social conditions across the EU and Associated Countries while checking also the transferability to other regions with similar characteristics. The service should be free of charge for the industrial partners;

- establish a network of research and innovation providers and intermediaries with capacity to support the industrial partners to identify and develop the newly adapted solutions;

- provide innovations based on digital and data-based solutions (e.g. IoT, remote sensing, sensors, (generative) artificial intelligence, data visualization techniques) and tailored to the needs of small- and medium-sized farmers, carefully considering the specific barriers and enablers for adoption in each context (e.g. skills of end users, access to and understanding of digital tools, availability of local data, investment need, connectivity, gender role perceptions and expectations, diverse pedo-climatic and socio-economic conditions across the EU and Associated Countries, etc.) and proposing how to overcome these difficulties and foster the enablers;

- develop prototypes of the innovations and test them in an operational environment;

- set up a community of practice to facilitate science-business exchanges and to share experiences across the EU and Associated Countries. Complementarities with European and national AKIS knowledge channels or similar should be explored.

- propose a clear strategy to disseminate and exploit results, innovations and best practices during and beyond the project life time;
- monitor progress of the different supported projects, taking stock of good practices and contribution to the achievement of the objectives of the topic;

Proposals must implement the multi-actor approach, involving at least scientists, innovators, advisors and farmers to ensure a functional and effective product which is tailored to the farmers' needs.

Proposals are expected to provide financial support to third parties to help industrial partners to develop those innovative products primarily building on the technologies identified in the catalogue. Corsortia need to define a selection process for the industrial partners for which financial support may be granted. The provision of training (including technical guidelines and ad-hoc materials) and support services to farmers and advisers should be considered as a criterion to grant financial support to these third parties.

This topic should involve the effective contribution of social sciences and humanities (SSH) disciplines, especially in the field of behavioural sciences and adoption of technologies.

HORIZON-CL6-2025-01-ZEROPOLLUTION-08: Reducing pollution from the food and drink industries

Call: Cluster 6 Call 01	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Technology Readiness Level	Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: In line with the European Green Deal priorities, the zero pollution action plan, chemical strategy for sustainability, farm to fork strategy for a fair, healthy and environment-friendly food system, the biodiversity strategy for 2030 , notably its objective of

reducing pollution, and the EU's climate ambition for 2030 and 2050, the successful proposal will support R&I to reduce pollution coming from food systems (and eventually stop it), contributing to the transformation of food systems to deliver co-benefits for climate (mitigation and adaptation), biodiversity, environmental sustainability and circularity, sustainable healthy nutrition and safe food, food poverty reduction, empowerment of communities, and thriving businesses. Food systems, on the one hand, are a source of pollution and, on the other hand, suffer from the consequences of pollution. Moving towards zero pollution food systems can therefore contribute to building the resilience of food systems and the natural ecosystems on which they depend.

Project results are expected to contribute to all of the following expected outcomes:

- better understanding of the pollution coming from the food and drink industry;
- all food and drink industries have methods at their disposal to measure their pollutants emissions and to reduce them from the source;
- contribution to the food 2030 priorities: nutrition for sustainable healthy diets, climate, biodiversity and environment, circularity and resource efficiency, innovation and empowering communities.

Scope: Contaminants have been accumulating in food products, whether due to food being in contact with specific materials at various stages of the food supply chain, such as food processing plants, packaging, or in agriculture with contaminated soils, air and water.

In the context of the Industrial Emissions Directive and the relevant Best Available Techniques (BAT) conclusions for the food, drink and milk industries, some data are already available. However, there are currently several knowledge gaps when it comes to emerging and/or less known pollutants, and their cocktail effects on the environment and human health.

Some activities of the food and drink industries can lead to soil, water and air pollution, which can, in turn, adversely affect food safety, biodiversity and human health. This pollution can take many forms: plastics (including micro- and nano-plastics), food packaging and food packaging waste management, persistent chemicals, light, noise, odour, etc. There are significant regional differences in the impact of environmental pollution, depending on the type of pollutant. While European and national strategies remain important to reducing pollution, international cooperation is key to ensure that efficient and impactful measures are put in place to protect our oceans and inland waters, ecosystems, biodiversity and health.

The proposals are expected to:

- focus on food and drink industries' processes and on pollutants (including emerging pollutants) typically coming from these industries;
- develop analytical methods, e.g. using the Environmental Footprint method, to measure pollutants and studying/mapping the pollutants coming from food and drink industries

that are not covered in the Best Available Techniques (BAT) conclusions for the food, drink and milk industries and how they interact with each other (mixture of pollutants);

- propose monitoring/tracking methods for pollutants coming from food and drink industries, focusing on less-known and emerging pollutants specific for food and drink industries and taking into account the diversity of these industries;
- identify the most effective methods/best available technologies to reduce food-system-related pollution (in soil, water and air) from food and drink industries, focusing on the most relevant/prominent pollutants (the ultimate objective being to eventually stop pollution);
- develop activities for empowering consumers (e.g. communication, awareness raising);
- develop activities for ensuring adequate involvement of researchers, national agencies/authorities and laboratories, as well as food and drink industry (incl. strategic innovation platforms and federations).

For any activities on depollution to achieve zero pollution in large industrial installations and contribute to the climate ambition, please refer to the INnovation Centre for Industrial Transformation and Emissions (INCITE) (https://innovation-centre-for-industrial-transformation.ec.europa.eu/).

Proposals must implement the multi-actor approach by involving a wide range of food system actors and conducting multi-disciplinary research (including on environmental science and biodiversity). International cooperation is strongly encouraged.

Where relevant, activities should build and expand on the results of past and ongoing research projects. Projects should have a clear plan as to how they will collaborate with other projects selected under this topic and any other relevant topic or relevant EU partnerships. They should participate in joint activities, workshops, focus groups or social labs, and common communication and dissemination activities, and show potential for upscaling. Applicants should plan the necessary budget to cover these activities.

Destination - Land, ocean and water for climate action

R&I under Destination "Land, ocean and water for climate action" will deliver mainly under Key Strategic Orientation (KSO) 1 of Horizon Europe Strategic Plan 2025-2027: Green transition. It will also deliver under KSO 2: Digital Transition and KSO 3: A more resilient, competitive, inclusive and democratic Europe.

This Destination is expected to foster mitigation of and adaptation to climate change on land, in the ocean and water, and therefore helps Cluster 6 to support the ambition of Europe becoming the first climate-neutral and climate-resilient continent by 2050, in line with the European Green Deal, the European Climate Law, the amended Regulation on land use, land use change and forestry (LULUCF) and the amended Effort Sharing Regulation, which establishes binding annual greenhouse gas emission targets for Member States in sectors which include agriculture.

In continuation with the orientations of previous Cluster 6 Work Programmes, and in line with the Horizon Europe Strategic Plan 2025-2027, R&I actions under this Destination for Work Programme 2025 will be aligned with the Communications on sustainable carbon cycles and with the EU 2040 climate target. They will also support the implementation of the proposed Regulation establishing a Union certification framework for carbon removals and will deliver on climate adaptation in line with the EU strategy on adaptation to climate change. R&I activities in the areas of agriculture and forestry under this Destination will contribute to the implementation of the EU methane strategy, the EU forest strategy for 2030 as well as the proposal for an EU Forest Monitoring Law.

R&I actions under this Destination will encourage international cooperation and help achieve international commitments concerning land, water and ocean, notably the goals of the Paris Agreement on climate change, the Kunming-Montreal Global Biodiversity Framework and the High Seas Treaty (BBNJ). The destination supports the objectives of the joint communication on the EU Arctic policy, fostering regional and international initiatives.

Strengthening the climate-ocean-cryosphere-polar science nexus will continue to be a priority for the EU, as well as the integrity and resilience of the ocean and polar regions as vulnerable parts of the Earth system. R&I will support and close key knowledge gaps through research that contributes substantially to the implementation of key international treaties and the work of various international bodies, assessments and other initiatives (such as BBNJ, the Intergovernmental Panel on Climate Change (IPCC), World Ocean Assessment (WOA), UNFCCC Ocean-Climate Dialogue, United Nations Decade for Ocean Science and the United Nations Decade for Ecosystem Restoration, the potential International/Intergovernmental Panel for Ocean Sustainability (IPOS), the WMO Greenhouse Gas Watch (G3W), and the work of the Arctic Council).

The Destination will also support the water related targets of the European Green Deal and ensure water resilience with a view of reinforcing society's ability to sustainably secure the availability and affordability of clean water despite the current uncertainty on long-term trends and the increased variability of water availability. This requires adapting our water

facilities, our water use and water management to changing economic, societal and environmental factors including climate change. R&I will be necessary to ensure in particular that key innovative approaches, solutions and technologies developed by EU funded projects, are successfully and fairly taken up by policy makers, water managers and water consuming economic sectors.

Proposals for topics under this destination should set out a credible pathway contributing to "**fostering mitigation of and adaptation to climate change in areas and sectors covered by Cluster 6"**, and more specifically to one or more of the following impacts:

- better understood short-, medium- and long-term ocean health and integrity at different emission scenarios, under the pressure of current and emerging threats, including ocean climate interventions, and the passing of planetary boundaries for ocean acidification;
- medium and longer-term risks and opportunities for agriculture and forestry from climate change, in particular from shifting climatic zones, are better understood and managed at relevant scales within Europe and in the international context, mitigating hazardous changes where possible;
- greenhouse gas emissions in the agriculture, forestry and land-use sectors are further reduced, while monitoring, reporting and verification of the emissions is improved;
- adaptation and mitigation of water systems in the context of climate change are fostered to help build a water resilient society and environment.

To maximise the impacts of R&I under this Destination, a systemic multidisciplinary approach, strong international cooperation as well as the integration of indigenous and local knowledge need to be ensured. Social innovation also needs to be encouraged to involve all stakeholders, with a view to triggering the ownership of new practices and the uptake of solutions.

R&I under the destination will be complementary with activities of the Mission "Adaptation to climate change", the Mission "Restore our ocean and waters by 2030" (in particular with the establishment of the Digital Twin of the Ocean) and the Mission "A Soil Deal for Europe". Synergies will also be established with European partnerships (e.g., Sustainable Blue Economy Partnership, Agroecology and the upcoming European Partnership on Agriculture of Data), PRIMA (amended EC proposal extending the duration of the partnership by three years, i.e., 2025-2027), and with Destination Earth and its Digital Twins (Climate Adaptation, Extremes). Synergies and complementarities with Cluster 5 (Climate, Energy and Mobility) on climate science will also be ensured. Digital technologies, such as AI, robotics, 5G, cloud computing as well as Earth Observation, will be exploited in the activities given their enabling role and potential contribution to the objectives of the cluster.

The Destination will ensure a balance in terms of lower and higher Technological Readiness Levels (TRLs). R&I actions will take advantage of, contribute to, coordinate with, and involve relevant Copernicus services.

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-02-CLIMATE-01: The ocean-climate-biodiversity nexus and marine carbon dioxide removal (mCDR)

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: International organisations with headquarters in a Member State or Associated Country/Non-Associated Third Country are exceptionally eligible for funding.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions. To ensure a balanced portfolio covering the topic, grants will be awarded to applications not only in order of ranking but at least also to those that are the highest ranked within each of the two options (A, B) set under 'scope' , provided that the proposals attain all thresholds.

Expected Outcome: In line with the European Green Deal biodiversity and climate objectives, and the international commitments made under the Paris Agreement, the Kunming-Montreal Global Biodiversity Framework and the High Seas Treaty (BBNJ), successful proposals should further the European efforts in achieving both climate–neutrality and ocean sustainability by improving the scientific understanding of ocean climate interventions and their short, medium and long term effects, impacts and risks, and developing monitoring and response measures guided by the precautionary principle and supporting decision-making at regional, European and global levels.

Project results are expected to contribute to several of the following expected outcomes:

- advanced knowledge on scientific aspects, environmental, legal, socio-political and governance considerations for Ocean Alkalinity Enhancement (OAE);

- advanced modelling, monitoring and simulation capabilities (including AI tools) needed for the monitoring, reporting and verification of marine carbon dioxide removal (mCDR) and further improved Earth System Models (ESMs), including the Carbon Dioxide Removal Model Intercomparison Project (CDRMIP);

- enabled evidence-based European and global decision–making on mCDR; sustained European leadership in ocean–climate–biodiversity science nexus; significant contribution to global scientific assessments, such as the IPCC, IPBES and WOA, as well as to the UNFCCC Ocean and Climate Change Dialogue, UN Decade of Ocean Science and UN SDGs 13 and 14.

Scope: In line with the objective of the Paris Agreement, all scenarios assessed by the Intergovernmental Panel on Climate Change (IPCC) require the removal of a substantial amount of carbon dioxide over the 21st century. Environmentally safe, socially acceptable, and economically viable carbon dioxide removal (CDR) is needed to support the realisation of European and worldwide climate policies. Ocean alkalinization/Ocean alkalinity enhancement is a proposed carbon dioxide removal (CDR) method that involves deposition of alkaline at the ocean surface. This increases surface total alkalinity and may thus increase ocean carbon dioxide (CO2) uptake and temporarily ameliorate surface ocean acidification.

Carbon Dioxide Removal technologies, practices, and approaches in the marine environment (mCDR) see a rapidly growing interest and numerous and diverse mCDR initiatives have either been conducted, are currently being undertaken or are planned, in some cases driven by commercial interests. There is however still considerable uncertainty regarding scalability and, in particular, the long-term effectiveness and impacts on marine ecosystems and human health. Mindful of the precautionary approach, legitimate, responsible, transparent, and inclusive scientific research to evaluate mCDR techniques is urgently needed. The London Protocol also calls for certain activities other than legitimate scientific research to be deferred (LC 45/LP 18). The Convention on Biological Diversity (CBD) recognizes the importance of biodiversity in the context of climate-related geoengineering. Decision X/33 of the CBD emphasizes the need for a cautious approach, specifying that no climate-related geoengineering activities that may affect biodiversity should take place until there is an adequate scientific basis to justify such activities and that small-scale scientific research studies are allowed if conducted in controlled settings and justified by the need for specific scientific data. The CBD also requests the compilation of scientific information on the impacts of geoengineering on biodiversity and the study of gaps in existing mechanisms.

Whether the ocean has a potential to help achieve the required extent of additional carbon dioxide removal (beyond the ocean sink driven by increasing atmospheric CO2 concentrations), while maintaining its integrity and health, requires further research.

Among the greatest challenges associated with mCDR technologies is the ability to measure, monitor and verify the amount of additional carbon removed over time, and to assess the environmental effects of the mCDR technology. This is particularly challenging in the ocean environment, an open system with high inertia, globally connected food-webs and high

difference in life traits of species in marine life assemblages, for which safety margins need to be considered.

Principled ocean CDR research must be precautionary, inclusive, and well-planned, conducted with a view to ensure these technologies are effective, without harming the environment and people. The research conducted under the topic is to be grounded in the Guide to Best Practices in Ocean Alkalinity Enhancement Research[140].

The topic is guided by a focus on integrated climate stabilization and biosphere stewardship for the resilience of the entire Earth system. From this perspective, a comprehensive approach to climate and biosphere stewardship is needed, as well as considering all the sustainability dimensions to guide future decisions.

Actions should aim at developing innovative approaches to address only one of the following options:

Option A: Ocean Alkalinity Enhancement (OAE): biogeochemical and physiological responses and impacts on marine ecosystems

The project is expected to:

- elucidate many unknowns that remain about the efficacy, effectiveness, feasibility, covering both technological readiness and lead time until full potential effectiveness, effectiveness to increase net carbon uptake, effectiveness to reduce ocean warming, ocean acidification, scalability, duration of effects, termination effects, Energy Return on Energy Invested (EROEI), environmental and ecological risk (intended, unintended, undesirable consequences at scale), co-benefits, disbenefits, risks, cost effectiveness, externalities, trade-offs, and competing interests, weighing the impact on reducing climate change by OAE against its negative environmental effects, etc. The actions should use a Life Cycle Assessment (LCA) methodology and consider all the sustainability dimensions (in particular SDGs 3, 6, 9, 12, 13, 14, 15, 16 and 17), across different temporal and spatial scales.

- the actions will also cover the desirability, ethical considerations, social consideration and governability from an international perspective, conducting comprehensive and responsible research to inform decision making under climate inertia about OAE and its potential application.

- comprehensive assessment of the Ocean Alkalinity Enhancement (OAE) and its short, medium and long term impacts on ocean biogeochemistry (including acidification), on pelagic, coastal and deep ocean ecosystems, their assemblages and trophic webs, on marine organisms that are not able to concentrate carbon within their cells under conditions of increased alkalinity, potentially strong fluctuations in pH and seawater pCO2 impacting plankton and microbiome populations dynamics, species competition

[140] Oschlies, A., Stevenson, A., Bach, L. T., Fennel, K., Rickaby, R. E. M., Satterfield, T., Webb, R., and Gattuso, J.-P. (Eds.): Guide to Best Practices in Ocean Alkalinity Enhancement Research, Copernicus Publications, State Planet, 2-oae2023, https://doi.org/10.5194/sp-2-oae2023, 2023

and assemblages of connected trophic webs, and calcium hydroxide precipitation threatening coral reefs, plants, periphyton and cyanobacteria due to sensitivity to high levels of turbidity, on primary and second production, on seasonal changes in biogeochemistry and plankton dynamics.

- assessment and evaluation of the rate and severity of the local impacts and compare multiple datasets to deliver a greater holistic understanding of OAE's biological and ecological impacts regionally and globally, on human wellbeing linked to the degree to which the overall changes in primary and secondary production may result in change of species assemblage on which coastal livelihoods depend; the increased accumulation of contaminants within food chains via the release of minerals such as cadmium, nickel, chromium, iron and silicon, with potential implications for human health; the environmental impacts associated with extensive calcium carbonate mining operations, mineral distribution, the energy-intensive oxy-calcination process, dispersion operations, impact on resource scarcity due to high electric consumption, assessment and evaluation of additional resources needed.

- numerical modelling should be used to assess the scale of the consequences under various scenarios, experimental work in-situ like in mesocosms and benthocosms and ex-situ like in large flow through experimental chambers can help to improve parametrization of geo-biochemical processes. Field experiments are out of scope. The action should improve the precision of predictions and inform ESMs, IAMs and the Carbon Dioxide Removal Model Intercomparison Project (CDRMIP).

- advance the knowledge related to cost and challenges of carbon accounting, cost of environmental monitoring and the need to track impacts beyond carbon cycle on marine ecosystems.

Option B: Monitoring the global ocean for safe, verifiable and sustainable potential marine carbon dioxide removal (mCDR)

The project is expected to:

- establish building blocks and capabilities towards realistic, long-term, sustainable, rigorous, standardized monitoring of potential marine carbon dioxide removal and sequestration, including operational system requirements, and cover aspects of detection, attribution and determination.

- advance empirical approaches and new data needed for data-based ocean modelling (vs. numerical simulations) and develop ocean simulation capabilities based on integrated physical, biogeochemical and ecological oceanic components.

- develop the monitoring capability for quantifying the effectiveness and durability of carbon sequestration, especially in the offshore mesopelagic water column, and identify environmental and ecological short-, medium- and long-term impacts (days to 100s of

years) on the ocean and marine ecosystems functioning and the ecosystem services they naturally provide (e.g., biological carbon pump), accounting for climate inertia.

- enable monitoring the multiple components of the carbonate system and, especially in coastal zones, at appropriate spatial and temporal resolution, and considering existing monitoring schemes and databases, such as the Copernicus Marine Environment Monitoring Service (CMEMS), Global Ocean Data Analysis Project (GLODAP) or the Surface Ocean CO2 Atlas (SOCAT).

- advance scientific knowledge and understanding of climate-induced changes in the ocean, particularly the deep-sea environments (speed and magnitude of change, thresholds and tipping points), marine ecosystems functioning and the ecosystem services they provide, including carbon and nutrients cycling, climate regulation and fisheries, for future ocean sustainability and decision-making about active climate remediation, as well as deep-sea and coastal impacts of marine carbon dioxide removal, trade-offs and policy needs for decision-making under climate inertia.

For both options A&B, the actions funded under this topic should have a strong collaboration element and mechanism to ensure that the topic delivers on its key research priorities. To this end, proposals should include a dedicated task, appropriate resources, and a plan on how they will collaborate with the other projects funded under this topic and ensure synergies with relevant activities carried out under other initiatives of the Horizon Framework Programme on marine CDR and marine biodiversity and ecosystem functioning. Relevant activities of the plan will be set out and carried out in close cooperation with relevant Commission services, ensuring coherence with related policy initiatives.

The actions should build on existing observing platforms, Copernicus, and strengthen and expand the current capacities in an inter and multidisciplinary and ecosystem-based approach. This inter and multidisciplinary approach is key to comprehensively understand and monitor the variety of effects of global change on the ocean and its ecosystems. The research carried out should also include SSH perspectives and gender, and the research on desirability, benefits and disbenefits should also be done in relation to desirability for whom, benefits and disbenefits for whom, adding a comprehensive justice perspective on the call.

International cooperation under the topic will be essential. A strong linkage should be ensured with the ongoing activities under the UN Decade of Ocean Science. Actions under this topic will build upon and link with Horizon projects (NEGEM, SEAO2-CDR, OceanNETs, OceanICU, BioEcoOcean, ObsSea4Clim, TipESM, STEMM-CCS, MISSION ATLANTIC, SUMMER, GreenFeedBack, RESCUE, TRAMAE, etc.), the Copernicus marine service (CMEMS), GOOS, the Ocean Biogeographic Information System (OBIS), MBON of GEOBON, ICOS, GCOS, and other relevant international Ocean Observing Initiatives. All in-situ data collected through actions funded from this call should follow INSPIRE principles and be available through open access repositories supported by the European Commission (Copernicus, GEOSS, and EMODnet). Synergies with the Horizon Europe Mission Restore our Ocean and waters is encouraged; the projects outputs may contribute to the European

Digital Twin of the Ocean and Destination Earth initiatives and outline specific plans to this effect.

Projects shall leverage the data and services available through European Research Infrastructures federated under the European Open Science Cloud, Copernicus, as well as data from relevant Data Spaces in the data-driven analyses. Projects could additionally benefit from access to infrastructure and relevant FAIR data by collaborating with projects funded under the topics HORIZON-INFRA-2022-EOSC-01-03: FAIR and open data sharing in support of healthy oceans, seas, coastal and inland waters and HORIZON-INFRA-2024-EOSC-01-01: FAIR and open data sharing in support of the mission adaptation to climate change. Collaboration with the relevant existing European Research Infrastructures such as those prioritised by the European Strategy Forum on Research Infrastructures (ESFRI)[141] is encouraged. Synergies and complementarities with the research conducted under Cluster 5, climate science, HORIZON-CL6-2024-CLIMATE-02-2 Closing the research gaps on Essential Biogeochemical Ocean Variables (EOVs) in support of global assessments, HORIZON-CL6-2025-02-CLIMATE-02: The ocean-climate-biodiversity-people nexus: uncovering safe operating space for safeguarding the integrity and health of the global ocean, HORIZON-CL6-2022-CLIMATE-01-02: Understanding the oceanic carbon cycle, HORIZON-CL6-2021-BIODIV-01-03: Understanding and valuing coastal and marine biodiversity and ecosystems services, HORIZON-CL6-2021-BIODIV-01-04: Assess and predict integrated impacts of cumulative direct and indirect stressors on coastal and marine biodiversity, ecosystems and their services, HORIZON-CL6-2022-BIODIV-01-01: Observing and mapping biodiversity and ecosystems, with particular focus on coastal and marine ecosystems, HORIZON-CL6-2024-CLIMATE-01-6: Ocean models for seasonal to decadal and local to regional climate predictions.

HORIZON-CL6-2025-02-CLIMATE-02: The ocean-climate-biodiversity-people nexus: uncovering safe operating space for safeguarding the integrity and health of the global ocean

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 19.50 million.
Type of Action	Research and Innovation Actions
Eligibility	The conditions are described in General Annex B. The following

[141] The catalogue of European Strategy Forum on Research Infrastructures (ESFRI) research infrastructures portfolio can be browsed from ESFRI website https://ri-portfolio.esfri.eu/

conditions	exceptions apply: International organisations with headquarters in a Member State or Associated Country/Non-Associated Third Country are exceptionally eligible for funding. The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering the topic, grants will be awarded to applications not only in order of ranking but at least also to those that are the highest ranked within each of the three options (A, B, C) set under 'scope' , provided that the proposals attain all thresholds.

Expected Outcome: In line with the European Green Deal biodiversity and climate objectives, and the international commitments made under the Paris Agreement on climate change, the Kunming-Montreal Global Biodiversity Framework and the High Seas Treaty (BBNJ), successful proposals should further the European efforts in achieving both climate–neutrality and ocean sustainability by improving the scientific understanding of short-, medium- and long-term ocean health and integrity at different emission scenarios, under the pressure of current and emerging threats, including ocean climate interventions, and the passing of planetary boundaries for ocean acidification, risks and impacts, speed and magnitude of change in deep-sea biodiversity and response measures guided by the precautionary principle and supporting decision-making at regional, European and global levels.

Project results are expected to contribute to several of the following expected outcomes:

- further improved understanding of the limits to ocean integrity at different emission scenarios; ocean changes and near term (~2030), mid-term (2050–2060) and long-term (after ~2060) climate actions and policy making under climate inertia, guided by the precautionary approach;

- further advanced science regarding ocean existing and emerging threats and the associated risks and impacts for the next 5–10 years; 10-20 ys; 50-100 ys and more; and uncovering possible response measures guided by the precautionary principle;

- improved understanding of trends, variability, drivers, and ecological impacts of ocean acidification (as an integral part of a multi-stressor and cascading problem, alongside ocean warming, deoxygenation, eutrophication, stratification, etc.); more harmonised and tailored ocean acidification monitoring (both chemical and biological), modelling, observation, data integration and prediction capabilities and mitigation activities;

- important contributions made to key ocean monitoring indicators, Essential Climate Variables (ECVs from GCOS), Essential Ocean Variables (EOVs from GOOS) in compliance with international programmes (IPCC, WOA, IPBES, CMIP, CLIVAR,

Ocean Health Index, UN Decade, ARGO) that support international global assessments and foster the development of a regional approach to ocean climate monitoring and reporting, overcoming current limitations and gaps;

- further improved Earth System Models (ESMs) representing key physical, biogeochemical, and biological processes in the ocean with reduced uncertainty of climate change projections at regional scales, and reduced biases (i.e., in the WCRP Coupled Model Intercomparison Project (CMIP7) models for ocean and polar regions);

- enabled evidence-based regional, European, and global decision–making on ocean governance; sustained European leadership in ocean–climate–biodiversity science nexus supporting EU programmes; significant contribution to global scientific assessments, such as the IPCC, IPBES and WOA, as well as to the UNFCCC Ocean and Climate Change Dialogue, UN Decade of Ocean Science and UN SDGs 13 and 14.

Scope: The ocean bears the brunt of climate change and anthropogenic activities, with large-scale indicators reaching levels, and changing at rates, unseen in centuries to many thousands of years, with many consequences being irreversible on centennial to millennial time scales. The ocean is faced with a multi-stressor problem, with ocean warming, stratification, acidification, and deoxygenation continuing to increase in the 21st century, at a rate depending on present and future emissions. Ocean acidification has the potential to create major changes in the biogenic trace gas emissions from the ocean, at a scale that can potentially have important impacts on atmospheric chemistry and climate, although the magnitude and even the direction of these changes is uncertain and requires more research. Anthropogenic ocean acidification currently lies at the margin of the safe operating space, and the trend is worsening as anthropogenic CO2 emission continues to rise. The current rate is probably a hundred times faster than at any time during the last hundreds of millennia, confirming the interlinkage to transgression of the climate change boundary, leading to the rising risk of weakening ocean biosphere integrity, and worsening the aragonite saturation state of the ocean acidification boundary. With ocean acidification approaching its planetary boundary, it is necessary to identify the safe operating space for marine ecosystems before trophic cascade collapse of the entire marine ecosystem as the global mean surface ocean pH approaches 7.95 by 2045, potentially resulting in catastrophic climate disruption and global ecosystem crash in the ocean.

Actions should aim at developing innovative approaches to address only one of the following options:

A. Ocean integrity at different emission scenarios: extreme events, slow onset events, cascading and tipping elements and ocean inertia

The project is expected to:

- advance the science on ocean tipping elements at different GHG emission scenarios, lag times, opportunities and impacts at multi-decadal to multi-centennial timeframes,

including the risk of irreversible changes in the carbon cycle and the risks under various overshoot pathways;

- advance the science on ocean changes and near term (~2030), mid-term (2050–2060) and long-term (after ~2060) climate actions;
- contribute to integrated prediction systems that combine Earth System, Ecosystem and Social System models; fully Integrated Assessment Models (IAMs) and Earth System Models (ESMs) with Essential Ocean Variables (EOVs) (ocean biochemistry, ecology, and biology); ability and/or sensitivity of global Earth System Models (ESM) to simulate tipping point crossings; integrated prediction systems that combine Earth System, Ecosystem and Social System models;
- elaborate on the policy implications of inertia (climate inertia and its thermal, ocean, ice sheet, carbon cycle feedbacks and marine ecological components) and develop recommendations for European policy making.

B. Ocean integrity and health: current and emerging anthropogenic threats

The project is expected to:

- advance the science of ocean emerging threats - identify emerging threats that are likely to have a significant impact on the health and functioning of the ocean over the next 5–10 years; 10-20 ys; 50-100 ys and more;
- exploratory research into short-, medium- and long-term impacts on ocean health and marine biodiversity arising from existing and emerging anthropogenic threats, such as (the list is purely informative, projects can cover some of the aspects, or cover threats outside this list, where relevant): mining for critical materials, technologically enhanced ocean carbon uptake, geoengineering, emerging marine renewable energy (MRE) industry (wave, tidal, ocean current and offshore wind power, offshore solar energy, ocean floor geothermal energy), new hydrogen economy and leakages, ocean crops, marine engineering and oil drilling, untapped potential of marine collagens and their impacts on marine ecosystems, exploring marine genetic resources, impacts of expanding trade for fish swim bladders on target and non-target species, impacts of fishing for mesopelagic species on the biological ocean carbon pump, colocation of marine activities, floating marine cities, trace-element contamination compounded by the global transition to green technologies, emerging NIS (invasive species) and pathogens, novel and emerging chemical problems, nutrient and pesticide runoff from industrial agriculture, nanomaterials and micro plastics, potentially toxic effects of new biodegradable materials intended to replace plastics, emerging contaminants of concern, emerging applications of seaweeds, entanglement of marine mammals in mooring lines, cables and anchors, microalgae for biofuels, marine hydrates, seaweeds supply not only food for human consumption but also raw materials for feeds, nutraceuticals and pharmaceuticals, etc;

- support improved risk assessment and management actions that can contribute to mitigate the impacts of these current and emerging stressors and inform public and policymakers to mitigate potentially negative impacts through precautionary principles before those effects become realized.

C. Ocean integrity and health: Ocean Acidification (OA), Planetary Boundaries and SDG14.3.1

Making appropriate use of the Guide to best practices for ocean acidification research and data reporting[142], the project is expected to:

- improve our understanding of trends, variability, drivers, and impacts (ecological, ecosystem services and human) of ocean acidification, in a context of multiple ocean stressors;

- better incorporate complex interactions between natural systems (e.g., climate-ocean coupling, shifting food webs), social systems (e.g., anthropogenic activities, marine pollution, overfishing), and their social, economic, and ecological impacts;

- fill gaps in space and time for ocean CO_2 and ancillary physical and biogeochemical observations at the ocean surface and interior to reduce the biases and uncertainties in the variability and trends for air–sea fluxes and inventory changes, particularly for the Arctic and the Southern Ocean;

- improve our understanding of changes in water mass ventilation associated with climate change and variability to gain further insights into future trends in ocean acidification and deoxygenation in the ocean interior;

- better understand aerosol pH, including more direct measurements, and the process controlling the lability of iron, phosphorus, and other trace metals in atmospheric deposition, as well as the need for more direct measurements of the atmospheric deposition of these nutrients to the ocean, particularly in remote ocean regions such as the Southern Ocean;

- improve observations for the interplay between carbonate chemistry and a variety of biogeochemical and physical processes to increase the robustness of future assessments of ocean acidification; ensure better harmonised and tailored monitoring and data integration, improved models (both in term of spatial resolution and representation of the biological processes), and further integrate observations and model products;

- identify and monitor indicators of biological/ecosystem responses to ocean acidification coupled to support the assessment of ecosystem risk and consequences, and better

142 European Commission, Directorate-General for Research and Innovation, Hansson, L., Fabry, V., Gattuso, J. et al., *Guide to best practices for ocean acidification research and data reporting*, Hansson, L.(editor), Fabry, V.(editor), Gattuso, J.(editor), Riebesell, U.(editor), Publications Office, 2010, https://data.europa.eu/doi/10.2777/58454

inform management strategies at temporal and spatial scales relevant for organisms and their habitats;

- use models, forecasts, and predictions as tools to facilitate management strategies and design decision-support tools for prioritising the development of climate adaptation strategies, develop innovative tools to monitor and mitigate changing ocean chemistry locally, explore the potential opportunities and risks associated with the research findings, aligned with policy governance, including the different spatial-temporal scales that are ecologically and socio-economically relevant and politically applicable, propose actionable innovative solutions and policy recommendations.

For all three options (A, B & C), actions funded under this topic should have a strong collaboration element and mechanism to ensure that the topic delivers on its key research priorities. To this end, proposals should include a dedicated task, appropriate resources, and a plan on how they will collaborate with the other projects funded under this topic and ensure synergies with relevant activities carried out under other initiatives of the Horizon Framework Programme. Relevant activities of the plan will be set out and carried out in close cooperation with relevant Commission services, ensuring coherence with related policy initiatives.

The actions should build on existing observing platforms, Copernicus, and strengthen and expand the current capacities in an inter and multidisciplinary and ecosystem-based approach. This inter and multidisciplinary approach is key to comprehensively understand and monitor the variety of effects of global change on the ocean and its ecosystems. The research carried out should also include SSH perspectives and gender, and the research on desirability, benefits and disbenefits should also be done in relation to desirability for whom, benefits and disbenefits for whom, adding a comprehensive justice perspective on the call. The effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, is sought to produce meaningful and significant effects enhancing the societal impact of the related research activities.

International cooperation **is encouraged, especially with AAORIA partner countries and other Atlantic countries.** A strong linkage should be ensured with the ongoing activities under the UN Decade of Ocean Science and the Decade Programme of the Global Ocean Acidification Observing Network GOA-ON. Actions under this topic will build upon and link with sister Horizon projects, the Copernicus marine service (CMEMS), GOOS, the Ocean Biogeographic Information System (OBIS), MBON of GEOBON, ICOS, GCOS, and other relevant international Ocean Observing Initiatives. All in-situ data collected through actions funded from this call should follow INSPIRE principles and be available through open access repositories supported by the European Commission (Copernicus, GEOSS, and EMODnet). Synergies with the Horizon Europe Mission Restore our Ocean and waters is encouraged; the projects outputs may contribute to the European Digital Twin of the Ocean and Destination Earth initiatives and outline specific plans to this effect. This topic is part of a coordination initiative between ESA and the European Commission on Earth System Science. The EC-ESA Earth System Science Initiative enables EC and ESA to support complementary

collaborative projects funded on the EC side through Horizon Europe and on the ESA side through the FutureEO programme.

Projects shall leverage the data and services available through European Research Infrastructures federated under the European Open Science Cloud, Copernicus, as well as data from relevant Data Spaces in the data-driven analyses. Projects could additionally benefit from access to infrastructure and relevant FAIR data by collaborating with projects funded under the topics HORIZON-INFRA-2022-EOSC-01-03: FAIR and open data sharing in support of healthy oceans, seas, coastal and inland waters and HORIZON-INFRA-2024-EOSC-01-01: FAIR and open data sharing in support of the mission adaptation to climate change. Collaboration with the relevant existing European Research Infrastructures_such as those prioritised by the European Strategy Forum on Research Infrastructures (ESFRI)[143] is encouraged.

Synergies and complementarities with the research conducted under the Mission Restore our Ocean and Waters, HORIZON-CL6-2025-02-CLIMATE-01: The ocean-climate-biodiversity nexus and marine carbon dioxide removal (mCDR), HORIZON-MISS-2023-OCEAN-01-06: Innovative nature-inclusive concepts to reconcile offshore renewables with ocean protection, HORIZON-CL6-2025-01-ZEROPOLLUTION-06: Cumulative impacts of marine pollution on marine organisms and ecosystems, HORIZON-CL6-2022-CLIMATE-01-02: Understanding the oceanic carbon cycle, HORIZON-CL5-2025-D3-10: Understand and minimise the environmental impacts of wind energy, HORIZON-CL6-2021-BIODIV-01-03: Understanding and valuing coastal and marine biodiversity and ecosystems services, HORIZON-CL6-2021-BIODIV-01-04: Assess and predict integrated impacts of cumulative direct and indirect stressors on coastal and marine biodiversity, ecosystems and their services, HORIZON-CL6-2022-BIODIV-01-01: Observing and mapping biodiversity and ecosystems, with particular focus on coastal and marine ecosystems.

HORIZON-CL6-2025-02-CLIMATE-03: Understanding and managing medium and longer-term challenges and opportunities for agriculture stemming from shifting climatic zones and changing agroecological environments

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.

[143] The catalogue of European Strategy Forum on Research Infrastructures (ESFRI) research infrastructures portfolio can be browsed from ESFRI website https://ri-portfolio.esfri.eu/

Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [144].

Expected Outcome: In line with the EU adaptation strategy, the common agricultural policy's key objective of contributing to climate change mitigation and adaptation, and the EU biodiversity strategy for 2030, the successful proposals are expected to contribute to better understanding and managing medium and longer-term challenges and opportunities for agriculture stemming from shifting climatic zones and changing agroecological environments.

Project results are expected to contribute to all of the following expected outcomes:

- the complex links between changes in climate conditions, ecosystems and their services, and agriculture productivity and sustainability are better understood and managed by relevant actors in the sector and in policy-making;
- the suitability of agriculture land areas for different agricultural uses is better understood, and regionally specific adaptation strategies are widely applied, taking into account different climate change scenarios;
- farmers and other land owners and managers are more knowledgeable and better equipped to address the challenge and seize the opportunities resulting from shifting climatic zones and changing agroecological conditions.

Scope: While average global temperatures have risen by about 1.5° globally since pre-industrial times, temperatures in Europe – the fastest warming continent – are rising at about

[144] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

twice that speed[145]. As temperatures rise, previously stable climatic zones (i.e., long-term patterns of temperature, precipitation and their seasonal variations) are shifting towards higher latitudes (towards the poles) and towards higher altitudes (where possible). Arid and semi-arid zones are expanding, while polar and sub-polar zones are shrinking. Precipitation patterns are also changing across different climatic zones. These changes affect natural as well as managed ecosystems and the services provided by them, altering the distribution and abundance of many plant species and their lifecycles. Studies show that agro-climatic zones have already moved in the EU over the past 40 years due to climate change, with the fastest shifts observed in Eastern Europe[146]. Recent studies also point towards additional risks resulting from changing ocean currents that might drastically affect weather patterns in parts of Europe in various ways.[147]

Proposals should address the following:

- by using current and novel evidence, observations and approaches, develop and, where possible, test and validate dynamic models of the impacts of climate change – also in relation to possible tipping points – on agriculture that take into account diverse agroecological systems and pedoclimatic conditions and that cover the most important expected impacts (including changes in growing season and crop phenology, water demand and availability/quality, soil health and fertility, crop and grassland productivity, pests/diseases and parasites, etc.).

- characterise the geo-distribution of cropping systems – also including permanent crops as well as permanent grasslands and other land uses for livestock farming systems, and including currently grown crops as well as others that could be grown under future conditions – in Europe, and propose indicators for sustainability, productivity and production uncertainty that incorporate climate change projections.

- provide tools for decision making and business strategies at different levels of action, for evidence-based agriculture land use strategies based on climate change trends and quantitative projections that enable farmers and other practitioners to develop and apply tailored pathways towards adaptation and restoration in agricultural systems.

Proposals should include a dedicated task and resources for cooperation with the other project(s) funded under this topic and for collaborative actions with other related projects under Horizon Europe and with the Agroecology Partnership[148].

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145 European Environment Agency, European climate risk assessment: executive summary, EEA Report 01/2024

146 European Environment Agency, Climate change adaptation in the agriculture sector in Europe, EEA Report 4/2019

147 E.g., Rahmstorf, S. 2024. Is the Atlantic overturning circulation approaching a tipping point? *Oceanography*, https://doi.org/10.5670/oceanog.2024.501

148 https://www.agroecologypartnership.eu/

E.g., Rahmstorf, S. 2024. Is the Atlantic overturning circulation approaching a tipping point? *Oceanography*, https://doi.org/10.5670/oceanog.2024.501
https://www.agroecologypartnership.eu/

This topic should involve the effective contribution of social sciences and humanities (SSH). The integration of existing Earth observation data space ecosystems and the usage of Destination Earth Climate Adaptation Digital Twin data is encouraged.

HORIZON-CL6-2025-02-CLIMATE-04: Monitoring, reporting, verification and mitigation of non-CO2 greenhouse gas emissions and related air pollutants from agriculture

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Technology Readiness Level	Activities are expected to achieve TRL 4 by the end of the project – see General Annex B.

Expected Outcome: To help meeting the ambitions of EU climate and agriculture policies, including implementation of the Regulation on Carbon Removals Certification, the successful proposals will lead to a reduction of greenhouse gas emissions from the agricultural sector and to improved monitoring, reporting and verification of the emissions.

Project results are expected to contribute to all of the following expected outcomes:

- monitoring, reporting and verification (MRV), in particular at farm level, of direct and indirect non-CO_2 greenhouse gas (GHG) emissions is improved;
- improved MRV and insights from practical experience are comprehensively integrated in relevant models and used in agricultural policy development;
- knowledge on the responses of non-CO_2 GHG emissions to different agricultural practices and to climate change and its impacts is enhanced;

- new and better knowledge and measures for mitigating non-CO_2 emissions are available, widely shared and applied in agricultural practice, in particular by farmers, advisors, and other stakeholders.

Scope: In 2021, the EU agricultural sector accounted for approximately 11% of the total GHG emissions in the EU. The bulk of emissions can be attributed to methane and nitrous oxide, stemming from livestock and release from agricultural soils, in particular due to fertiliser application and manure management. Additional efforts are needed in the sector to help meet the EU's climate targets, in particular climate neutrality by 2050. To promote the uptake of mitigation practices at farm level, better data on their impact and effectiveness are needed.

Proposals should:

- focuse on nitrous oxide (N_2O) and methane (CH_4) and including indirect sources of N_2O (soil nitrification/denitrification, ammonia volatilisation, nitrogen leaching), address agricultural practices in manure management, livestock feeding and grazing, soil tillage, fertiliser use and liming in all relevant types of farming systems, with a view to developing harmonised metrics;

- through analysis, field experiments, and demonstration activities, assess and improve the accuracy, effectiveness, efficiency and user-friendliness of MRV tools for the above GHGs, reducing uncertainties via established and novel methods and enabling use of higher tiers for reporting under the UN Framework Convention on Climate Change. Regarding emissions related to fertilisation, they should include a life-cycle perspective addressing also direct and indirect emissions related to the production of different types of fertilisers, notably comparing organic to mineral/chemical fertilisers;

- improve understanding of linkages between direct non-CO_2 GHG emissions, notably of N_2O, and other air and water pollutant emissions from agricultural practices, and assess and develop options for reducing trade-offs between mitigation measures for both types of emissions;

- consolidate and improve knowledge on mitigation measures for agricultural non-CO_2 GHG emissions, and assess the effects of elevated atmospheric CO_2 concentration and climate change impacts on those emissions and on options for their mitigation;

- through dedicated training and outreach activities, build capacity among farmers, farm advisors and other relevant actors for widespread utilisation of improved MRV tools and GHG mitigation measures.

Proposals should include a dedicated task and resources for cooperation with the other project(s) funded under this topic and with other relevant ongoing and forthcoming Horizon Europe project(s) in different Destinations of this Cluster (notably HORIZON-CL6-2025-02-FARM2FORK-07: "Improving grassland management in European livestock farming systems" *[title TBC]*) and under the EU Mission "A Soil Deal for Europe" (notably HORIZON-MISS-2024-SOIL-01-04: "Systems to quantify nitrogen fluxes and uncertainties

in European landscapes"). They should address various farming systems/approaches, one of which should be organic farming, and cover a range of different pedo-climatic zones.

Due to the scope of this topic, international cooperation is strongly encouraged, in particular with China under the EU-China Food, Agriculture and Biosolutions (FAB) flagship initiative.

HORIZON-CL6-2025-02-CLIMATE-05: Strengthening the resilience of water systems and water sector to climate and global socio-economic change impacts

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 18.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).

Expected Outcome: In line with the European Green Deal, notably the EU climate adaptation strategy, the Nature Restoration Law and EU water legislation, successful proposals will contribute to the impact of this Destination on adaptation and mitigation of water systems in the context of climate change, supporting also biodiversity protection and restoration.

Project results are expected to contribute to all of the following expected outcomes:

- assessing and managing better the changing hydrological cycle, also at fine spatial scales, to reduce water risks amplified by climate change, including extremes, by fostering further development of innovative observing systems to monitor trends in the atmospheric hydrological cycle; by fostering water resilient land use and planning and natural water cycle restoration, also contributing to support biodiversity protection/restoration; and by enhancing cross-sectoral and transboundary catchment cooperation between various water use sectors and complementarity between water related policies;

- increasing water use efficiency in all sectors, balancing better water demand and supply, helping to transform the economics and restructuring the governance of water;

- helping policy makers to prepare for better water infrastructure management and planning allowing among others fair access to drinking water and other essential uses.

Scope: We face a triple interrelated planetary crisis of climate change, biodiversity loss and pollution. Water is at the heart of these challenges. We can no longer ignore the world's crisis of water. The global hydrological cycle is changing. During the last three consecutive years, we have also witnessed not only worrying droughts in many regions of the EU reaching eastern and northern countries which have been so far preserved, but also catastrophic pollution incidents and deadly floods across Europe. These events are no longer exceptional events. As scientists revealed very recently, human-caused climate change has made these episodes at least 20 times more likely. Moreover, groundwater levels sink steadily in Europe and globally, and the EU water balance is greatly perturbed. This exacerbates tensions in agricultural markets, energy production and water supply and it is threatening drinking water, food and energy security, the health of ecosystems and the services they deliver, and our way of living.

These issues are highly interlinked, and they must be addressed together, under the remit of the water, energy, food, and ecosystem (WEFE) nexus. Moreover, recent JRC research shows that reduced freshwater flow of rivers into the sea can have severe impacts on coastal and marine ecosystem and their services, for example wild capture fisheries. This emphasizes the need to adopt the "from the source to the sea" approach when tackling water resilience with a support to biodiversity protection/restoration.

According to the EC communication "Managing climate risks – protecting people and prosperity", "protecting and restoring the water cycle, promoting a water-smart EU economy and safeguarding good quality, affordable and accessible freshwater supplies to all is crucial to ensure a water-resilient Europe. Achieving water resilience means fostering our collective ability to manage and use water in a way that is more agile given the rapidly changing and partially unpredictable geo-political, economic, societal and environmental developments. Water needs to be managed, and human demand needs to be adjusted to the new and more scarce supply".

The objective of this topic is to compare and demonstrate the potential of available state of the art tools to forecast the availability of water resources at the regional and local scale, building also on JRC tools developed for the European scale and other available tools[149]. It should take into consideration both the global water cycle and sectoral water demands for both seasonal and long-term horizon, with an integrated water management approach. It should consider water allocation tools for different uses integrating the quality needed for each use, as well as tools for resilient urban planning and water infrastructure management allowing among others run-off control, reducing flood and drought risks, ensuring safety of citizens and infrastructures and support to biodiversity protection/restoration.

149 https://publications.jrc.ec.europa.eu/repository/handle/JRC124342

Demonstrations should take place in diverse European regions on a suitable scale e.g., river basin and should bring together a wide range of relevant stakeholders, including relevant water sectors, water managers and authorities, policy makers and the civil society. Solutions aiming at fostering and restoring natural retention measures to keep water in the landscape, mitigating drainage losses, enhancing water retention in watersheds to mitigate extreme events, including both drought and flood, should be explored. Proper attention should be given to actions aiming at overcoming the fragmentation of water monitoring and observation data by strengthening the complementarity between satellites, in situ data, participatory research and integrated assessment models. This should foster the consolidation for better-quality and higher frequency data, reducing uncertainty and increasing trust and making them responsive to end-users' needs.

Appropriate climate change adaptation and mitigation strategies and tools, such as, tools for resilient urban planning to manage runoff, reduce flood risk and ensure the safety of citizens and water infrastructures, should then be developed to strengthen the resilience of the water sector. These strategies should in particular assess the following:

- strategies and technical cost-efficient and sustainable solutions for alternative water resources production adapted to the anticipated use;
- the governance of water resource management to better consider the interlinkages of various water related policies to ensure reliable allocation of water for different uses and cross-sectoral coordination;
- the suitability of current indicators to appropriately define water efficiency in various sectors and provide a harmonised methodology to increase water efficiency;
- strategies to anticipate the consequences of recurrent extreme events (e.g. floods and droughts);
- water resilience by exploring water transfer effects for seasonal, annual and pluriannual time-horizon on ecosystems, populations, agriculture, industrial consumption;
- the suitability of solutions to support biodiversity protection/restoration with attention given to avoiding spread of invasive alien species and to ensuring enough water for entire ecosystems (all species and their populations in healthy state).

Moreover, the economic foundation of the current water management systems, including water pricing and trade policies, in the context of changing climate should be reviewed to provide elements for a new economic framework helping to better structure the cost of building/operating/monitoring the water infrastructures, increase demand for innovative solutions and strengthen private investments for large scale deployment of these solutions in the water sector.

Proposals should avoid duplication with related ongoing work carried out by the JRC and other EU funded projects, while strengthening complementarities with ongoing EU funded activities in the context of the EU Mission Adaptation to Climate Change and other relevant

EU Missions and the Partnership Water Security for the Planet (Water4All) and other relevant Partnerships (e.g. Biodiversa+). The proposals should build on the knowledge compiled in the assessment reports produced by the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES), in particular the forthcoming IPBES nexus assessment. Where relevant, proposals should build on or further enhance existing hydrological modelling tools and water relevant datasets of the Copernicus Emergency Management Service, Climate Change and Land Monitoring Services and from Destination Earth. The selected projects should seek to create and/or enhance synergies and complementarities with other related Horizon Europe funded projects. To this end, proposals should plan the necessary budget to cover related cluster activities. These activities should be defined in a later stage, in close cooperation with relevant Commission services, ensuring coherence with related policy initiatives.

This action should bring together a wide range of relevant stakeholders, i.e, researchers, technology providers, water utilities, business representatives, investors, policy makers and other water users and citizens. The active participation and engagement of different stakeholders should span the entire project development and implementation to ensure performance and sustainability and maximise the final impact. When engaging the relevant stakeholders, gender and other social categories (disability, age, socioeconomic status, ethnic and / or cultural origins, sexual orientation, etc.), and their intersections, need to be considered. The possible participation of the JRC in the selected project would ensure that the assessment of available state of the art tools to forecast the availability of water adequately integrates the existing JRC related work and avoid duplication with the ongoing work carried out by the JRC.

Due to the strong socio-economic dimension of water management issue, the inclusion of relevant SSH, including gender studies, and Citizen Social Science approach expertise would be also needed to ensure the proposed climate change adaptation and mitigation strategies are also socially accepted and no one is left behind.

HORIZON-CL6-2025-02-CLIMATE-06: Additional activities for the European Partnership Water Security for the Planet (Water4All)

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 70.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 70.00 million.
Type of Action	Programme Co-fund Action

Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The proposal must be submitted by the coordinator of the consortium funded under HORIZON-CL6-2021-CLIMATE-01-02: European Partnership Water Security for the Planet (Water4All). This eligibility condition is without prejudice to the possibility to include additional partners. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions. If the proposal is successful, the next stage of the procedure will be grant agreement amendment preparations. If the outcome of amendment preparations is an award decision, the coordinator of the consortium funded under HORIZON-CL6-2021-CLIMATE-01-02: European Partnership Water Security for the Planet (Water4All) will be invited to submit an amendment to the grant agreement, on behalf of the beneficiaries.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: This action is intended to be implemented in the form of an amendment of the grant agreement concluded pursuant to topic HORIZON-CL6-2021-CLIMATE-01-02. For the additional activities covered by this action: • The funding rate is 30% of eligible costs. • Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants. • Financial support provided by the participants to third parties is one of the primary activities of this action in order to be able to achieve its objectives. The 60 000 EUR threshold provided for in Article 204 (a) of the Financial Regulation No 2018/1046 does not apply. • The maximum amount of FSTP to be granted to an individual third party is EUR 10 000 000. This amount is justified since provision of FSTP is one of the primary activities of this action

	and it is based on the extensive experience under predecessors of this partnership. The starting date of grants awarded under this topic may be as of the submission date of the application. Applicants must justify the need for a retroactive starting date in their application. Costs incurred from the starting date of the action may be considered eligible (and will be reflected in the entry into force date of the amendment to the grant agreement).
Total indicative budget	The total indicative budget for the topic is EUR 70 million committed in annual instalments over years 2025-2027 (EUR 23 million from the 2025 budget, EUR 23 million from the 2026 budget and EUR 24 million from the 2027 budget).

Expected Outcome: This topic is for the continuation of the European Partnership Water Security for the Planet (Water4All), i.e. EU contribution in WP 2025. The third instalment of the partnership is expected to contribute to expected outcomes specified in topic HORIZON-CL6-2021-CLIMATE-01-02: European Partnership Water Security for the Planet (Water4All), for continuation and new development of activities.

Scope: The objective of this action is to continue to provide support to the European Partnership Water4All identified in the Horizon Europe Strategic Plan 2021-2024 and first implemented under the topic HORIZON-CL6-2021-CLIMATE-01-02: European Partnership Water Security for the Planet, and in particular to fund additional activities (which may also be undertaken by additional partners) in view of its intended scope and duration, and in accordance with Article 24(2) of the Horizon Europe Regulation.

The consortium which applied to and received funding under HORIZON-CL6-2021-CLIMATE-01-02: European Partnership Water Security for the Planet is uniquely placed to submit a proposal to continue the envisioned partnership. Not only did this consortium submit the proposal leading to the identification of the partnership in the Horizon Europe strategic planning 2021-2024, it has also implemented the partnership through co-funded calls between 2021 and 2024 based on this planning and further to topic HORIZON-CL6-2021-CLIMATE-01-02. In this context, the current consortium has particular expertise in relation to the objectives of the Partnership, the activities to be implemented, in particular FSTP calls or other calls/scope of calls clearly required/envisioned pursuant to initial proposal, and other relevant aspects of the action. In practice, another consortium could not continue the activities of the Partnership underway without significant disruption to the ongoing activities, if at all.

The scope of the application for this call on the European Partnership Water Security for the Planet should focus on the 2023-27 programmes according to the partnership's co-created strategic research and innovation agenda for seven years, which includes joint calls for research projects, activities to fostering the uptake of R&I results from various stakeholders, living labs and demonstration sites activities to demonstrate the efficiency of innovative solutions, activities to enhance international collaborations and support the achievement of the

water related UN SDGs and transfer of in foreign contexts, where specific challenges can be encountered. Actions to ensure coordination and alignment of EU, national and regional programmes, to strengthen the research/policy interface and all horizontal activities to allow the Partnership to operate and to achieve its specific objectives should be also addressed.

It is expected that the partnership continues to organise joint calls on an annual base and therefore it should factor ample time to run the co-funded projects.

Specific activities to strengthen the synergies of Water4All partnership with the related Missions, specifically the Missions Adaptation to Climate Change, Restore our Ocean and Waters by 2030, and a Soil Deal for Europe and Partnerships (Sustainable Blue Economy, Biodiversa+, Driving Urban Transition and others), identified in the proposal submitted by the coordinator of the consortium funded under both HORIZON-CL6-2021-CLIMATE-01-02 and HORIZON-CL6-2023-CLIMATE-01-01 should be also described.

While the award of a grant to continue the Partnership in accordance with this call should be based on a proposal submitted by the coordinator of the consortium funded under HORIZONCL6-2021-CLIMATE-01-02: European Partnership Water Security for the Planet (Water4All) and the additional activities (which may include additional partners) to be funded by the grant should be subject to an evaluation, this evaluation should take into account the existing context and the scope of the two first evaluations as relevant, and related obligations enshrined in the grant agreement.

Taking into account that the present action is a continuation of the topics HORIZON-CL6-2021-CLIMATE-01-02 and HORIZON-CL6-2023-CLIMATE-01-01 and foresees an amendment to an existing grant agreement, the proposal should also present in a separate document the additional activities and additional partners, if any, to be covered by the award in terms of how they would be reflected in the grant agreement.

The partnership should pool the necessary financial resources from the participating national (or regional) research programmes with a view to implementing joints call for transnational proposals resulting in grants to third parties.

Destination - Resilient, inclusive, healthy and green rural, coastal and urban communities

R&I under destination "Resilient, inclusive, healthy and green rural, coastal and urban communities" will contribute to the implementation of the Horizon Europe Strategic Plan 2025-2027. In particular, it will deliver under the Key Strategic Orientation (KSO) 3: a more resilient, competitive, inclusive and democratic Europe, and to a lesser extent to KSO 1: the green transition, and KSO 2: the digital transition.

Places and people, as well as their culture, matter to the achievement of a more sustainable Europe. The European Green Deal's ecological and digital transitions, along with the resulting spatial, socio-economic, behavioral, and cultural implications present unique challenges and opportunities for different regions and populations. Rural (including mountains) and coastal areas play a key role in managing and protecting the environment, as well as natural and cultural heritage. The provision of both private and public goods from these areas depends on the resilience and attractiveness of rural and coastal areas and the capacity of people who live and work there to attain an adequate level of well-being.

This destination will make a key contribution to the action plan flagship initiative "R&I for rural communities" and to the four areas of work of the long-term vision for EU's rural areas (LTVRA): stronger, connected, resilient, prosperous.

This destination will as well contribute to the EU territorial agenda for 2030 promoting a future for all places, the farm to fork strategy and the ambitions of the food 2030 R&I initiative as well as the EU bioeconomy strategy, and the circular economy action plan.

On social related research and innovation, this destination contributes to the implementation of the pillar of social rights and its action plan and the implementation of the gender equality strategy 2020-2025.

On an international level, the relevant topics under this destination will support the objectives of the joint communication on the EU Arctic policy, and the all- Atlantic Ocean research and innovation alliance (AAORIA) which has recently prioritised the need to bring science and innovation solutions to coastal communities facing climate threats and to enhance the coastal resilience of cities, regions and islands.

Proposals for topics under this destination should set out a credible pathway to contributing to **sustainably developing rural, urban and coastal areas**, and more specifically one or several of the following expected impacts:

- rural, coastal and urban communities are empowered to act for a transformative change to become sustainable and resilient, through better access to knowledge and services, and are better prepared to adapt to climate change and to achieve climate neutrality and environmental objectives.

- rural areas are prepared to manage demographic trends and to mitigate their social, economic and environmental impacts through enhanced territorial governance and innovative inclusive solutions.

- urban and peri-urban communities can access affordable, healthier, nutritious and environmental-friendly food, and benefit from synergies and a systemic approach across the urban-rural interface as well as from enhanced local and regional governance and public services.

- people and the environment will benefit from climate change adaptation. Coastal communities will have better knowledge and become be more resilient and better equipped to tackle extreme weather events thanks to deployment of latest scientific research results and innovative solutions, including nature-based solutions.

- communities have access to ocean knowledge, data, tools, training and can develop skills that support them to take evidence-based decisions to respond to climate change with socially acceptable measures in their territories.

Under destination "Resilient, inclusive, healthy and green rural, coastal and urban communities", the Work Programme 2025 will fill the knowledge gaps in domains that were not tackled in Horizon 2020 or Horizon Work Programmes 2021-2022 and 2023-2024, as indicated in the Strategic Plan 2025-2027. The destination will place emphasis on actions that will demonstrate, and exploit knowledge created under previous Work Programmes with the objective to deliver impact and increase sustainability, resilience, inclusiveness, and competitiveness. The focus will be on tackling the impacts of demographic changes and environmental extreme events which cause uncertainty, by engaging communities in decision-making processes, improving policy instruments for policy responses that are evidence based and considering local needs. This Work Programme will also contribute to improving access to services, job opportunities, good environmental conditions, and energy-efficient housing in rural areas.

The multi-actor approach may be used in a significant number of topics. Relevant topics under this destination should include social sciences and humanities (SSH), including gender studies, to apply a human-centered approach, as well as make use of social innovation to meet local needs by co-creating place-based solutions.

Coordination will be ensured with the use of the EC knowledge centre for bioeconomy, the EU rural observatory, the EU soil observatory, and the EU Missions "A Soil Deal for Europe", "Restore our Oceans and Waters" and "Adaptation to Climate Change", as well as with the New European Bauhaus (NEB) Facility.

To maximise the impacts of R&I under this destination, international cooperation is encouraged when appropriate.

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-02-COMMUNITIES-01: Adapting to and mitigating demographic trends in rural areas through evidence-based planning and innovative solutions

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 13.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The proposals must define the process of selecting entities for which financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. The maximum amount to be granted to each third party is EUR 100 000, since the development, testing and piloting of innovative solutions will require extensive work.

Expected Outcome: The successful proposals will support the implementation of the long-term vision for EU's rural areas, contribute to empower rural communities for transformative change to become sustainable and resilient, as well as to manage and adapt to a changing population.

Project results are expected to contribute to all of the following expected outcomes:

- improved understanding by all relevant actors of the causes and of the social, economic and environmental impacts of demographic trends in rural areas;
- rural communities are prepared to respond to the challenges of demographic trends thanks to evidence-based planning, appropriate actions, and through the inclusive engagement of stakeholders;

- the well-being of rural communities and the attractiveness of rural areas is improved thanks to sustainable and innovative solutions.

Scope: Rural areas cover more than 80% of the EU territory and host approximately 30% of its population. Rural communities and areas provide essential ecosystem services for the whole society, such as food production, energy provision, management of natural resources as well as access to nature and cultural heritage. They play an essential role in the green and digital transitions. However, almost 9 out of 10 predominantly rural regions reported negative crude rates of natural population change during the period 2015–2020. In particular, the number of people aged 65 years or over increased by 1.8% each year in predominately rural regions. By contrast, the number of working-age people (20-64 years old) living in predominantly rural regions fell, on average, 0.6% each year (EUROSTAT)[150].

Many rural areas also face high variation of their populations, such as seasonal picks that challenge the local infrastructures and services which are often calibrated only on permanent inhabitants. While some are affected more than others by negative demographic trends.

Proposals should address all of the following:

- advance the understanding of the causes and social (including but not limiting to gender and intersectional differentiations), economic and environmental impacts (including but not limiting to consequences related to land abandonment or land use changes also considering the green transition) of demographic trends;

- focus on how to support rural communities through evidence-based strategies that includes planning, monitoring of fluctuations, and propose appropriate actions to respond to population changes;

- find innovative solutions to mitigate and adapt to a changing population in rural areas. Particular attention should be paid to rural areas that are highly exposed to climate change effects.

The funded consortium should work on collecting evidence for better planning and develop sustainable and comprehensive long-term strategies for managing a changing population by considering the needs of rural communities. These needs should be identified by using inclusive multi-actor approach. Consideration of gender and other social categories (disability, age, socioeconomic status, ethnic and/or cultural origins, sexual orientation, etc.), and their intersections, must be ensured.

The financial support provided by the participants to third parties should be granted to test, develop and pilot innovative solutions that improve the well-being of rural communities based on their needs. In particular, projects granted under the financial support to third parties should focus on providing innovative services that respond to the changing population, foster the sustainable development of strategic sectors, and support job creation in rural areas. The

150 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Urban-rural_Europe_-_demographic_developments_in_rural_regions_and_areas

consortium should also coordinate activities funded under the financial support to third parties and take stock of results for recommending appropriate policy measures.

Proposals should also focus on the sustainability, replicability of strategies and solutions. Moreover, proposals should and develop an accessible tool, also making use of digital technologies, to support local and regional decision-makers to assess demographic impacts and plan for the future with evidence-based strategies in the framework of the just, fair and green transition.

Proposals should implement the multi-actor approach to involve relevant stakeholders, in particular for the development of innovative solutions, which may include public authorities, rural communities, as well as SMEs, organisations, and social economy actors.

Proposals should build on research done by the EU rural observatory, and by relevant projects funded under Horizon Europe.

Moreover, proposals should link with the demographic toolbox[151].

This topic should involve the effective contribution of social sciences and humanities (SSH), including gender studies. Proposals are encouraged to consider, where relevant, the services offered by European research infrastructures such as the European social survey (ESS ERIC).

HORIZON-CL6-2025-02-COMMUNITIES-02: Exploring and improving access to housing in rural areas and developing the houses and villages of the future

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.
Legal and financial	The rules are described in General Annex G. The following exceptions

[151] Communication "Demographic change in Europe: a toolbox for action, https://commission.europa.eu/publications/communication-demographic-change-europe-toolbox-action_en

set-up of the Grant Agreements	apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [152].

Expected Outcome: The successful proposal will support the implementation of the long-term vision for EU's rural areas, and of the European pillar of social rights and its action plan. Moreover, the successful proposal will contribute to empower rural communities for transformative change to become sustainable and resilient.

Project results are expected to contribute to all of the following expected outcomes:

- there is a better understanding of the real estate and rental markets (including short-term and long-term rentals) as well as their social impacts on rural communities;
- new solutions, and strategies that improve access to affordable, quality housing and social housing of rural communities are available and broadly shared;
- affordable, sustainable and replicable solutions for sustainable houses and villages of the future are in place.

Scope: At European level, there is a lack of research on the rural real estate issues and different rural areas are affected differently by demographic trends and migration flows. Covid 19, and the new teleworking possibilities also strongly impacted the real estate market in rural areas. Some rural areas are experiencing gentrification processes, others are faced with seasonal touristic flows, while others are affected by depopulation. Affordable and adequate housing is not only an essential part of quality of life, but it is also a prerequisite to ensure the attractiveness of a place and therefore the accessibility of labour workforce for strategic sectors for the rural economy.

Proposals should address all of the following:

- analyse the real estate and rental markets (including short-term and long-term rentals) in rural areas and evaluate housing quality and housing poverty; the analysis should include an evaluation of the demand and supply side and an identification of the stakeholders;
- contribute to increase data availability, making use also of digital technologies, in relation to type of settlement structures and buildings and include and in-depth analysis

[152] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

of the abandoned or in state of collapse units, showcasing best practise to recover and reuse buildings when socially, economically and environmentally sustainable;

- increase the understanding of the access to affordable, quality housing and social housing in rural areas considering also financial aspects such as access to finance and price affordability, as well as social aspects such as gender, age, ethnicity, or disability;

- provide recommendations to policy makers on how to regulate the real estate and rental markets and to promote sustainable housing renovation or construction where needed to benefit rural communities, including people in a vulnerable situation, and ensure affordable and accessible housing;

- run participatory processes involving rural stakeholders to identify sustainable houses and villages of the future paying particular attention to affordability and replicability of innovative solutions (including inter generation, multiuse and reuse) as well as to adaptation and mitigation of climate change. Solutions should include innovations in terms of renovations, insulation, energy and water efficiency and use and reuse of local materials, circularity of materials, as well as at reducing pollution (including air pollution) and soil sealing in rural areas.

Proposals should use the multi-actor approach and involve relevant actors in particular to develop houses and villages of the future.

Proposals should build on research done by the EU rural observatory, and by relevant projects funded under Horizon Europe.

This topic should involve the effective contribution of social sciences and humanities (SSH), including gender studies. Proposals are encouraged to consider, where relevant, the services offered by European research infrastructures such as the European social survey (ESS ERIC).

HORIZON-CL6-2025-02-COMMUNITIES-03: Research and Innovation solutions for resilient coastal communities in the Atlantic

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Innovation Actions
Eligibility	The conditions are described in General Annex B. The following

conditions	exceptions apply: The following additional eligibility criteria apply: the consortium must involve and include partners from at least three countries of the Atlantic Sea Basin in which piloting activities will be taking place The following additional eligibility criteria apply: the proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.

Expected Outcome: In line with European Green Deal, notably the EU climate adaptation strategy, the 2030 biodiversity strategy and EU policies to protect Europe's ocean, seas and coasts, a successful proposal will contribute to the impacts of this Destination related to coastal communities.

Project results are expected to contribute to all of the following expected outcomes:

- deliver tangible benefits and support to Atlantic [153] coastal communities, managing authorities, and citizens, aimed at increasing their resilience to climate change and other environmental challenges, including those affecting coastal ecosystems;
- enhance the capacities of coastal communities for adaptation to environmental change by fostering innovation, and professional skills and competences within an intergenerational context, through creating inclusive learning spaces that also take into accountthe local cultural heritage and traditional knowledge and are sustainable in the long-term;
- contribute to the implementation of the All-Atlantic Ocean Research and Innovation Alliance (AAORIA) Declaration[154] and particularly the recently agreed area of action[155] on increasing the resilience of coastal communities.

Scope: Approximately 1 billion people - nearly 10% of the global population - inhabit vulnerable low-lying coastal areas facing multiple environmental threats, such as extreme weather events, storms and storm surges, sea-level rise, saltwater intrusion into coastal ecosystems, increased water temperatures and ocean acidification. The latest IPCC report warns of further intensification of threats from sea-level rise, storms, and erosion, projecting a tenfold increase in coastal flood damage by the end of the 21st century. An urgent, coordinated effort to increase coastal resilience[156] has therefore become imperative.

The need to enhance the resilience of coastal communities was recently prioritised by AAORIA, a growing science diplomacy initiative focusing on ocean research and innovation.

153 This encompasses coastal communities from all Atlantic countries, including those outside the EU, reflecting the pole-to-pole dimension of the All-Atlantic Ocean Research and Innovation Alliance

154 SKM_80822071310280 (allatlanticocean.org)

155 See of AAORIA 2023 Forum listing the two current priority areas of action of AAORIA

156 For this action, the following definition of coastal resilience applies, as proposed by the European Marine Board position paper "Building Coastal Resilience in Europe": the capacity of coastal natural and socio-economic systems to persist, adapt or transform when faced with disturbances induced by factors such as sea-level rise, extreme events and human impacts, whilst maintaining their essential functions (Folke, 2006; Masselink & Lazarus, 2019).

AAORIA partners[157] have a wealth of already existing innovative ideas, knowledge and solutions for enhanced coastal resilience which could be used by coastal communities to create tangible change.

The European Commission, together with an AAORIA's coordination and support action OKEANO, has initiated an effort to collect this knowledge and make it available to communities around the Atlantic, but considerable effort is still needed to further develop and expand the range of solutions and services to be made accessible to and co-created with the communities.

This topic also contributes to the implementation of the updated Action Plan[158] for a sustainable, resilient and competitive blue economy in the European Union Atlantic area.

Proposals should address all of the following:

- engage with Atlantic coastal communities to understand their unique challenges, concerns, current adaptive strategies and traditional environmental knowledge, and to gather valuable insights into the specific needs and priorities of these communities in the context of coastal resilience;

- work towards enhancing coastal resilience in the Atlantic by building and testing a comprehensive toolbox[159] of scientific outputs and traditional knowledge addressing the community needs for increased coastal resilience, in particular through further expanding and upgrading the evolving AAORIA toolbox of coastal resilience solutions based on the work undertaken by OKEANO project. The toolbox should include knowledge and solutions for various aspects of coastal resilience, including measures to protect and restore coastal ecosystems. As part of the toolbox, the proposals should also consider and, where needed, develop methods and tools that would allow the communities to anticipate the diverse impacts of adaptation actions and measures, including on their most vulnerable members, and thus to avoid climate maladaptation[160] risks. In this context, proposals should consider the gender dimension and other social categories[161] and their intersections in disaster preparedness and capacity-building. A dynamic system for regular updates and refinement of the toolbox should be designed, based on emerging research and feedback from communities. An ongoing collaboration

157 AAORIA currently has 11 partner countries: Argentina, Brazil, Cabo Verde, Canada, EU, Iceland, Morocco, Norway, South Africa, UK, and USA, but further enlargement of the Alliance could be expected For more information on AAORIA, see All-Atlantic Ocean Research and Innovation Alliance (allatlanticocean.org).

158 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0329&rid=1

159 For this action, the Commission defines the toolbox as a repository of available knowledge, and practices aimed at enhancing coastal resilience; this could include case studies, examples of what has worked in various environments for various aspects of coastal resilience, methodology, description of technological solutions, etc outputs of existing research projects and initiatives.

160 The issue of climate maladaptation has been highlighted in the sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) and refers to a situation when climate change adaptation actions backfire, further deepening existing social inequities and leading to adverse outcomes.

161 Such as disability, age, socioeconomic status, ethnic and/or cultural origins, sexual orientation, etc.

between scientists, policymakers, and community representatives should be fostered to ensure the relevance and effectiveness of the solutions included in the toolbox;

- in order to improve the production, access, and use of the knowledge responding to local community needs, as well as to support and complement the activities of the living labs, the proposals should also develop an interface[162] – a set of decision-making processes, guidelines and digital tools – enabling communities to choose a tailor-made mix of coastal resilience solutions uniquely responding to their needs, in a way that increases societal buy-in and acceptance of the solutions while avoiding maladaptation risks;

- for the digital element of the interface, the proposals should design an online platform connecting available coastal resilience knowledge and solutions with community needs in a user-friendly manner, and produce interoperable, tailor-made digital applications. The proposals should consider complementarities with other platforms that already exist, including in particular those of the Mission Restore our Ocean and Waters and Mission Adaptation to Climate Change. The platform should, when relevant, allow for easy integration with existing digital decision-making, mapping and planning tools, for instance, by offering API integration;

- the toolbox and interface should be tested and piloted in living labs[163] based on a systematic user co-creation approach in real life communities and settings. The proposals should create the living labs in a diverse set of Atlantic communities, such as coastal cities, regions and islands (including those from small island developing states), from different parts of the Atlantic, and other relevant communities living at the intersection of marine, coastal and freshwater areas, with a particular attention to those that are highly vulnerable to the risks of climate change. These living labs could also serve as centers for knowledge dissemination, training, community engagement, and collaborative problem-solving. Using the results of relevant Horizon Europe projects[164], the proposals should select appropriate participatory processes or develop new ones that would involve a broad range of stakeholders from the local communities where the toolbox and interface would be used;

- To empower local coastal communities to make evidence-based decisions in response to environmental change within their territories, the proposals should promote innovation and enhance human capacity through the establishment of learning spaces, knowledge exchange, training, participatory process of visioning and skills development, based on the contents of the toolbox. Attention should be given to ensuring long term sustainability of these activities.

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162 For this action thew Commission defines the interface as a combination of digital means, participatory approaches and guidelines that would allow coastal communities to access the repository (toolbox) of coastal resilience related knowledge, and practices, and to select the right mix of solutions for their unique resilience needs.

163 What are Living Labs - European Network of Living LabsEuropean Network of Living Labs (enoll.org)

164 Such as those from the ADAPT4COAST project cluster and EmpowerUsproject

Proposals must implement the multi-actor approach, thus ensuring an adequate involvement of researchers and relevant stakeholders (such as regional and local authorities, citizens, youth, NGOs, local businesses, private investors, social innovators, etc) from the target communities. They should also demonstrate a sound representation of SSH disciplines, including gender studies.

International cooperation is strongly encouraged, especially with AAORIA partner countries and other Atlantic countries .

In order to ensure complementarities and avoid overlaps, the proposals should foresee to work closely with relevant ongoing Horizon Europe projects, particularly the OKEANO project, and, where relevant, the projects funded under the topic HORIZON-MISS-2025-01-CLIMA-03 of the Mission on Adaptation to Climate Change, as well as relevant projects of the Mission 'Restore our Ocean and Waters by 2030' and its Atlantic and Arctic lighthouse~~,~~ (such as A-AAGORA[165] and CLIMAREST[166]) and the Mission Ocean Implementation Platform (MIP)[167], notably with the work MIP does on deployment and upscaling of solutions. The proposals should also take into account the results of other Horizon Europe projects such as TRIATLAS[168], the projects of the ADAPT4COAST[169] cluster and other relevant projects of Horizon Europe including EU Missions, other EU programmes, relevant initiatives and programmes of AAORIA partner countries and other countries around the Atlantic, as well as the relevant work done under the OSPAR convention[170]

HORIZON-CL6-2025-02-COMMUNITIES-04: Creating urban co-creation spaces for driving sustainable food system transformation

Call: Cluster 6 Call 02	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply:

165 Atlantic-Arctic Agora – A-AAGORA Atlantic-Artic Mission
166 Climarest Insert link when available.
167 Climarest Insert link when available.
168 TRIATLAS – Tropical and South Atlantic climate-based marine ecosystem prediction for sustainable management (uib.no)
169
170 OSPAR Commission | Protecting and conserving the North-East Atlantic and its resources

	The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.

Expected Outcome: The successful proposal will contribute to the European Green Deal priorities and the farm to fork and the EU biodiversity strategies, as well as of the EU's climate ambition for 2030 and 2050. It will also contribute to the Food 2030 priorities: nutrition for sustainable healthy diets, circularity and resource efficiency, innovation and empowering communities.[171] The successful proposal will support the development of policies, business models and market conditions contributing to the sustainable and inclusive development of urban areas and to the empowerment and resilience of their communities, who can access, afford and choose sustainable[172] food.

Projects results are expected to contribute to all of the following expected outcomes:

- enhanced skills and problem-based learning to change food cultures, behaviours and food environments;
- improved local governance frameworks for social inclusion and social economy in urban areas;
- improved understanding of the local policy 'mix'/package of measures as well as the effective communication and marketing strategies that are needed to support EU consumer behavioural change towards sustainable diets.

Scope: Achieving sustainable food systems requires managing numerous interconnected activities and actors with an impact on nutrition, environmental and economic outcomes of great relevance to the EU, including the Sustainable Development Goals (SDGs). Understanding food systems interconnections and interdependencies is crucial in decision making processes to steer a food system change. Yet, for governments to promote more sustainable food systems, they will need to improve their capacity to deal with the complexity of interdependencies with adequate governance mechanisms and principles to support a more systemic approach. Strengthening food systems governance in the urban context is an important area and opportunity for research, innovation and implementation to accelerate sustainability impact in the local context. It has the potential to enhance more coordination and coherent actions, leading to the development of more effective urban policies that ensure food security and nutrition for all without compromising economic, environmental, and social foundations.

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171 European Commission, Directorate-General for Research and Innovation, Bizzo, G., Fabbri, K., Gajdzinska, M. et al., Food 2030 – Pathways for action 2.0 – R&I policy as a driver for sustainable, healthy, climate resilient and inclusive food systems, Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2777/365011

172 Economically, socially (healthy, safe, nutritious) and environmentally.

European Commission, Directorate-General for Research and Innovation, Bizzo, G., Fabbri, K., Gajdzinska, M. et al., Food 2030 – Pathways for action 2.0 – R&I policy as a driver for sustainable, healthy, climate resilient and inclusive food systems, Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2777/365011

Economically, socially (healthy, safe, nutritious) and environmentally.

Proposals are expected to address all of the following:

- create innovative hands-on living labs and co-creation spaces that actively engage all parts of society to enhance skills and capacity building toward healthy, affordable and environment- and climate-friendly diets; and apply randomized controlled trials, for different age groups (especially young people and the elderly), socio-economic groups and their different needs;

- promote and establish sustainable / regenerative community gardens and indoor and open field small-scale urban agriculture for skills building and network creation and share best practices from other areas/cities not covered by the proposals;

- enhance participation of vulnerable groups, such as young people (including those not in education or employment), elderly people, migrants, homelessness people, ethnic minorities, pregnant women, and persons with disabilities, in living labs and community gardens to strengthen inclusion as well as intercultural and intergenerational cohesion;

- enhance attractiveness of safe, healthy, environment-friendly food, for instance by making use of social media and partnering up with different actors (e.g., chefs, nutritionists and dieticians, food scientists and technologists, food industry, start-ups R&D, social/solidarity economy actors, etc.);

- involve local and regional governance mechanisms to enable structural change, for instance by developing and implementing effective participatory and inclusive processes which enable and stimulate an extensive dialogue on food system transformation and involve diverse stakeholders (e.g., citizens, farmers, consumers, civil society organizations, research institutions, businesses, and public authorities at the local or regional levels);

- connect different living labs and build networks, also from previous EU funded projects, for joint learning and best practice exchange;

- establish data monitoring approaches (e.g., machine learning approach, AI, etc.) and a test-control approach for impact assessment and evidence-based policy making.

Proposals should include a dedicated task in the workplan and appropriate resources to collaborate with the projects funded under this topic and under topic HORIZON-CL6-2022-GOVERNANCE-01-01 (Mobilisation of society to transform food systems for co-benefit, Cleverfood).

Collaboration and complementarity with the European Partnerships on “Sustainable Food Systems ”, “Agroecology”, the EU Missions “A Soil Deal for Europe” and “Climate-Neutral Smart Cities”, and the New European Bauhaus (NEB) Facility is encouraged.

Proposals should integrate the gender dimension where applicable. Consideration of other social categories besides gender (disability, age, socioeconomic status, ethnic and/or cultural

origin, sexual orientation, etc.), and their intersections, must be also ensured. The use of Multi-Actor Approach is encouraged.

This topic should involve the effective contribution of Social Sciences and Humanities (SSH) disciplines.

In order to achieve the expected outcomes, cooperation with legal entities established in widening countries is strongly encouraged. International cooperation is also encouraged.

Destination - Innovative governance, environmental observations and digital solutions in support of the Green Deal

Achieving the targets and objectives of the European Green Deal and related policy initiatives in a fast-changing context requires innovative and agile governance models and tools that enable sustainability and resilience. To this end, it is crucial to invest in R&I that delivers evidence-based knowledge and tools, which support decision-making processes and designing effective policy mixes that enable the sustainability transitions engaging society at large in a just manner. R&I activities under this destination intend to assist policymakers (from the local to the global level) in dealing with complexity and to enable them to introduce science-based arguments for social debates, to compare options for action and to make evidence-based decisions. A higher degree of coordination and convergence across the scientific community and other networks channelling evidence-based knowledge for policymaking will be promoted. Some of the R&I activities will support the development of sustainable, circular and inclusive bioeconomy and its bio-based sectors in line with the bioeconomy strategy[173] and the communication on biotechnology and biomanufacturing in the EU[174]. New knowledge and innovations will support the common agricultural policy (CAP) and related EU initiatives, focusing specifically on the objectives related to improving environmental and climate performance of agriculture, and reinforcing farmers' position in the value chain. R&I activities will contribute also to boosting the attractiveness of agriculture and the links between the farming community, in particular young farmers, and society.

Data and intelligence provided by environmental observations are key for assessing the state of the planet, including its biodiversity and the pollution of its air, soils and waters, thus supporting the EU biodiversity strategy for 2030[175], the Nature Restoration Law[176] and the EU zero pollution action plan[177]. R&I and related coordinating activities under this destination will improve environmental observing systems and provide Earth Intelligence, i.e. targeted and actionable environmental knowledge and insights, that will support policymakers, society and economy in navigating the transformative changes required by the European Green Deal. Towards these ends, technological solutions and data governance models will be advanced in order to make environmental data more available, accessible, usable and inter-operable at European and global level. Some topics under this destination support the Group on Earth Observations (GEO), which is an international partnership that aims at delivering Earth Intelligence to decision makers at all levels. It offers a unique forum for international cooperation and the opportunity to scale-up solutions developed in Europe and other regions of the globe, in particular under the European programme Copernicus, advancing the implementation of the UNFCCC Paris Agreement, the Sendai Framework for Disaster Risk Reduction, the 2030 Agenda for Sustainable Development, and the New Urban Agenda, as well as endeavours like the Kunming-Montreal Global Biodiversity Framework, the UN Early Warnings for All and the WMO Global Greenhouse Gas Watch initiatives.

173 Bioeconomy strategy - European Commission (europa.eu)
174 47554adc-dffc-411b-8cd6-b52417514cb3_en (europa.eu)
175 Biodiversity strategy for 2030 - European Commission (europa.eu)
176 Nature restoration law – Final text adopted by European Parliament and Council (consilium.europa.eu)
177 Zero Pollution Action Plan - European Commission (europa.eu)

EuroGEO is the regional initiative in GEO implementing a policy- and user-driven research and innovation agenda to maximise uptake and engagement of EO applications, building on Copernicus and other EU assets in Earth Observation, that are addressing the above-mentioned GEO priorities. EuroGEO will be enabled to provide Earth Intelligence to local administrations or businesses with targeted decision support to increase the resilience and environmental performance of their operations. R&I activities will help also to implement the EU Arctic policy, by improving and integrating polar observation systems in response to user requirements at local, regional and international levels.

There is a need to unlock the potential of applied digital and data technologies to support sectors covered by this Cluster in becoming more sustainable, resilient, competitive, and inclusive in line with the evolving legal frameworks in the fields of cyber, data and digital technologies and services (e.g., European data strategy, Europe's digital decade policy programme and the AI innovation package). This destination will contribute to the development, and uptake of innovative digital and data-based solutions to support economic sectors relevant for Cluster 6 and society at large to achieve the European Green Deal targets and objectives. The key focus in this destination will be on enhancing sustainable rural development through digital twins for rural communities.

The CAP cross-cutting objective and the Pact for Skills highlight the important role that knowledge and skills play in enabling all actors relevant to this cluster to actively engage in the sustainability transitions. Effective Agriculture Knowledge and Innovation Systems (AKIS)[178], defined as the combined organisation and knowledge flows between persons, organisations and institutions who use and produce knowledge for agriculture and interrelated fields, are key to facilitate the sharing and uptake of knowledge, skills and innovative solutions for a more competitive, sustainable and resilient economy. In synergy with the CAP, Activities under this destination will strengthen AKIS at European and national level, by increasing the knowledge flows (including from Horizon projects and EIP-AGRI Operational Groups) to practice, building a community of competent and impartial advisors and preparing the farming community to the future of agriculture through improved education and training systems. Specific attention will be also given to boosting the co-creation and use of R&I results in practice via enhanced implementation of the multi-actor approach (MAA).

Proposals responding to the topics under this destination should set out credible pathways to **developing innovative governance models and tools enabling sustainability and resilience**, and more specifically to one or several of the following **impacts**:

- effective policy mixes and multi-level governance enable just transition to sustainability, engaging society at large and balancing economic, social and environmental goals, thanks to improved evidence-based knowledge, tools and science-policy interfaces;

[178] AKIS fosters flows of knowledge and skills to support the actors in the sustainability transitions across the Cluster 6 destinations; they go beyond agriculture, farming and rural activities and cover environment, climate, biodiversity, landscape, bioeconomy, consumers and citizens, i.e., all food and bio-based systems including value chains up to the consumer.

- sustainability and resilience of the economy are increased by more accessible and interoperable environmental observations as well as related data technologies;
- transformative changes required by the European Green Deal are facilitated, leaving no one behind, through digitalisation and enhanced flows of existing and new knowledge, solutions and skills among actors and communities.

This destination will support R&I activities in complementarity with the European Partnership on Agriculture of Data and those that continue for the Sustainable Blue Economy Partnership. To maximise the impacts of R&I under this Destination, international cooperation involvement of the effective contribution of social sciences and humanities (SSH) disciplines are encouraged.

To ensure coordination at European and global levels and effective dissemination of user-driven Earth intelligence solutions to inform decisions and accelerate action on global environmental challenges, support will be continued for the annual subscription of the GEO secretariat.

The R&I activities supporting digital and data-based innovation under Cluster 6 will complement activities supported by Cluster 4 (Digital, Industry and Space) and the Digital Europe Programme, bringing benefits for citizens, businesses, researchers, the environment, society at large and policymakers. Synergies will be carefully considered in particular with Copernicus, the Common European Data Spaces and the Destination Earth programme.

The destination will ensure synergies with the CAP instruments aimed at strengthening AKIS in all Member States across the EU, thereby deliver on the cross-cutting objective to foster knowledge and innovation. Strong interaction between and integration of AKIS actors is key to this end, hence the CSA type of activities will prevail. The interactive innovation model will be supported via a reinforced multi-actor approach mainstreamed across Cluster 6.

Innovating with governance models and supporting policies

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-03-GOVERNANCE-01: Improving understanding and analytical capacity of farmers bargaining power and interactions with the upstream and downstream operators in the agriculture and food value chains

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Research and Innovation Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [179].

Expected Outcome: Reinforcing the position of farmers in the value chain is one of the key objectives of the common agricultural policy. The successful proposal will contribute to this objective by enhancing knowledge and tools to support decision-making and the development and implementation of effective governance and policy mixes supporting the potential of agriculture and food value chains ("value chains") in generating a fair income to farmers and creating enabling conditions for the transition to fair, competitive, sustainable, and resilient farming systems. The successful proposal will also contribute to support other related policies and initiatives [180].

Project results are expected to contribute to all of the following expected outcomes:

- the capacity of the research community to model the impacts of EU and Associated Countries' policies related to the agriculture and food sectors and the sustainable management of natural resources (e.g., common agricultural policy, policies on food, climate, biodiversity, competition, trade, bioeconomy, etc.) is improved with a better understanding of the agricultural and food sectors, their market structure, and the formation and transmission of price and value along the value chains;

- policymakers at EU, national and local level are better equipped to design and support the uptake of existing and future policy tools strengthening farmers' position in value chains;

- farmers and consumers benefit from improved policy mixes and tools for fairer, more sustainable, more transparent and more resilient value chains, reinforcing the bargaining power of farmers with upstream and downstream operators.

[179] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[180] e.g., the farm to fork strategy, the EU Directive 2019/633 on unfair trading practices in business-to-business relationships in the agricultural and food supply chain, and the EU Regulation 1308/2013 establishing a common organisation of the markets in agricultural products.

Scope: The understanding and analytical capacity of the agriculture and food sectors, value chains [181] and market structures remain incomplete and oversimplified in many analytical frameworks, creating a gap in the capacity to capture the relations between farm production costs and price developments, from input prices faced by farmers to food prices faced by consumers. Market and value chain conditions and dynamics, characterised by farmers' low bargaining power in some sectors, are important drivers of farmers behaviour and farm income, in particular regarding the choices of production and business model, and on the adoption of sustainable practices, as they define the prices of the inputs bought and the commodity and non-commodity outputs sold by farmers. A better understanding and analytical capacity of the composition and functioning of value chains and market settings, in a disaggregated and comprehensive way, would support more accurate assessments of the socio-economic impacts of policies and support the development of evidence-based policies adapted to the conditions faced by farmers and consumers.

Proposals should:

- provide an analytical framework and tools capturing the complexity and heterogeneity of value chain architectures, in particular relative to:
    - their length (number of intermediaries from the input industry to the consumers)
    - their scale (global, EU, national or local)
    - the degree of vertical coordination
    - the degree and forms of horizontal coordination between farmers
    - the degree of concentration of operators at all stage
    - the degree of product (quality) differentiation.
- the proposed framework should include a consolidated conceptualisation such that it can be adapted to represent the diversity of cases within and between sectors but be sustained with empirical evidence and data to the maximum extent;
- apply the developed analytical framework and tools to empirically model production costs, price formation, price transmission, value distribution, and profit margins along selected value chains, and to characterise sources of market failures, occurrence of unfair trading practices and vulnerabilities to fraud. Proposals should consider different economic contexts (e.g., high prices, low prices, different patterns of price volatilities);
- develop and/or improve adequate indicators and collect the necessary data to improve the assessment of farmers bargaining power with upstream and downstream operators of value chains in analytical tools and models;

[181] The agriculture and food value chains encompass all operators from the producers of necessary inputs to the consumers, including farmers, food and bio-based industries, retail, wholesale, food service, as well as the suppliers of inputs and services such as seeds, pesticides, fertilisers, energy, machinery, packaging, repair, transport, finance, advice, and logistics.

- explore, characterise, and analyse the interactions between value chain operators affecting farmers' bargaining and decision-making power, in particular relative to the type of farm business and structural changes (e.g., farm size, legal form, etc.). The proposed activities should include the analysis of the transaction relationships between farmers and input suppliers, farmers and service providers, and farmers and buyers of agricultural products, looking at the types of contracts, provisions, clauses, standards, indications and calculations of prices and volumes, as well as how value and risks (market risks, production risks, etc.) are shared among the operators. Proposals are encouraged to analyse whether farmers' bargaining and decision-making power is affected by socioeconomic characteristics (e.g., gender, age, etc.).

- explore existing and/or propose new policy and business solutions and tools to reinforce farmers bargaining power in value chains, and identify good practices (governance, awareness raising, etc.) for their successful implementation and uptake. Among the possible solutions, proposals should explore:

    - Coordination approaches between farmers and/or between farmers and other value chain operators (e.g., form, size, contractual agreements, capacity building, etc.).

    - Tools (e.g., data tools, innovative technologies) to increase market transparency and the accessibility of information as to better inform farmers and consumers on the distribution of costs, prices, value, and risks along value chains and improve the efficiency of agriculture and food markets.

Proposals should develop short dissemination materials (e.g., policy briefs, research findings briefs, audio or visual presentations, etc.) summarising the results of key deliverables to facilitate the uptake of R&I outputs by decision-makers in policy or business contexts.

Proposals should capitalise on existing relevant research findings and tools. Proposals should also ensure synergies with other relevant EU-funded studies, projects, initiatives, and processes [182].

This topic should involve the effective contribution of Social Sciences and Humanities (SSH) disciplines.

HORIZON-CL6-2025-03-GOVERNANCE-02: Upscaling payments for environmental services with result-based, collective or spatially coordinated approaches for more support targeted towards the delivery of agri-environment-climate public goods

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately.

[182] e.g.,producer organisations operational programmes, the EU Agri-Food Chain Observatory

project	Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. The following additional eligibility criteria apply: The proposals must use the multi-actor approach. See definition of the multi-actor approach in the introduction to this Work Programme part.

Expected Outcome: In line with the objectives of the Green Deal and the common agricultural policy, the successful proposal will contribute to the development and uptake of effective governance and business models based on innovative payment mechanisms with result-based and/or collective and/or spatially coordinated approaches supporting the provision of environmental services by farmers and the transition to more sustainable farming systems. The successful proposal will contribute to the impact of this Destination on just societal transformation, community empowerment and societal participation in support to the green transition.

Project results are expected to contribute to all of the following expected outcomes:

- farmers from diverse farming contexts widely participate on the long-term in innovative payment for environmental services schemes with result-based and/or collective and/or spatially coordinated approaches, involving private funding;
- policymakers, businesses, farmers, and other relevant stakeholders have improved knowledge and innovative tools to programme, implement and upscale payments for environmental services schemes with result-based and/or collective and/or spatially coordinated approaches adapted to the diverse contexts and with the governance perspective of ensuring long-term financing capacity at scale;
- society at large benefit from more targeted support towards the delivery of agri-environment-climate public goods with positive social, economic, and environmental outcomes.

Scope: Payments for environmental services are instruments recognizing and paying farmers for voluntary interventions that contribute to the provision of public goods [183]. They are flexible tools aiming at matching supply and demand of public goods with the use of economic incentives. Research and practical experiences from the common agricultural policy

[183] e.g., climate change mitigation, soil functionality, farmland biodiversity, water quality and water availability preservation and restoration, resilience to extreme weather events, animal welfare, etc.

and from a diversity of initiatives by the public and/or private sector provided evidence and guidance on cost-effective and well-contextualised design to support practitioners, in particular encouraging more result-based and/or collective and/or spatially coordinated approaches in payment conditionality rules. While some Member States integrated such approaches in the design of some eco-schemes and agri-environment-climate measures under the 2023-2027 CAP Strategic Plans, important barriers to the upscaling and long-term implementation remain to be overcome, in particular to build sufficient institutional, monitoring, funding and financing capacity and increase synergies between economic viability, environmental effectiveness and longevity for more sustainable and positive social, economic and environmental outcomes. It calls for mobilising more private stakeholders to support the green transition.

Proposals should:

- develop and/or improve, test, pilot and evaluate payments for environmental services schemes with result-based and/or collective and/or spatially coordinated approaches in real-life conditions considering a diversity of farming contexts;

- put a special focus on mobilising private funding (e.g., value chain approaches, market-based instruments, crowdfunding, bottom-up approaches, etc.) and assessing the social and economic implications of the schemes with the perspective of long-term implementation and financial viability under different scenarios and socio-economic contexts;

- based on an analysis of the role of agriculture and food value chains in supporting and valorising farmers' provision of environmental services, develop and/or improve approaches supporting a just and fair remuneration of farmers for these services;

- develop and/or improve and apply robust and cost-effective monitoring of the environmental services provided by farmers. Develop support capacity to ease implementation by practitioners;

- identify barriers and enablers for the implementation and upscaling of payments for environmental services schemes with result-based and/or collective and/or spatially coordinated approaches and propose effective solutions to address them. Special attention should be given to not repeat but build on and complement the state-of-the art;

- support capacity building, training, reskilling, and education, in particular on the financial, legal and administrative implications of contractual arrangements, enabling farmers and other involved practitioners, including the private sector, to implement the proposed solutions.

Proposals should ensure complementarities with ongoing relevant Horizon Europe or Mission "A Soil Deal for Europe" projects and capitalise on existing relevant research findings and

tools. Proposals should also ensure synergies with other relevant LIFE projects, EU-funded studies, initiatives, and processes [184].

Proposals should include a dedicated task, appropriate resources and a plan on how they will collaborate with other projects selected under this topic (e.g., by participating in joint activities, workshops, as well as common communication and dissemination activities).

The JRC participation could involve contributing to the testing of payment for environmental services schemes via experiments.

Proposals must implement the 'multi-actor approach', with a consortium based on a balanced mix of actors with complementary knowledge, including farmers. Proposals are encouraged to consider an adequate involvement of SMEs for developing and/or testing the proposed solutions.

This topic should involve the effective contribution of Social Sciences and Humanities (SSH) disciplines.

HORIZON-CL6-2025-03-GOVERNANCE-03: Boosting the attractiveness of agriculture and the connection between the farming community and society

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Research and Innovation Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [185].

[184] e.g.,rural development programmes, EU-wide certification scheme for carbon removals

[185] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Expected Outcome: In line with the European Green Deal priorities and of the EU farm to fork strategy, and pursuing the ambition of the common agricultural policy (CAP) to enhance the attractiveness of the agricultural sector, to improve the position of farmers in the food chain, to promote fair jobs and social inclusion for farmers, the successful proposal will support the impact of this Destination related to the development of innovative governance models by providing strong evidence-informed knowledge..

Better evidence-based knowledge and analytical capacity will help policymakers develop and implement effective policies, in particular the CAP post 2027.

Project results are expected to contribute to all of the following expected outcomes:

- the perception of and the communication on agriculture as economic activity and profession are assessed and enhanced in order to boost the attractiveness of the sector and improve the connection between farming community and society;
- knowledge on the socio-economic factors leveraging farming attractiveness is more easily available and disseminated through local, national and EU decision-makers;
- new solutions and practices to enhance the farming sector attractiveness are widely used by diverse actors, including farmers, businesses, policymakers and society at large.

Scope: With the current challenges of climate change, resource scarcity, new working patterns and consumers' behaviour changes, there is the need for a more innovative, sustainable farming in the EU. However, the EU's farming sector is facing a steady decline of workforce in the last fifteen years. The motivations, commercial nature and business models for farming have changed due to the recent climate and environmental challenges and to the new opportunities offered by the technological and digital innovations, but at the same time, due to social and economic factors.

To develop and implement effective policies enhancing the attractiveness of the sector, a better understanding of how the perception of farming by society is determined by socio-economic related factors (for example, but not limited to: income, labour conditions, land markets, mental health, social wellbeing, socio-economic and gender inequalities, generational renewal, etc…) is essential. Sound governance and policies creating an attractive environment and fair job conditions for farmers will enable the transition to more resilient and sustainable farming systems.

While it is a vital sector, farming still remains largely poorly understood by society, subject to many myths and misconceptions. New interdisciplinary knowledge also stemming from social sciences and human disciplines is necessary to better understand and improve, by unlocking the potential of cultural and creative industries, the ways in which agriculture is expressed and thought about, and its changing relationship with society.

Proposals should:

- improve the definition and comprehensive understanding of the socio-economic and other factors and conditions influencing attractiveness of farming as an economic activity;
- explore how different factors are impacting farmers (farm workers and farm owners) well-being and decision-making;
- analyse farmers interactions within the farming community and with the rest of the society across the EU with a historical, sectorial, territorial, size, age, sex, education and gender perspective;
- explore and assess the perception of and communication on farming across the society at large and different economic actors and how farmers see themselves. Explore how farmers, and farm workers see and project themselves in the future of farming. Participatory foresight methods are encouraged;
- improve societal perception of farming through the mobilisation of and cooperation between cultural and creative industries (CCIs);
- promote good practices and propose new solutions and/or, involving digital media, arts, marketing, cultural disciplines to improve attractiveness of the farming sector.

Proposals should support collaborative and interdisciplinary work. Thus, proposals should involve the effective contribution of Social Sciences and Humanities (SSH) disciplines, including but not limited to sociology, demography, anthropology, education, humanities and the arts.

HORIZON-CL6-2025-03-GOVERNANCE-04: Operationalisation of bioeconomy sustainability principles

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.50 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.

	The following additional eligibility criteria apply: The proposals must use the multi-actor approach. See definition of the multi-actor approach in the introduction to this Work Programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [186].

Expected Outcome: In line with the European Green Deal, the EU's climate targets for 2030 and 2050 and the bioeconomy strategy vision for an economic system that acts within planetary and social boundaries, the successful proposal will contribute to the impact of this Destination on just societal transformation.

Project results are expected to contribute to all of the following expected outcomes:

- new and improved knowledge and better understanding of how bioeconomy sustainability principles for food and other bio-based value chain can be operationalised (e.g. cascading use of biomass or the food-first principle) in different environmental, social and economic contexts. Clarity on the true cost of biomass use and to improved clarity and transparency for businesses and consumers, thus enabling better-informed choices and policy- and decision making;

- new knowledge of how social sustainability, particularly related to distributional (inter-national and intra-national) and inter-generational justice can be captured and operationalised in Bioeconomy Monitoring Systems;

- increased deployment of bioeconomies across Europe considering environmental, social and economic sustainability. For instance, by improving knowledge of the impact of the bioeconomy on ecosystems, and providing options on how to protect /restore ecosystems, contribute to the reduction of biodiversity loss and to climate action, while developing the bioeconomy.

Scope: Bioeconomy[187] is a place-based policy framework. The application of sustainability principles in concrete contexts therefore depends on available (environmental and human)

[186] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[187] See definition: European Commission, Directorate-General for Research and Innovation, A sustainable bioeconomy for Europe – Strengthening the connection between economy, society and the environment – Updated bioeconomy strategy, Publications Office, 2018, https://data.europa.eu/doi/10.2777/792130

assets, challenges and priorities, as well as access to logistics, biotechnologies[188], finance and infrastructure. It is therefore important that sustainability principles are developed both with high clarity of their intention as well as sufficient flexibility to enable implementation in differing contexts. In particular, it is important to assess the impact of bioeconomy on ecosystems and to develop options on how to protect /restore ecosystems while developing bioeconomy. The sustainability principles must be able to give clear direction how to manage situations of conflicting objectives, and ensure that no unintended environmental, economic social consequences follow, preventing unsustainable use of biomass.

Successful proposals are expected to:

- develop or improve the sustainability assessment of bio-based and food value chains, both from land and aquatic systems and their related value webs to increase transparency for businesses and consumers, enabling better informed choices;

- analyse the performance of bioeconomy innovation ecosystems with regard to social, economic, and environmental sustainability, and demonstrate their long-term feasibility (e.g. with regard to infrastructure, climate adaptation, or ecosystem protection and restoration). Demonstrate the applicability of bioeconomy sustainability principles in regional case studies, based on the concept of Regional Innovation Valleys for Bioeconomy and Food Systems[189];

- identify and address challenges for regions to deploy sustainability principles and providing policy recommendation to overcome them.

The possible participation of the JRC in the project would ensure that the approach proposed is compatible with the bioeconomy working streams of the Knowledge Centre for Bioeconomy.

International cooperation is encouraged, such as with the United States of America or Latin America and the Caribbean.

This topic should involve the effective contribution of Social Sciences and Humanities (SSH) disciplines, including gender studies[190].

Proposals should include a dedicated task, appropriate resources and a plan on how they will seek synergies with other with other EU programmes and funding instruments initiatives, and ensure complementarities with relevant activities carried out under other initiatives in Horizon Europe (e.g. HE 2021-2024 WP ZeroPollution and CircBio funded projects).

Proposals should build on the findings of the "Global Resources Outlook [191]" 2024 from the International Resource Panel.

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188 Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU

189 Concept of Regional Innovation Valleys for Bioeconomy and Food Systems

190 See overview of gender and EU bioeconomy: Infografías COOPID AP. See overview of gender in bioeconomy literature: Gender and women in scientific literature on bioeconomy:A systematic review - ScienceDirect

HORIZON-CL6-2025-03-GOVERNANCE-05: Exploring options to resolve land and sea use competition

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 9.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.

Expected Outcome: In line with the European Green Deal, the EU's climate targets for 2030 and 2050 and the bioeconomy strategy vision for an economic system that acts within planetary and social boundaries, the successful proposal will contribute to the impact of this Destination on just societal transformation.

Project results are expected to contribute to all of the following expected outcomes:

- improved understanding of direct and indirect implications of current and future regional, national and EU policies and targets on land and sea and biomass use that are relevant in the regional context;
- better assessment of existing and emerging trade-offs across environmental (including climate mitigation and adaptation and protection and restoration of biodiversity), social and economic objectives under a broad range of regional ecological, economic and societal contexts;
- improved deliberation tools that will support better-informed policy- and decision-making processes on a national and regional level that comprehensively assess the European Green Deal related policy domains.

Scope: An efficient allocation and management of land is a prerequisite for sustainable and circular bioeconomy that aims to guarantee the preservation and restoration of biodiversity and healthy ecosystems while providing sufficient biomass for the production of food, materials and energy required for peoples' wellbeing. On one hand we see a decline of biodiversity, a gap in ecosystem carbon sequestration or lacking capacity of the biosphere to

191 Global Resources Outlook 2024 | UNEP - UN Environment Programme

absorb pollutants; on the other hand the increasing competition of biomass use for food, materials, and energy indicates a sustainable biomass gap in Europe[192]. Projections indicate that this sustainable biomass gap could be exacerbated in the decades to come. To anticipate potential areas of conflicts and to develop holistic and coherent policy packages on biomass and land and sea uses requires tools that can inform policy makers how environmental, economic and social objectives can be met based on the available sustainable biomass, in order to close the biomass gap while assessing and minimizing the environmental, economic and wider societal impact and considering social justice and equality aspects on local, regional and EU levels. The Joint Research Centre is working on a deliberation tool on 'Integrated Bioeconomy Land Use Assessment' at the European level. However, an assessment at such aggregate rough level is not sufficient for informing policies at national and regional level. This topic will further build on the work of the JRC to improve context-specific deliberation tools that can assess social and economic outcomes of policies at regional level and support regional policy makers in finding best context-specific policies related to land and sea and biomass.

Successful proposals are expected to:

- develop methodologies, tools, and processes for regional policy- and decision-makers to carry out integrated bioeconomy land and sea and biomass use assessments, with the objective to minimize the ‘land/sea footprint’ and openly deliberate on different land and sea and biomass uses and their feasibility, viability, and societal desirability. The assessment shall consider natural, semi-natural, and managed (agricultural and forestry, fisheries and aquaculture) ecosystems and the impacts of land/sea use on ecosystem conditions, biodiversity and supply of ecosystem services;

- assess and develop integrated and coherent policy visions to improve land and sea and biomass use in local and regional contexts. The different visions described qualitatively will be quantitatively represented in the deliberation tool, which shall thus be able to capture different configurations of land and sea and biomass use, including dietary needs and possible shifts, energy uses, the expansion of bio-based products, carbon farming and report relevant social, economic and environmental indicators of such configurations; considering the challenges to land/sea ownership and the options to resolve them;

- demonstrate how the deliberation tool is implemented in a network of regions covering different socio-economic situations and climate/ecological zones in the EU and associated countries to improve just and sustainable land/sea management, food security and circular biomass uses.

The possible participation of the JRC in the project would ensure that the approach proposed is compatible with the bioeconomy working streams of the Knowledge Centre for Bioeconomy and with the various JRC’s tools and methodologies developed for the EU bioeconomy assessment.

192 The European Biomass Puzzle — European Environment Agency (europa.eu)

Proposals should include a dedicated task, appropriate resources and a plan on how they will collaborate with other projects funded under this topic and ensure complementarities with relevant activities carried out under other initiatives in Horizon Europe, including the Horizon Europe Mission "A Soil Deal for Europe", and seek synergies with other EU programmes and funding instruments.

Proposals should build on the findings of the "Global Resources Outlook[193]" 2024 from the International Resource Panel. Proposals are encouraged to consider, where relevant, the services offered by European research infrastructuresThe catalogue of European Strategy Forum on Research Infrastructures (ESFRI) research infrastructures portfolio can be browsed from ESFRI website]].

HORIZON-CL6-2025-03-GOVERNANCE-06: Strengthening and connecting bioeconomy networks

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.40 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.40 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [194].

Expected Outcome: In line with the European Green Deal, the EU's climate targets for 2030 and 2050 and the bioeconomy strategy vision for an economic system that acts within planetary and social boundaries, the successful proposal will contribute to the impact of this Destination on just societal transformation.

193 Global Resources Outlook 2024 | UNEP - UN Environment Programme

194 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Project results are expected to contribute to all of the following expected outcomes:

- better understanding and increased awareness of the bioeconomy for a fast deployment of bioeconomy potential benefits and solutions, across the Europe, in economic sectors, rural and coastal areas, cities, communities and governments, and among businesses, citizens, and especially young people;

- better coordination of European bioeconomy initiatives, including those funded by EU R&I framework programmes, and of relevant networks, with a view to strengthening knowledge exchange and synthesis on the bioeconomy for increased an uptake of bioeconomy actions and solutions in businesses, in education and in policy, and for an increased support to achievement of the EU bioeconomy strategy objectives;

- enhanced networking and cooperation on European bioeconomy between relevant actors and stakeholders at European, national and regional levels, as well as outreach and cooperation with relevant international networks and initiatives to foster fast deployment of bioeconomy and biotechnologies actions and solutions;

- increased buy-in from all relevant actors and stakeholders to collaborate and act as bioeconomy changemakers: actors and stakeholders including disadvantaged communities, vulnerable people, women, and youth, but also underrepresented stakeholders like NGOs and investors, in and across sectors, communities, regions, and ministries.

Scope: There is a need to strengthen a Europe - wide network for the bioeconomy to exchange knowledge and to stimulate mutual learning of bioeconomy initiatives and solutions, on the transition to a sustainable and circular bioeconomy, and on its governance – in view of the review of the current EU bioeconomy strategy. Although some platforms for networking and cooperation on the bioeconomy exist, more can be done to strengthen relationship building across European sectors, stakeholder groups, generations, languages, levels of governance, or professions and advance the cross-cutting insights that drive bioeconomy solutions and improved governance. Barriers including insufficient understanding of the bioeconomy concept and its potential, language, limited capacities to engage in knowledge exchange, unsuitable engagement formats, or a lack of mutual understanding are some of the factors that contribute to this situation.

Efforts to strengthen and connect bioeconomy networks across Member States and Associated Countries will foster interconnectedness amongst stakeholders, across sectors, regions and disciplines, to strengthen policy coherence and implementation. It will accelerate relation building and transfer of knowledge on bioeconomy, help the development and implementation of the EU bioeconomy strategy in Europe, and contribute to scale-up place-based solutions that address EU challenges in different regional contexts.

Successful proposals are expected to:

- establish and develop an EU-wide platform (one-stop shop, multilingual) for networking and engagement on the bioeconomy, that brings together EU practitioners, researchers, investors, policy makers and education providers, and reaches out to relevant international initiatives such as UNEP's International Resource Panel, the International Advisory Council on Global Bioeconomy (IACGB), the International Bioeconomy Forum;

- develop communication strategies and tools, and organise events to inform EU, national and regional actors and stakeholders about bioeconomy deployment, successful bioeconomy initiatives and solutions (i.e., open access to industrial demonstrations sites), including from relevant EU-funded R&I projects, and other EU programmes (i.e., Interreg: European Territorial Co-operation);

- stimulate dialogue on bioeconomy solutions and initiatives, to build relations, exchange knowledge and support mutual learning, across European sectors, stakeholder groups, generations, languages, levels of governance, or professions; align these activities with needs under the EU bioeconomy strategy and related policies including on climate and biodiversity;

- implement lean business models to manage the platform (e.g. secretariat, operations, events) and its activities in a sustainable manner beyond the end of the project using public and private funding;

- liaise and collaborate with bioeconomy education institutes for improved skills development initiatives and networks to develop and deploy innovative interactive bioeconomy education material in support of both the informal and formal education at all levels;

- engage and train investors on the European bioeconomy.

Proposals are encouraged to work together with relevant initiatives including those of the European Commission's Joint Research Centre (Knowledge Centre on Bioeconomy, Bioeconomy Monitoring System), the Circular Biobased Europe Joint Undertaking, the European Circular Economy Stakeholder Platform, and BIOEAST. Proposals are expected to build on results from EU R&I projects including BioVoices and ShapingBio.

HORIZON-CL6-2025-03-GOVERNANCE-07: Strengthening the European Research Area by enhancing the bioeconomy research and innovation ecosystem in BIOEAST countries

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately.

project	Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.00 million.
Type of Action	Coordination and Support Actions
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [195].

Expected Outcome: In line with the European Green Deal priorities, the EU's climate targets for 2030 and 2050 and the bioeconomy strategy vision of an economic system that acts within environmental and social boundaries, the successful proposal will contribute to the impact of this Destination on just societal transformation by supporting the creation of a joint programming initiative aiming to align national R&I agendas in BIOEAST [196] countries, Ukraine, Moldova, and the Western Balkans.

Project results are expected to contribute to all of the following expected outcomes:

- improved research and innovation capacities in the bioeconomy, by strengthening soil and water resilience, enhancing food systems security, and promoting sustainable biomass valorisation through the adaptation of modern biorefinery concepts and biomanufacturing techniques;

- improved coordination and collaboration among stakeholders within the macro-region to address regional challenges, to coordinate research efforts at local, national, macro-

[195] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[196] www.bioeast.eu The Central-Eastern European Initiative for Knowledge-based Agriculture, Aquaculture and Forestry in the Bioeconomy – BIOEAST – offers a common political commitment and shared strategic research and innovation framework for working towards sustainable bioeconomies in the Central and Eastern European (CEE) countries (Czech Republic, Hungary, Poland, Slovakia, Bulgaria, Croatia, Latvia, Lithuania, Estonia, Romania, Slovenia).

regional and European levels, fostering a shared vision for climate-neutrality and sustainable and circular bioeconomy;

- strengthened macro-region's research and innovation ecosystem through integration of public and private stakeholders that lead to tangible projects which drive fair and sustainable socio-economic development and environmental sustainability, including contribution to the reduction of biodiversity loss and to climate action;

- established a large-scale macro-region-oriented research and innovation-driven joint programming initiative, including a detailed plan of action, a budget justification, and a timeline for implementation;

Scope: This call targets consortia interested in alignment of research and innovation agendas for sustainable natural resources, with a particular attention to soil and water resilience, food systems security, and sustainable biomass valorisation in the bioeconomy. The primary goal is to enhance research and innovation capacities, while fostering ownership in BIOEAST and EU accession countries, with special focus on Ukraine, Moldova, and Western Balkans. Based on the BIOEAST Initiative involvement and format, the proposal should be able to mobilise the research funders and managers, but also thematic networks from the macro-region. For establishing the knowledge transfer and good cooperation, consortia should include entities from EU Member States with significant experience of managing joint research initiatives and partnerships. Collaboration with the BIOEAST Initiative is expected to be instrumental in achieving the outcomes of the project.

Consortia are encouraged to demonstrate the potential for impact and scalability of their proposed activities. Proposals should collaborate and ensure synergies with ongoing and past projects on bioeconomy governance[197], and collaborate with the Circular Bio-based Europe (CBE) JU and its widening strategy. The successful proposal will contribute to:

- engage ministries, research funders, and managers as well as thematic networks, to mobilise resources and create synergies between European and national level funds;

- establish frameworks for communication and coordination among European and national programme owners and managers to reduce fragmentation;

- enhance long-term cooperation to amplify research impact on socio-economic development while supporting widening and enlargement processes;

- address the region's geopolitical, research, and innovation challenges by achieving coherence across research, policy, and funding instruments. This includes fostering climate neutrality,contributing to the reduction of biodiversity loss, promoting a circular, sustainable bioeconomy through an integrated macro-regional approach to research and innovation;

197 BIOEASTsUP, BOOST4BIOEAST

Deploying and adding value to environmental observations

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-03-GOVERNANCE-08: Effective environmental observing systems and associated governance

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering different use cases, grants will be awarded to applications not only in order of ranking but at least also to those applications that address another use case than the higher ranked ones, provided that the applications attain all thresholds.

Expected Outcome: In support to the implementation of the European Climate Law, the EU climate adaptation strategy or the EU's F-gas Regulation [198] and related international environmental agreements, successful proposals will contribute to the expected impact of this Destination on more accessible and interoperable environmental observations.

Project results are expected to contribute to all of the following expected outcomes:

- more cost-effective and user-friendly environmental observing systems serving the needs of science, as well as policy and decision makers at various levels, based on enhanced usability, accessibility, effectivity, interoperability and exploitation of environmental observations;

198 Regulation (EU) n. 2024/573, http://data.europa.eu/eli/reg/2024/573/oj.

- improved international cooperation in support of EU and global climate and environmental monitoring policies and reporting obligations;

- more sustainable and resilient environmental observing systems based on advanced governance models and well-informed decision-making by national, European and international actors.

Scope: Efficiency and cost-effectiveness of observing systems will play a crucial key role in global policies and initiatives such as the Paris Agreement and the WMO Global Greenhouse Gas Watch, the Montreal Protocol and its Kigali Agreement, or GEO initiatives and flagships. Proposals are expected to exploit the latest digital technologies (e.g. Artificial Intelligence, digital twins, IoT) and science (e.g. data assimilation and analysis, or models) to develop innovative, generic, quantitative, cost-effective and user-friendly tools to optimize current and future/emerging orbital (baseline and small satellite constellations) and non-orbital observing systems (e.g. autonomous systems, manned and unmanned aerial vehicles (drones), citizen science networks) and their combinations from a performance and investment point of view, using approaches like Observing System Experiments (OSEs) and Observing System Simulation Experiments (OSSEs).

Proposed activities shall identify technical, as well as socio-economic, cultural, geo-political, or other barriers on usability, accessibility (including at international level), effectivity, interoperability and exploitation of environmental observing systems, and propose and support the implementation of innovative, efficient and pragmatic solutions to overcome them. Towards this end, the inclusion of social sciences and humanities (SSH) disciplines is encouraged.

Innovative decision-making approaches shall be investigated to support and facilitate international governance and negotiations at European and global level, as well as national actors on sustainable and resilient environmental observations matters, regarding investments, operations, accessibility, gaps and innovation. Inter-operability with European Data Spaces and other exiting data infrastructures should be considered.

The approaches should be developed and demonstrated in the context of one of the following specific use cases:

- monitoring anthropogenic and natural greenhouse gas emissions and sinks;

- ozone depleting substances and F-Gases (Gases under the Montreal Protocol).

Proposals needs to demonstrate a good understanding of data requirements for policy implementation. The optimisation of the observing systems should identify and address in an iterative process the needs of well identified user groups, like for example modelling communities, Copernicus, Destination Earth, international organisations, and regional or national authorities.

Tools and approach should be flexible enough to be applied to other observing systems and examples. The project is expected to benefit from and leverage underlying work of ESA, EUMETSAT, Copernicus, or European Infrastructures (ICOS, ACTRIS, etc.).

International cooperation is encouraged.

HORIZON-CL6-2025-03-GOVERNANCE-09: Delivering Earth Intelligence to accelerate the green and digital transition

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 7.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 15.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Technology Readiness Level	Activities are expected to achieve TRL 7-8 by the end of the project – see General Annex B. Activities may start at any TRL.

Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- accelerate the green and digital transition of economic sectors through the development of end-user applications and decision support systems for operationalisation or commercialisation by public or private service providers;

- successful integration and consolidation of European and national GEO [199] related activities across the EU Member States and Associated countries, that result in effective and operational contributions to the GEO work programme activities, with a clear path towards uptake in Europe and internationally;

[199] Group on Earth Observations (GEO, https://earthobservations.org/) is an intergovernmental partnership working to improve the availability, access, and use of open Earth observations, including satellite remote sensing and in situ data, to impact policy and decision making in a wide range of sectors.

- contribute to the consolidation of the EuroGEO [200] initiative and support the EC Knowledge Centre on Earth Observation (KCEO) on uptake of Environmental Observations (EO) for EU policy making.

Scope: This action is an application-oriented initiative, responding to the new GEO post-2025 strategy and is aimed at combining and advancing existing European Earth observation services and solutions, that were prototyped under relevant Horizon, Copernicus, and other EU and national projects and initiatives, and scaling them up with end-users and customers towards wide adoption. The project shall develop, test and demonstrate 2 to 3 user-tailored, integrated solutions, using advanced digital technologies like Artificial Intelligence, including generative AI, with a clear path towards operationalisation that should correspond to some of the following selected focus areas of the GEO Post-2025 implementation plan:

- Sustainable Agriculture and Food Security
- Water Resilience
- Ecosystems and Biodiversity
- Carbon Management
- Disaster Resilience.

The solutions should be co-designed with relevant European users, including local, regional and national governments (such as through the Copernicus National User Forums), and mature business plans should be developed in the project to ensure operational uptake after the project, including by public/private procurers or service providers, Copernicus services, or GEO flagships and initiatives.

The activity should leverage European infrastructures and where relevant integrate various remote sensing platforms such as satellites, manned and unmanned aviation (drones). It should further build on and contribute to the existing European digital ecosystem, including different research and service infrastructures, like European data spaces, citizen science initiatives and national, regional, and global databases of in-situ observation, and support their evolution. Clustering and cooperation with other selected projects under this call topic and other relevant projects should be ensured. To this end, proposals shall earmark the appropriate resources for coordination activities accordingly in their work plan.

Outreach and training activities are expected to reach the wider European EO community and to support further the upscaling of European/national/sub-national EO services beyond this project and actively promote pan-European synergies. Efforts should be made in bringing together the EuroGEO community with the Copernicus stakeholder community at European (e.g. Entrusted Entities) and national level (e.g. Copernicus Academies and Relays).

200 EuroGEO (https://earthobservations.org/) is a regional initiative of GEO.

HORIZON-CL6-2025-03-GOVERNANCE-10: Improving and integrating polar observation systems in response to user requirements at local, regional, and international level

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 8.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 16.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering different regions, grants will be awarded to applications not only in order of ranking but at least also to those applications that address other regions than the higher ranked ones, provided that the applications attain all thresholds.

Expected Outcome: Project results are expected to contribute to all following expected outcomes:

- major European contribution to improved and long-term coordination, governance, sustainability, and resilience of international environmental observing systems relevant for polar regions;
- enhanced usability, accessibility, effectiveness, interoperability, and exploitation of environmental observing and data systems, that help improving Earth System and

prediction models, as well as digital twins (the European Digital Twin of the Ocean[201] and Destination Earth[202] in particular);

- improved models in particular for uptake by the Copernicus services.

- support to sustainable management of the polar regions and to decision-making processes for civil society, local or national authorities and stakeholders, as well as EU and international organisations in order to improve their capacity to assess, verify and predict the impact of their actions to address critical challenges, thereby supporting the related EU policies, like the Green Deal, the EU adaptation strategy and the EU arctic policy[203], the Kunming-Montreal Global Biodiversity Framework, the UN 2030 Agenda for sustainable development.

Scope: Long-term, integrated, and sustained observations, building on shared polar observation variables require the development of a "system of systems" approach and extensive coordination at European and international level, which implies setting up interoperable and accessible data systems that provide a more accurate picture of the polar environment and its interactions with the rest of the planet. Proposals should address aspects such as carbon cycle, biogeochemistry, sea ice dynamics, ice sheets, ice shelves, freshwater flows changing marine waters and oceanic circulation, atmospheric composition and conditions, subsea permafrost, degradation of marine habitats and biodiversity.

Proposals should demonstrate how they will contribute significantly to:

- improving marine and cryospheric observing systems, in particular the non-space-based components, focussing on their optimisation, integration, coordination and governance, building on available technologies or technologies in development, including Artificial Intelligence;

- harmonised, standardised and interoperable of FAIR and CARE Polar Data systems (e.g. data collection, processing and management, incl. also historical data), that are able to provide real time information when necessary;

- supporting European efforts in the different governance bodies, for instance in the context of the work of the future European Polar Coordination Office;

- the development of strategies on the medium and long term in order to ensure the sustainability of the observing systems and of the delivery of products and services.

Proposals are expected to focus their scope on only one of the following regions:

- Arctic Ocean and coastal regions

201 https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/restore-our-ocean-and-waters/european-digital-twin-ocean-european-dto_en

202 https://destination-earth.eu/

203 JOIN(2021) 27 final, "A stronger EU engagement for a peaceful, sustainable and prosperous Arctic"

Proposals addressing this region need to additionally take the following into account:

- The Arctic counts some four million people living in it. The improvements of the overall observing systems should include community-based monitoring and the local, traditional and indigenous knowledge and where relevant, be co-designed with local communities and Indigenous peoples and with other relevant stakeholders with view to, inter alia, developing products and services needed by Arctic actors and indigenous peoples for adapting to the changing Arctic.

- The action should support the implementation of the Roadmap for Arctic Observing and Data Systems Sustaining Arctic Observing Networks (SAON-ROADS),[204] strengthen Arctic Ocean observations and their coordination, and ensure complementarities with the activities on societal benefit assessment of Arctic observing systems undertaken by the Joint Research Centre.

- Antarctic shelves and Southern Ocean

Proposals addressing this region should additionally support the establishment of the UN Ocean Decade programme Antarctica InSync,[205] and contribute to the Scientific Committee on Antarctic Research (SCAR).

In addition to the chosen regional scope, proposals should strengthen the coupling between the polar regions themselves, both for in-situ and satellite observations, for instance through harmonised observing strategies (including cost-effective and user-friendly methods to assess and optimize the design, investment in and operations of polar observing systems), harmonised measurement methodologies, the development of Shared Essential Polar Variables, and interoperable, Arctic and Antarctic data systems.

To ensure that all work streams are coherent and complementary, the proposals should include dedicated tasks, appropriate resources and a plan on how they will collaborate with the other project funded under this topic.

The proposal should also consider collaborations with other relevant projects such as HiAAOS,[206] POLARIN,[207] and other projects which are part of the EU Polar Cluster[208] as well as with relevant European research infrastructures[209].

This topic is part of a coordination initiative between ESA and the European Commission on Earth System Science. The EC-ESA Earth System Science Initiative enables EC and ESA to support complementary collaborative projects funded on the EC side through Horizon Europe and on the ESA side through the FutureEO programme. Proposals should therefore articulate how they will coordinate with relevant ESA activities and projects selected under the

204 https://journalhosting.ucalgary.ca/index.php/arctic/article/view/74330
205 https://oceandecade.org/actions/antarctica-insync
206 https://cordis.europa.eu/project/id/101094621
207 https://cordis.europa.eu/project/id/101130949
208 https://polarcluster.eu/
209 The catalogue of European Strategy Forum on Research Infrastructures (ESFRI) research infrastructures portfolio can be browsed from ESFRI website https://ri-portfolio.esfri.eu/

Invitation to tender "ESA polar science cluster – research opportunities: Antarctica, the Southern Ocean, and the Arctic"[210].

In this context, the activity should also take into consideration and support the valorisation of future Sentinel expansion missions: CIMR, CRISTAL, ROSE-L, with the possibility to co-ordinate with pre-launch campaigns like CRISTALair and CIMRair. These Sentinels expansion missions will provide observations of vital parameters for the sea-surface, ice and snow coverage (e.g. sea-surface temperature and salinity, sea-ice concentration and thickness, overlying snow depth and ice-sheet elevations) at an increased revisit time for Arctic and Antarctic. Proposals should therefore also articulate how they will coordinate with the relevant ESA activities and projects selected under the Invitation to Tender "ESA Sentinel User Preparation Polar Science Foundational Experiment" [211]

This action offers an opportunity for Europe to continue playing a leading role in Polar research and knowledge provision at the international level, thereby contributing to the implementation of the G7 Future of the Seas and Ocean Initiative priority on Arctic Ocean Observing,[212] GEO Blue Planet Initiative, to the All-Atlantic Ocean Research and Innovation Alliance[213], the Global Ocean Observing System (GOOS), the Global Climate Observing System (GCOS), and to the further development of the Copernicus Services and Copernicus Arctic Hub[214]. International cooperation is therefore encouraged, also with view to the 5th International Polar Year (2032-33).

If projects collect in-situ data and marine observations, beneficiaries should make them openly available e.g. through the European Marine Observation and Data network (EMODnet), based on FAIR (findable, accessible, interoperable, reusable) principles.

Digital and data technologies as key enablers

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-03-GOVERNANCE-11: Enhancing sustainable rural development through digital twins for rural communities, agriculture and forestry

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

210 https://eo4society.esa.int/2024/03/07/invitation-to-tender-esa-polar-science-cluster-research-opportunities-antarctica-the-southern-ocean-and-the-arctic-fixed-call-for-proposal/
211 https://eo4society.esa.int/event/eo-science-for-society-info-day-2024
212 www.g7fsoi.org
213 www.allatlanticocean.org
214 www.arctic.hub.copernicus.eu

Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). The following additional eligibility criteria apply: The proposals must use the multi-actor approach. See definition of the multi-actor approach in the introduction to this Work Programme part.
Technology Readiness Level	Activities are expected to achieve TRL 5-6 by the end of the project – see General Annex B. Activities may start at any TRL.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties. In this case, the proposals must define the process of selecting entities for which financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 60 000. A maximum 30% of the EU funding can be allocated to this purpose.

Expected Outcome: In line with the long-term vision for rural areas and the common agricultural policy (CAP), the successful proposal supports rural communities to benefit from digital technologies and strengthen their capacities to the effective and efficient deployment of innovative solutions.

The proposals therefore contribute to the destination's expected impacts by supporting the development of stronger, connected, resilient and prosperous rural areas providing rural actors with improved decision-making solutions enabled by digital and data technologies.

Projects results are expected to contribute to all of the following expected outcomes:

- rural communities, farmers, foresters and other rural actors take advantage of data and digital technologies available to help them meet sustainability objectives while enhancing rural economy;

- rural communities are supported in exploring different pathways to make villages an ideal place to live for its residents, achieved through strengthened capacities in data-driven decision-making and -monitoring and foresight;

- a stronger rural innovation ecosystem is in place bringing together public and private players and improving attractiveness of rural areas;

- collaboration across different rural actors is fostered through innovative smart governance solutions enabling data and evidence-based policy making.

Scope: Considering that approximately one third of EU citizens live in rural areas, it is key to empower rural communities to transition towards sustainability so that no one is left behind. In this context, digital twins' technology has gained attention in the past decade because of its potential in addressing challenges across numerous application areas and transforming the way businesses and public administrations operate. Nevertheless, research and innovation related to the use of digital twins in rural areas and relevant key economic sectors is still limited and requires further exploration, testing and demonstration to fully exploit their potential and reach higher level of maturity and scalability across different territorial and sectoral contexts.

Proposals should:

- design, prototype and test the use of digital twins to improve sustainability and resilience of rural areas and related key sectors (i.e. agriculture, forestry and other relevant sectors). Innovations should be co-created with rural actors to respond to their needs and tested for their feasibility for the territorial development opportunities or drawbacks that they bring;

- develop a detailed digital map of the villages in three-dimension employing digital and data technologies. The map should be freely accessible to local authorities, researchers, private companies and other relevant actors to monitor key parameters, test ideas and explore smart(er) and more sustainable forms of village development. Where relevant, focus should be given to the management and planning of green areas as well as other natural elements in the village thus improving resilience to climate change;

- develop a public web-based platform allowing users to visit the 3D model of the village twins remotely, including through the use of immersive technologies (e.g. Virtual Reality). By integrating various technologies, the platform should allow the user to access information on selected elements of the cultural, historical and/or natural heritage of the village for promotional purposes while establishing a feedback mechanism for residents to provide feedback on existing and proposed initiatives of village development;

- asssess the potential of the investigated digital technologies in promoting forms of collaborative, open and citizen-centric governance;

- support training and capacity building for local administrations and rural stakeholders in order to share best practices, develop skills, create and maintain a rural innovation ecosystem enabling them to benefit from the innovations developed for the digital transition in rural areas;

- measure and assess the costs and benefits of the implementation of digital twins in the villages and selected areas of application, including barriers to their uptake and acceptance by the target groups, adequacy and availability of existing public/private funding opportunities, incentives, and new business models supporting their development beyond project duration;

- provide research, business and policy recommendations supporting the successful development of the investigated technologies in rural areas and relevant key sectors.

The application of the developed technologies should support the implementation of the smart villages concept oriented towards relatively underdeveloped and remotely located rural areas and communities.

Proposals must implement the 'multi-actor approach', with a consortium based on a balanced mix of relevant actors with complementary knowledge to achieve the objectives of the projects, including for instance universities, research and technology organisations, associations/networks.

Proposals must integrate the gender dimension in the implementation of the activities (e.g. to address gender-specific needs affecting design and testing of the developed technologies, when investigating benefits and limitations, gathering and analysing disaggregated data, in the development of training and communication material as well as research and policy recommendations).

Proposals are expected to take into account relevant (forthcoming) EU legislation relevant for the technology and territorial context in the scope of this topic.

Moreover, proposals should build on results and ensure complementarities with other Horizon 2020/ Europe as well as other relevant EU-funded initiatives and projects (e.g. EU Missions, project that may follow from the topic “HORIZON-CL6-2024-GOVERNANCE-02-01: European Partnership of Agriculture of Data”) and demonstrate adequate planning and use of resources for this purpose.

Proposals may involve financial support to third parties, e.g. to academic researchers, hi-tech start-ups, SMEs, and other multidisciplinary actors, to develop, test or validate the developed approaches, tools and applications and/or to provide other contributions to achieve the project objectives.

This topic should involve the effective contribution of social sciences and humanities (SSH) disciplines. By integrating relevant SSH expertise, the successful proposal aims to produce meaningful results that enhance the societal impact of related research activities, while delivering locally-based solutions, engaging residents, rural actors and leading to behavioral changes.

Proposals should cover various biogeographical regions with a balanced coverage reflecting the various pedo-climatic zones in Europe in a representative way and taking into account

different types of villages (e.g., different size, remoteness, degree of digital maturity, reliance on economic sectors, etc.).

Proposals should develop diverse practice-oriented dissemination materials (e.g., audiovisual materials, brochures) presenting the R&I solutions developed.

Strengthening agricultural knowledge and innovation systems (AKIS)

Proposals are invited against the following topic(s):

HORIZON-CL6-2025-03-GOVERNANCE-12: Increasing knowledge flows to practice within Agricultural Knowledge and Innovation Systems (AKIS) via thematic networks

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 3.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must use the multi-actor approach. See definition of the multi-actor approach in the introduction to this Work Programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [215].

Expected Outcome: Successful proposals will support the implementation of policies related to agriculture, forestry and/or rural areas including other relevant climate and environmental

[215] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

policies, in particular the cross-cutting objective of the common agricultural policy (CAP) to enhance knowledge of AKIS actors, by bridging the gap between science and practice and sharing knowledge in a language that is easy to understand and targeted to end-users[216]. They will address the need of farmers and/or foresters and/or other rural actors for impartial and tailored knowledge that is key for improving sustainability and essential transition processes. The exchange of knowledge supported by the thematic networks will foster economically viable and sustainable agriculture and/or forestry and/or rural areas and build trust between the main AKIS actors.

Project results are expected to contribute to all of the following expected outcomes:

- Practice-oriented research findings, innovative solutions and best practices, are presented in an attractive, understandable way, easily accessible by and intensely disseminated to end-users.
- Practice-ready knowledge and solutions, both generated by research and innovation[217] as well as collected from practice, are maintained in the long-term (beyond the duration of projects), widely shared and used by end-users.
- The flow of practice-ready knowledge and solutions between end-users and all other relevant AKIS actors is increased in the EU and Associated Countries in a geographically balanced way, creating spill-overs and taking into account the differences between the territories.

AKIS at European and national/regional levels become more effective by adding value to the new and existing knowledge which is not well-known and used by end-users, improving cost-effectiveness of solutions as well as a supporting more informed, interconnected and engaged AKIS community in and across agriculture and/or forestry.

Scope: Despite the sustained investment in R&I projects aimed at addressing the challenges or seizing the opportunities within farming and/or forestry and/or rural areas, research findings, innovative solutions, practical knowledge and best practices, are not sufficiently used in practice. There is an important need to collect, present and share them widely with end-users in an easy understandable and attractive format, using the most efficient approaches and channels to reach them. Thematic networks, acting at EU level to address the need, are essential because national/regional and sectoral AKISs are insufficiently connected and organised to intensify thematic collaboration between researchers, advisors and end-users.

Proposals should:

- Compile all up-to-date scientific and practical knowledge, best practices and innovative solutions, which are ready for use in practice, but not sufficiently known or used by the

[216] An "(end-)user" of R&I result(s) is a person who is him/herself putting the results into practice; depending on the theme of the thematic networks, end-users could be farmers and/or foresters and/or other rural actors, or all of them.

[217] Including CAP-funded EIP-AGRI operational groups, Horizon-funded R&I projects and other R&I activities beyond those funded under CAP and Horizon

end-users. The theme of the thematic network should be selected in a bottom-up way in order to respond to the most urgent needs from practice.

- Explain the relevance of the theme in relation to end-users' need(s), clarifying the added-value of the proposal and how it avoids duplication in relation to the ongoing or completed thematic networks and projects. Updating of a theme already covered by a finished thematic networks is allowed, but the added value of the thematic network proposal should be clearly explained.

- Develop and share widely an extensive range of useful, applicable and appealing end-user and advisory materials and trainings, including (but not limited to) targeted advice, cross-visits, on-farm demonstrations, other peer-to-peer learning activities, etc. The information provided should be easy to access and understand. To this end, whenever possible, the information provided should serve education and training, and make use of audio-visual communication tools and automatic translation services that allow dissemination beyond the language barriers.

- Perform cost-benefit analysis of the collected practices, as much as possible, and include these aspects in the communication and dissemination materials and trainings.

- Feed all outputs directly into European and national AKIS knowledge channels, including (but not limited to) the EU CAP Network EIP-AGRI project database[218], National CAP Networks, the EU-FarmBook online platform[219], the modernAKIS[220] website, and relevant advisory networks[221]. Choose the dissemination channels most used by end-users (practitioners) in the diverse contexts of each country. Mobilise also relevant AKIS actors at national/regional and European levels to share the outputs of the projects widely across Europe.

- Include a dedicated work package around the theme chosen, providing adequate resources for cooperation and knowledge exchanges with the EIP-AGRI Operational Group projects (OGs) from different Member States supported under the Rural Development Programmes (RDP) 2014-2022 and the CAP Strategic Plans (CSP) 2023-2027.

Proposals must implement the 'multi-actor approach', with a consortium based on a balanced mix of relevant actors with complementary knowledge clearly activating farmers and/or foresters and their advisors in the identification of the most urgent needs from practice as well as the collection, validation and widespread dissemination of knowledge and solutions within AKIS. The resulting project should run for a minimum of 3 years.

The proposal should present a plan on how the thematic network and its outputs will be maintained in the long-term beyond the project duration.

218 EIP-AGRI project database | EU CAP Network (europa.eu)
219 EU-FarmBook (eufarmbook.eu)
220 modernAKIS
221 Advisory networks – connecting advisors across the EU | EU CAP Network (europa.eu)

The consideration of social diversity (including gender and other categories) in the dissemination activities of the thematic networks is encouraged.

HORIZON-CL6-2025-03-GOVERNANCE-13: Strengthening knowledge and skills of advisors and integrating them into Agricultural Knowledge and Innovation Systems (AKIS) via an EU advisory network

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 7.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 7.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must use the multi-actor approach. See definition of the multi-actor approach in the introduction to this Work Programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties. The support to third parties can be provided in the form of grants. The maximum amount to be granted to each third party is EUR 50 000. In this case, the proposals must define the process of selecting entities for which financial support will be granted, within open calls for tenders to be evaluated in a fair and transparent process. A maximum 25% of the EU funding can be allocated to this purpose.

Expected Outcome: Successful proposals will support all policies relevant to agriculture and related climate and environmental policies, in particular the cross-cutting objective of the common agricultural policy (CAP)[222]. They will do so by better integrating competent and impartial advisors (both public and private) within AKIS, increasing exchanges between them, and enhancing their knowledge and skills that are needed for providing high quality advice to farmers and speeding up the transition to sustainability.

[222] Article 6(2) of the Regulation (EU) 2021/2115: fostering and sharing knowledge, innovation and digitalisation in agriculture and rural areas, and encouraging their uptake by farmers through improved access to research, innovation, knowledge exchange and training

Project results are expected to contribute to all of the following expected outcomes:

- Interactions between the impartial advisors and other relevant AKIS actors is enhanced, and integration of impartial advisors within the national/regional and European AKIS is strengthened,
- Impartial advisors are better equipped with the necessary, up-to-date knowledge and skills enabling them to support farmers with high quality advice in addressing the challenges and seizing opportunities related to sustainability transitions in line with all objectives of the CAP as well as other relevant climate and environmental policies.
- Sharing and use in practice of existing and new knowledge and solutions by farmers is accelerated and widespread thanks to more competent and impartial advisors, leading to improved sustainability of farms.

Transparency, credibility and practicality of the tools to assess sustainability (economic, social and environmental) performance of farms, estimate their potential to improve, and monitor their progress, are improved, harmonised and widely used by impartial advisors and farmers.

Scope: Advisors play a key role in steering and influencing farmers' decisions. Hence, advisors are best placed to inspire farmers to change their practices that improve the sustainability performance of farms. A novelty in the current CAP strategic plans[223] is that advisors must be integrated within the Member States' AKIS. Advisors must be impartial, competent and up to date on scientific and innovation developments. They must be able to provide holistic advice covering the economic, social and environmental dimensions of sustainable agriculture. They should be able to translate this knowledge into concrete practical solutions for farmers adapted to specific local circumstances. Besides, they should be prepared to provide innovation support services[224], based on the interactive innovation model[225]. The ambition of the Conversion to a Farm Sustainability Data Network (FSDN) is also that the advisors will be able to use harmonised, robust and reliable tools to assess the sustainability (i.e., economic, social and environmental) performance of farms[226] over time and accordingly provide informed advice[227].

Proposals should:

- Improve the organisational development of advisors, both public and private, within Member States' AKIS in a collaborative way, including by:
    - improving the provision and management of knowledge useful for practice, including from a thematic angle,

223 Article 15 of the Regulation (EU) 2021/2115
224 Article 15(4)(e) of the CAP regulation R.2021/2115
225 Article 127(3) of the CAP regulation R.2021/2115
226 In coordination with the Farm Sustainability Data Network (FSDN).
227 Conversion to a Farm Sustainability Data Network (FSDN) (europa.eu)

  - moving to more interactive and networked structures, deepening the advisors' integration into AKIS at EU and national/regional levels,
  - advancing and making their working methodologies and tools more interactive and effective.

- Connect impartial advisors across all EU Member States in an EU network with a view to share ready to use knowledge and experiences on how to best tackle challenges/seize opportunities on farms. To this end strong interaction with AKIS Coordination Bodies organising advice and knowledge flows in their Member States will be necessary.
- Improve and support the understanding and implementation of the interactive innovation model by the advisory community (also with a view of acting as innovation support services for the creation and implementation of EIP-AGRI Operational Groups), including by illustrating it with practical examples and providing methodology and training for continued professional development.
- Improve advisors' knowledge, skills and tools across the EU in line with all the objectives of CAP as well as other relevant environmental and climate policies in areas of high interest to practitioners. This encompasses, among others:
  - sound thematic organisation of advisors and other relevant actors within AKIS, ensuring stronger links between research, education, advisors and farmers and encouraging the wider use of available knowledge across the EU,
  - organisation of substantial amounts of activities to improve collaboration between advisors across the EU and at national/regional levels, and effectively and widely share their knowledge and skills (such as, but not limited to, train the trainer programmes, cross-visit, clustering and cross-fertilisation events, etc.)
  - development and sharing of trainings, materials, and tools useful for advisors and their clients, for example peer-to-peer counselling, master classes, advice modules, communication and education materials, etc.
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  - creation and management of an online platform as a reference point for trainings and training materials, tool-boxes, best practice examples (taking strong account of the cost-benefit elements), database of advisors' contacts and profiles (including education, professional experience and field of expertise), and other information relevant for advisors and their clients,
  - development and application of an approach to motivate advisors to participate in trainings and other knowledge exchange activities,
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  - involvement and cooperation of advisors in knowledge hubs where practical knowledge is collected and shared,

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  - development and/or improvement and harmonisation of the tools available to the advisors supporting them in providing advice related to sustainability performance of the farms, in line with existing policy frameworks.

- Ensure communication to the scientific community of research and innovation needs from practice.

Proposals should include a dedicated task and appropriate resources to collaborate with and use efficiently the outputs and activities of the relevant AKIS-related projects and networks (including those funded under the EU Mission 'Soil Deal for Europe' and relevant EU partnerships), ensuring complementarities and avoiding duplication of efforts, in particular: advisory [228] and thematic [229] networks, ATTRACTISS, modernAKIS, i2connect, EU-FarmBook and the project that will be selected under the topic *HORIZON-CL6-2025-03-GOVERNANCE-14: Preparing farmers, their workforce and advisors to the future of agriculture by providing the right knowledge and skills at the right time and place*.

Proposals must implement the 'multi-actor approach'. Minimum 50% of the number of people involved in the project should be advisors spending at least half of their time on giving advice to farmers / foresters / other rural actors. The partners within the consortium should be well networked with advisors overall and have the capacity to involve as many of advisors professionally active in providing advice to farmers / foresters / other rural actors as possible across the EU into the activities of the project that aim at enhancing their knowledge and skills and better integrating them into AKIS. The project should run for a minimum of 5 years.

Proposals should cover a wide range of advisors from all EU Member States and improve collaboration between them, using the countries' AKIS structures (including AKIS Coordination Bodies) as intermediaries. To this end, proposals may involve financial support to third parties to ensure the full coverage of the EU in the activities of the EU advisory network. Consortia need to define the selection process of the advisors / advisory services and/or other relevant AKIS actors, for which financial support may be granted.

Proposals should consider gender and other social categories (disability, age, socioeconomic status, ethnic and/or cultural origins, sexual orientation, etc.), and their intersections in the diverse activities of the project.

228 Advisory networks – connecting advisors across the EU | EU CAP Network (europa.eu)
229 Thematic networks – compiling knowledge and solutions ready for practice | EU CAP Network (europa.eu)

HORIZON-CL6-2025-03-GOVERNANCE-14: Preparing farmers, their workforce and advisors to the future of agriculture by providing the relevant knowledge and skills at the right time and place

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 5.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: The proposals must use the multi-actor approach. See definition of the multi-actor approach in the introduction to this Work Programme part.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [230].

Expected Outcome: Successful proposals will support all policies relevant to agriculture, and in particular the cross-cutting objective of the common agricultural policy (CAP), by enhancing the knowledge and skills of farmers, their workforce and advisors needed to address the challenges and seize the opportunities related to sustainable agriculture of today and tomorrow.

Project results are expected to contribute to all of the following expected outcomes:

- Farmers, the agricultural workforce and advisors have all the relevant, diversified and up-to-date knowledge and skills to cope with and benefit from the various drivers of change.

[230] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- Agricultural educational and training systems are strengthened and more effective in preparing the current and future generations of farmers and the agricultural workers to the future of farming, in particular thanks to lifelong learning (LLL) activities[231].

Introduction, spread and implementation by farmers in practice of useful and up to date knowledge and innovative solutions leading to improved sustainability of farming systems in all three dimensions – economic, social and environmental – are accelerated.

Scope: Knowledge and skills are key enablers for accelerating the sustainability transitions in agriculture and, at the same time, make sure that they are socially fair and just. To be prepared and benefit from the various environmental, technological and socio-economic divers of change, the farming community, specifically farmers, their workforce, and advisors, should be able to learn and acquire the relevant knowledge and skills in a lifelong journey.

Against this background, proposals should:

- Develop and apply methods to explore and foresee what knowledge and skills farmers, their workforce and advisors currently have and need/will need in the future for the sustainability transitions, given the changing context.

- Investigate how farmers, their workforce and advisors are and should acquire knowledge and skills (e.g., incentives, methods and tools, timing, frequency and place, etc.); as well as who is and who should be providing that knowledge and skills in order for lifelong learning (LLL) to be attractive, effective and up to date, including also novel practice-oriented knowledge and innovations from multi-actor type of projects.

- Map and assess the effectiveness of the existing knowledge and skills providers, and methods/tools/solutions that they use to improve knowledge and skills of farmers, farm workforce and their advisors needed for the sustainability transitions in view of the diverse drivers of change.

- Map and assess agricultural education and training systems across the EU and beyond and provide recommendations for improving educational and training curricula in view of supporting the transition to sustainable agriculture.

- Explore and provide best practices on how to link the knowledge collected within the AKIS structures to provide valuable input for LLL, including education and training systems, aimed at supporting transition to sustainable agriculture.

- Based on the mapping of needs and approaches, co-create new, effective methods/tools/solutions/ways to increase interactions between researchers, advisors, farmers and other AKIS actors in view of enhancing flows of knowledge and skills (stimulating learning in different manners), and enable farmers, their workforce and

[231] Lifelong learning (LLL) refers to the entire range of formal, non-formal and informal learning activities, both general and vocational, undertaken by adults after leaving initial education and training.

advisors to get the necessary knowledge and skills at the right time and support them in decision-making towards improved sustainability of farming systems.

- Develop new and/or improve existing generative AI tools to enable the farmers and other AKIS actors quick, easy and affordable access to impartial, relevant knowledge and support them in their decision-making towards improved sustainability of farming systems, in the changing context.

- Develop innovative approaches to integrated education and training systems (including various AKIS actors, settings, projects, materials, methods, tools, etc.), and set up pilot actions to test, assess and spread effective approaches in diverse contexts and geographical settings.

- Develop a certification system that acknowledges and rewards farmers, their workforce and advisors who engage in LLL on sustainability issues. This system should include different levels of recognition based on the extent and depth of LLL activity completed. The certification could be visible, verifiable, and tied to tangible benefits, providing a strong incentive for continuous learning.

- Look into synergies between EU instruments and propose practical approaches to better connect Horizon-funded projects, EIP-AGRI operational groups & Erasmus+ projects to education and training systems.

Proposals should include a dedicated task and appropriate resources to cooperate with project that will be selected under the topic *HORIZON-CL6-2025-03-GOVERNANCE-13: Strengthening knowledge and skills of advisors and integrating them into Agricultural Knowledge and Innovation Systems (AKIS) via an EU advisory network*, ensuring complementarities and avoiding duplication of efforts.

Proposals must implement the 'multi-actor approach', with a consortium based on a balanced mix of relevant actors with complementary knowledge and information clearly activating farmers, their workforce and advisors, agricultural educators and trainers and other relevant AKIS actors in order to better understand their current and future needs for knowledge and skills, provide relevant information (e.g., weather, market situation, etc.) and co-create with them the best approaches to effectively address these needs.

Proposals should consider in the research and innovation activities regional/context specificities, evolving farm structures and labour organisation, as well as social diversity (including gender, vulnerable groups and other categories).

This topic should involve the effective contribution of social sciences and humanities (SSH) disciplines.

HORIZON-CL6-2025-03-GOVERNANCE-15: Supporting the implementation of Horizon projects with multi-actor approach (MAA) and boosting the use of their results in practice

Call: Cluster 6 Call 03	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [232].

Expected Outcome: Successful proposals will support the relevant policies of the European Green Deal related to Cluster 6, by boosting co-creation of new knowledge and innovative solutions with end-users[233] and boost their use in practice. They will thereby enhance the knowledge and skills of the actors needed for the sustainability transitions.

Project results are expected to contribute to all of the following expected outcomes:

- Horizon-funded projects are effectively implemented by consortia in line with all the multi-actor requirements, providing concrete results that respond to the needs of end-users and are ready to use in practice.

Outcomes of successful multi-actor projects are regularly collected, widely and effectively disseminated to and exploited to a maximum by end-users in practice, addressing challenges and/or seizing opportunities that they encounter.

[232] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[233] An "(end-)user" of R&I result(s) is a person who is him/herself putting the results into practice.

Scope: The interactive innovation model has been implemented since the start of Horizon 2020 based on the multi-actor approach (MAA). Projects with a MAA focus on finding innovative solutions to real needs which 'end users' are facing. In MAA projects, partners with complementary expertise – scientific, practical or other knowledge – join forces and work together at equal level in the project activities from the start to the end. As a result, MAA projects are able to quicker develop innovative solutions that are more ready to be applied in practice and cover real needs. To unleash the full potential of MAA projects, they need to be implemented effectively and their results shared widely through the most effective channels reaching end-users.

Proposals should:

- Establish a support service, fully understanding the principles of the interactive innovation model and being able to translate them into best practice for MAA projects, to regularly and intensively interact with Horizon MAA project coordinators and partners across the EU and Associated countries (with particular attention to the widening countries[234]) to improve understanding and effective implementation of MAA.

- Provide continuous support for Horizon MAA project coordinators and partners, in particular end-users and their advisors, to help them manage and ease the administration during the implementation of the multi-actor projects.

- Provide regular, comprehensive training to a cohort of administrative staff, at least 10 specialists in each Member State and Associated Country, that will be fully equipped with the necessary knowledge, competences and skills to support effective implementation of MAA projects. This includes also – in synergy with the EU CAP Network strand on or Innovation & Knowledge exchange | EIP-AGRI – being able to make the link to relevant EIP-AGRI Operational Groups and/or other local innovation projects/initiatives, which can contribute to, interact, amplify and strengthen a specific MAA project proposal.

- Develop selection criteria, based on which the project will regularly screen and select at last 25 success stories from Horizon MAA projects per year on a variety of topics of relevance to the end-users with a focus on concrete practice-oriented outcomes.

- On regular basis, in synergy with the EU CAP Network strand on or Innovation & Knowledge exchange | EIP-AGRI, collect and widely share the successful examples of MAA projects through diverse approaches and channels across the whole EU and Associated Countries, including by (but not limited to) (1) organising an annual 'EIP-AGRI MAA Award' for the best 10 Horizon MAA projects, and (2) creating in total at least 100 promotional videos from successful Horizon MAA projects showcasing the generated knowledge and solutions (when available including cost-benefit analysis), and involving diverse partners of the projects to provide testimonies on the benefits of taking

234 Horizon Europe Widening - European Commission (europa.eu)

part in MAA projects, as well as tips and tricks on how to make a MAA project attractive for end-users to join and result in outcomes that are useful for practice.

- Based on a thorough analysis of the success factors and best practices, provide a toolbox, guidelines and trainings for successful implementation of MAA projects.
- Provide toolbox and guidelines to the Horizon MAA projects on how to widely and effectively disseminate the outcomes of their projects among end-users, in particular by:
    - performing cost-benefit analysis of using the R&I solutions in practice,
    - demonstrating the R&I solutions in practice at real life sites,
    - describing the R&I solutions using language used by practitioners,
    - connecting to AKIS structures in the Member States (including AKIS Coordination Bodies) and mobilising the diverse AKIS multiplying actors (e.g., advisors, knowledge hubs, national CAP networks etc.), in case of projects in the area of agriculture, forestry and rural areas,
    - etc.
- Review, improve the quality and increase the use of all practice abstracts generated by completed, ongoing and new Horizon MAA projects. Showcase a system of drafting and peer-review of practice abstracts by end-users to improve quality, attractiveness and usefulness for practice. Develop a toolbox and guidelines, at minimum encompassing:
    - better adaptation of language to target audience,
    - better choice of useable solutions for practice to go into practice abstracts,
    - more effective communication methods and choice of channels for sharing practice-oriented knowledge and solutions,

to support existing and future consortia in preparing practice abstracts that are of high quality, focused, useful, impactful, appealing, easy to understand and accessible for the end-users.

- Organise at least 1 matchmaking event per year (involving at least 100 projects and a wide arrange of representatives offering diverse funding opportunities) and provide continuous, comprehensive support to project partners in finding funding opportunities for improving sustainability and exploitability of the outcomes of successful Horizon MAA projects;
- Feed the outputs of the project directly to EU and national AKIS channels, including EU and National CAP Networks and the EU-FarmBook online platform.
- Ensure complementarities with relevant Horizon initiatives, in particular PREMIERE, CARE4BIO, National Contact Points, and synergies with the EU CAP Network Support

Facility for Innovation & Knowledge exchange | EIP-AGRI, avoiding duplication of efforts.

Proposals should establish a regular dialogue with the European Commission and regarding the activities of the support service and their timeline.

The project should run for a minimum of 4 years. A convincing plan for maintaining the MAA support service in the long-term beyond the project duration and without EU funding should be included in the proposal.

The integration of the gender dimension (sex and gender analysis) in the activities of the project is not a mandatory requirement.

Other actions not subjected to calls for proposals

Grants to identified beneficiaries

1. Danish presidency events in connection with update of bioeconomy strategy

Research and innovation (R&I) are key enablers for the deployment of the bioeconomy and for developing sustainable food systems.

Denmark will take on the Presidency of the Council of the European Union in the second half of 2025. The foreseen Presidency events will be an opportunity to announce next steps for the EU Bioeconomy Strategy and the EU's Food2030 initiative, for mainstreaming the bioeconomy concept across different EU policies and instruments, and for increasing private and public investment.

The conference will provide an opportunity to take stock of the work under the 2018 EU Bioeconomy Strategy, Food2030 and Horizon Europe (including Horizon Europe Partnerships, Missions, and Joint Undertakings) and under bioeconomy-related EU policies. It will provide exchange on the EU's strategic challenges and on insights from science, innovation and practice, at Member State and EU level. The planned event will provide a space for the presentation of scientific achievements, and for exchange of practical ideas and innovative solutions. Moreover, the event will help further strengthen the science policy interface for improved and coherent bioeconomy and food systems governance. Possible synergies with the Standing Committee for Agricultural Research (SCAR) can be embedded.

The event will bring together European Commission services, Member States, Members of the European Parliament and other EU Institutions, stakeholders, experts and interested citizens, including youth representatives, from across Europe.

The event will take place in Denmark during the Danish Presidency of the Council of the European Union. The European Commission will support the organisation of the event in cooperation with the entity designated by the Danish Presidency.

This grant will be awarded without a call for proposals according to Article 195(e) of the Financial Regulation and Article 24(3)(b) of the Horizon Europe Regulation to the legal entity identified below.

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes.

Legal entities:

Danish Agency for Higher Education and Science, Haraldsgade 53 - 2100 Copenhagen, Denmark

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 195(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes.

Indicative timetable: As of 2nd quarter of 2025

Indicative budget: EUR 0.30 million from the 2025 budget

2. Irish presidency event - Advancing the bioeconomy strategy for sustainable food and bio-based systems

Research and innovation (R&I) are key enablers for the deployment of the bioeconomy and for developing sustainable food and biobased systems.

Ireland will take on the Presidency of the Council of the European Union in the second half of 2026. The foreseen Presidency event will be an opportunity to build on the new EU Bioeconomy Strategy that is expected to be published by the end of 2025, and the EU's Food2030 initiative, for advancing the bioeconomy across different EU policies and instruments, and for increasing private and public investment.

The bioeconomy carries clear potential for addressing the challenges facing the EU today, including climate change, fossil-fuel dependency and food security. The conference will provide an opportunity to take stock of the new EU bioeconomy strategy, Food2030 initiative and Horizon Europe (including Horizon Europe Partnerships, Missions, and Joint Undertakings) and other bioeconomy-related EU policies. It will provide exchange on the EU's strategic challenges and on insights from science, innovation and practice, at Member State and EU level.

The planned event will provide a space for the presentation of scientific achievements, real-world examples of the bioeconomy in action (such as those funded by the Circular Biobased Europe Joint Undertaking) and for exchange of practical ideas and innovative solutions. It could also highlight the role of the bioeconomy for vibrant rural areas, for mobilising primary producers in climate action and in the green transition, and for creating and maintaining jobs, growth, for primary producers, landowners, small and medium sized enterprises, and other rural actors, including through new value-added chains and business models. Possible synergies with the Agri-Fish Council, Global Bioeconomy Forum, the EU High Level Policy Forum on the Bioeconomy and the Standing Committee for Agricultural Research (SCAR) can be explored.

The event will bring together the European Commission, Member States, Members of the European Parliament and other EU Institutions, stakeholders, experts and interested citizens, including youth representatives, from across Europe.

The event will take place in Dublin during the Irish Presidency of the Council of the European Union. The European Commission will support the organisation of the event in cooperation with the entity designated by the Irish Presidency.

This grant will be awarded without a call for proposals according to Article 195(e) of the Financial Regulation and Article 24(3)(b) of the Horizon Europe Regulation to the legal entity identified below.

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes.

Legal entities:

Department of Agriculture, Food and the Marine - Agriculture House, Kildare Street, Dublin D02 WK12, Ireland

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 195(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes.

Indicative timetable: As of 4th quarter 2025

Indicative budget: EUR 0.30 million from the 2025 budget

Public procurement

1. Coordination and support service for Circular Cities and Regions Initiative (CCRI)

The transition to a circular economy is key to reducing pressures on natural resources. It is also a prerequisite to achieve the EU’s 2050 climate neutrality target and to halt biodiversity loss. For these reasons, the circular economy concept should be a central component in local and regional economies, which have a suitable scale for closing resources loops, creating sustainable circular ecosystems and designing participatory community-based innovation schemes, which can bring co-benefits for climate action and the preservation of a healthy environment. An increasing number of cities, regions, industries and businesses are engaging in testing and improving circularity in their territories, economic sectors, value chains and

services. Nevertheless, concrete implementation of systemic solutions for the territorial deployment of the circular economy still needs to be demonstrated and replicated in other areas. In particular, a major challenge is to apply the circular economy concept effectively in urban and regional policy areas beyond traditional resource recovery in waste and water sectors. Horizon Europe - The Circular Cities and Regions Initiative[235] (CCRI) is part of the European circular economy action plan and aims to support circular solutions for the transition towards a sustainable, regenerative, inclusive and just circular economy on a local and regional scale. The aim of the CCRI's activities is to help implement the European Green Deal, the circular economy action plan and the bioeconomy strategy, contributing to the EU's long-term climate and biodiversity objectives. The CCRI Coordination and Support Office is currently run via a 4-year framework contract (FWC) (from October 2021 until October 2025).

The objective of this new action is to continue and strengthen the coordination and support service for the CCRI's implementation at local and regional level beyond October 2025. In this second operation phase of the initiative, and under the foreseen follow-up framework contract, the CCRI will consolidate and diversify the technical support it provides to European cities and regions. The CCRI will continue to act as a structuring element to connect and facilitate cooperation among the different CCRI-related projects funded under Horizon 2020 and Horizon Europe. It will also continue to further strengthen the collaboration and synergies with other organisations and initiatives supporting the circular transition at local and regional level. The focus will however smoothly shift from pilot experimentation to larger-scale solution roll-out and upscaling.

The first specific contract under this follow-up framework contract is expected to be signed in October/November 2025. It will: (i) provide support activities to European cities and regions in the implementation of their circular systemic solutions; (ii) deepen the analysis of the remaining R&I gaps, and further identify (technical, regulatory and financial) drivers and obstacles for boosting circularity at local and regional level; and (iii) support the dissemination and exploitation of pilot project results.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative budget: EUR 3.00 million from the 2025 budget

2. Studies, conferences, events and outreach activities

A number of specific contracts will be signed under existing framework contracts to:

(i) support the dissemination and exploitation of project results;

(ii) contribute to the definition of future challenge priorities;

(iii) carry out specific evaluations of programme parts;

235 Circular Cities and Regions Initiative | Circular Cities and Regions Initiative (europa.eu)

(iv) organise conferences, events and outreach activities.

Should existing framework contracts prove unsuitable or insufficient to support these activities, one or more calls for tender may be launched, as appropriate. The contracts envisaged cover the following subjects: studies, technical assistance, conferences, events and outreach activities.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: throughout 2025

Indicative budget: EUR 0.60 million from the 2025 budget

Expert contract actions

1. External expertise to assess and advise on EU research and innovation policy

This action will support the provision of independent expertise in support of the design, implementation and valorisation of EU research policies in the areas currently in scope of Cluster 6: i. environmental observation; ii. biodiversity and natural resources; iii. agriculture, forestry and rural areas; iv. seas, oceans and inland waters; v. food systems; vi. bio-based innovation systems in the EU's bioeconomy and vii. circular systems.

Individual experts will work on the assessment, analysis and valorisation of completed and on-going research and innovation actions and programmes and the identification of future research and innovation needs.

The assessment and advisory tasks of individual experts can include the following:

- analysis of the contribution of research results (at national, EU and/or international level) to EU policy objectives and emerging issues, including policy recommendations where appropriate.
- analysis of research results at national, EU and/or international level (e.g. portfolio analysis), which may imply quantitative assessments and/or qualitative assessments.
- identification of innovative solutions as well as potential gaps and synergies to be addressed by EU research and innovation policy.
- advice on the valorisation, communication, dissemination and exploitation of research results.
- participation in conferences and events, e.g. including the drafting of papers and reports on their conclusions.

A special allowance of EUR 450/day will be paid to the experts appointed in their personal capacity who act independently and in the public interest.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative budget: EUR 1.00 million from the 2025 budget

Subscription actions

1. GEO subscription 2025

The EU provides an annual contribution to activities of the Group of Earth Observations (GEO) Secretariat for 2025, in accordance with Article 239 of the Financial Regulation applicable to the general budget of the European Communities (2018) on making contributions to bodies of which the EU is a member or an observer.

As a full member of the GEO, the Commission will pay a contribution on the EU's behalf to the GEO Trust Fund, which is the budgetary structure agreed by GEO members to fund the GEO Secretariat and some GEO activities, including GEOGLAM (hosted by the World Meteorological Organisation in Geneva, Switzerland).

This contribution will help ensure the that the GEO secretariat operates according to its concept of operation and annual operations plan, agreed by the GEO Executive Committee (which the EU is co-chairing together with China, USA, and South Africa). At least EUR 0.20 million EUR of the contribution shall be used to support the function of a regional GEO coordinator in charge of the European caucus. Another EUR 0.30 million EUR of the contribution shall be reserved for the GEOGLAM directorate hosted by the GEO secretariat.

Type of Action: Subscription action

Indicative timetable: As of second quarter of 2025

Indicative budget: EUR 1.60 million from the 2025 budget

Budget[236]

	Budget line(s)	2025 Budget (EUR million)	2026 Budget (EUR million)	2027 Budget (EUR million)
Calls				
HORIZON-CL6-2025-01		410.00	20.00	20.00
	from 01.020260	*410.00*	*20.00*	*20.00*
HORIZON-CL6-2025-02		423.50	93.00	24.00
	from 01.020260	*423.50*	*93.00*	*24.00*
HORIZON-CL6-2025-03		119.90		
	from 01.020260	*119.90*		
Contribution from this part to call HORIZON-MISS-2025-04 under Part 12 of the work programme		13.81		
	from 01.020260	*13.81*		
Contribution from this part to call HORIZON-MISS-2025-06 under Part 12 of the work programme		1.47		
	from 01.020260	*1.47*		
Contribution from this part to call HORIZON-MISS-2025-07 under Part 12 of the work programme		1.41		
	from 01.020260	*1.41*		
Contribution from this part to call HORIZON-MISS-2025-05 under Part 12 of the work programme		80.76		
	from 01.020260	*80.76*		
Contribution from this part to call		20.03		

[236] The budget figures given in this table are rounded to two decimal places.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2025.

HORIZON-MISS-2025-03 under Part 12 of the work programme	*from 01.020260*	*20.03*		
Contribution from this part to call HORIZON-MISS-2025-01 under Part 12 of the work programme		9.69		
	from 01.020260	*9.69*		
Other actions				
Grant to identified beneficiary according to Financial Regulation Article 195(e)		0.60		
	from 01.020260	*0.60*		
Public procurement		3.60		
	from 01.020260	*3.60*		
Expert contract action		1.00		
	from 01.020260	*1.00*		
Subscription action		1.60		
	from 01.020260	*1.60*		
Contribution from this part to Indirectly managed action under Part 12 of the work programme		5.67		
	from 01.020260	*5.67*		
Contribution from this part to Public procurement under Part 12 of the work programme		7.49	0.59	
	from 01.020260	*7.49*	*0.59*	
Contribution from this part to Provision of technical/scientific services by the Joint Research Centre under Part 12 of the work programme		0.07		
	from 01.020260	*0.07*		
Contribution from this part to Specific grant agreement under Part 12 of the work programme		7.19		
	from 01.020260	*7.19*		

Contribution from this part to Expert contract action under Part 12 of the work programme		0.38		
	from 01.020260	*0.38*		
Estimated total budget		1108.20	113.59	44.00