



EN

Horizon Europe
Work Programme 2021-2022

12. Missions

(European Commission Decision C(2022)2975 of 10 May 2022)

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Introduction

Missions aim to address some of the greatest challenges facing our society. They are bold and inspirational with clear objectives that are time-bound, realistic, measurable and targeted.

Rooted in research and innovation, missions aim to tackle societal challenges with systemic solutions, leading to societal transformations and social impact.

Missions will help deliver key EU policy priorities such as the European Green Deal, Europe's Beating Cancer Plan, NextGenerationEU, the EU Industrial Strategy and A Europe fit for the Digital Age, amongst others.

To achieve their goals and promote societal change, missions will implement the reuse and reproducibility of research results such as FAIR research data and open access to scientific publications. Also, the missions will closely involve citizens in their preparation, implementation and monitoring throughout their duration, also showcasing the added value of the EU.

Missions are a novel instrument in Horizon Europe - the Framework Programme for Research and Innovation. For their successful implementation they will work in synergy and coordination with other missions, parts of Horizon Europe, in particular with European Partnerships and Clusters, and including also bottom-up parts such as the Marie Skłodowska-Curie Actions, the European Institute of Innovation and Technology or the European Research Council, as well as with other EU funding instruments and policies. Furthermore, they will need to be implemented in close synergy with funding, programmes and strategies both at Member State / Associated Country and regional level, as well as with civil society and the private sector.

Five mission areas have been included in the Horizon Europe Regulation (Adaptation to Climate Change, including Societal Transformation; Cancer; Healthy Ocean, Seas, Coastal and Inland Waters; Climate-Neutral and Smart Cities; Soil Health and Food). Mission boards, comprised of external experts with a wide variety of backgrounds, have been established to advise the Commission on possible missions within the scope of these areas. On the basis of reports from the five mission boards, the Commission has identified the following titles for missions in the Horizon Europe Strategic Plan, subject to further refinement:

- Adaptation to Climate Change¹;
- Cancer²;
- Climate-Neutral and Smart Cities³;

¹ also known with the title: "*Adaptation to Climate Change: support at least 150 European regions and communities to become climate resilient by 2030*"

² also known with the title "*Cancer:improving the lives of more than 3 million people by 2030 through prevention, cure andfor those affected by cancer includinftheir families, to live longer and better*"

³ also known with the title "*100 Climate-Neutral and Smart cities by 2030*"

- Ocean, Seas and Waters⁴;
- Soil Health and Food⁵.

The five identified missions have gone through a preparatory phase, during which implementations plans were developed, which included detailed objectives, specific interventions, investment strategy and performance indicators for each mission. The implementation plans have been assessed against objective criteria ⁶ and all missions have now entered full implementation⁷.

This work programme part contains actions for each of the five missions during their preparatory phase, and has now been updated with the full R&I agenda, as missions have entered their implementation phase. The actions included in this work programme have established the foundations and they are now supporting the missions' implementation phase.

Critical to the success of the missions will be the extent of wide engagement across the EU and Associated Countries and beyond. To facilitate this, missions will make use of networks in place and, where necessary develop networks with the partner countries to coordinate complementary actions for missions, with the possibility that this might be extended at a later date with national hubs.

Furthermore, in 2022, additional horizontal actions will be programmed to ensure coordination and synergies across the five missions.

To achieve their objectives, missions may necessitate societal engagement that goes beyond dialogue and leads to action. They may call for the involvement of not only citizens, but also academics, entrepreneurs, social partners and public administrators as co-designers, co-developers, and co-implementers. In addition, they may require changes in societal practices at European scale at an unprecedented speed. To address these specific needs and to promote synergies across the activities and constituencies of the Missions, the Commission intends to set up in 2022 a European Social Innovation Catalyst fund. The Catalyst would enlist experts in social innovation and leverage additional public and private money. These experts would select the most promising existing, demonstrably successful social innovations for the replication and upscaling of these social innovations in service of the Missions.

⁴ also known as "*Restore our Ocean and Waters by 2030*"

⁵ also known with the title "*A Soil Deal for Europe: 100 living labs and lighthouses to lead the transition towards healthy soils by 2030*"

⁶ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/assessment-criteria_en

⁷ [COM\(2021\) 609 final](#)

Mission: Adaptation to climate change

In February 2021, the EC adopted a **EU strategy on adaptation to climate change** that sets out how the EU can adapt to the unavoidable impacts of climate change and become climate resilient by 2050.

Pushing further on the belief that we must adjust now to tomorrow's climate, the EU is launching a specific mission to foster the resilience of all, be it regions, cities, citizens or companies, to climate change. The **Mission Adaptation to Climate Change**, will enable Europe to prepare for unavoidable climate impacts and accelerate the transformation to a climate-resilient Europe. The implementation plan specifies the goal and objectives as well as implementation details of the mission “**Adaptation to Climate Change**”⁸.

Rooted in research and innovation, the Mission will set out concrete objectives and deliver tangible solutions to Europeans.

A regional approach

The EU wants to mobilise all actors, such as EU Member States, regional and local authorities, research institutes, investors and citizens to create real and lasting **impact**.

By supporting European regions to become **climate resilient**, the Mission will help them to be prepared for inevitable changes and extreme events.

While some regions and cities in Europe are well prepared to climate change, others are striving for solutions to address their vulnerabilities. Less developed regions that are more vulnerable to climate impacts and often have low adaptive capacity will receive particular attention. The intention is to ask front-runners European regions in research performance and on climate adaptation to share their experience and accompany them in finding solutions adapted to their own climatic situation and economy.

The R&I support will be provided in different ways:

1. Provide general support to European regions and communities to better understand, prepare for and manage climate risks and opportunities
2. Accelerate transformations to climate resilience: cooperate with at least 150 regions and communities to accelerate their transformation to a climate resilient future, supporting them in the co-creation of innovation pathways and the testing of solutions
3. Demonstrate systemic transformations to climate resilience: deliver at least 75 large-scale demonstrations of systemic transformations to climate resilience across European regions and communities.

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https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/climate_mission_implementation_plan_final_for_publication.pdf

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Missions

For 2021, the Mission will focus on developing a common risk assessment framework, based on which a first set of regions and communities will be supported to better understand their climate risks and to outline an agenda and a roadmap to build their local climate resilience. A few demonstrations of replicable climate resilience solutions will also be funded.

In 2022, the Mission will concentrate on coordinating the portfolio of climate adaptation innovations and identifying the remaining gaps across the areas of innovation and transformation. It will provide state of the art knowledge and data on climate impacts and risks; support the development and testing of solutions capable to address one or more of the systems identified as key for climate resilience building, and demonstrate solutions, including to transform coastal areas, towards climate neutrality and climate resilience, while protecting water.

As foreseen under art 29 of the rules of participation, the Mission will follow a portfolio approach in its related calls, in that “the evaluation committee shall rank the proposals that have passed the applicable thresholds, according to: (a) the evaluation scores; (b) their contribution to the achievement of specific policy objectives, including the constitution of a consistent portfolio of projects. In particular, the Mission calls will foster the development of a balanced portfolio of solutions across the different climate risks, the different innovation areas as identified in the Mission Implementation Plan and the different biogeographical regions, as defined by the EEA.

The following call(s) in this work programme contribute to this mission:

Call	Budgets (EUR million)		Deadline(s)
	2021	2022	
HORIZON-MISS-2021-CLIMA-01	5.00		14 Sep 2021
HORIZON-MISS-2021-CLIMA-02	110.00		12 Apr 2022
HORIZON-MISS-2022-CLIMA-01		115.32	27 Sep 2022
Overall indicative budget	115.00	115.32	

Call - Better prepared regional and local authorities to adapt to climate change

HORIZON-MISS-2021-CLIMA-01

Conditions for the Call

Indicative budget(s)⁹

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ¹⁰	Number of projects expected to be funded
		2021		
Opening: 22 Jun 2021 Deadline(s): 14 Sep 2021				
HORIZON-MISS-2021-CLIMA-01-01	CSA	5.00 ¹¹	Around 5.00	1
Overall indicative budget		5.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.

⁹ 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 years 2021 and 2022.

¹⁰ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

¹¹ Of which EUR 1.50 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.00 million from the 'Digital, Industry and Space' budget and EUR 2.50 million from the 'Climate, Energy and Mobility' budget.

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Missions*

<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-CLIMA-01-01: Better prepared regional and local authorities to adapt to climate change

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 5.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	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:

Project results are expected to contribute to some¹² of the following expected outcomes:

- regional and local authorities gear up their preparations for meeting current and future objectives and requirements when it comes to climate adaptation and climate risk management, in the Climate Law¹³ - namely in the new EU strategy on adaptation to climate change¹⁴ - and in the Union Civil Protection Mechanism legislation¹⁵ ;

¹² See scope section for more details on the outcomes and objectives to be addressed.

¹³ COM(2020) 80 final

¹⁴ COM(2021) 82 final

¹⁵ COM(2020) 220 final

- regional and local authorities, citizens and other stakeholders improve their understanding of climate risk and have improved access to relevant climate science, data and information from public and private sources and services (e.g. from regional climate projections and predictions, Copernicus, GEOSS and European Research Infrastructures (ERI)¹⁶);
- regional and local authorities have access to a range of funding and financing opportunities to create an enabling environment for adaptation action;
- regional and local authorities embrace a transformative, inclusive and systemic approach, including societal transformation dimension, towards climate change adaptation action and just transition (in the wider sustainability context);
- citizens and stakeholders are aware of climate impacts and risks, and engaged in the co-creation and sharing of data, knowledge and solutions fundamental for the transformation to become climate resilient (including by building on citizen science, social dialogue and social innovation approaches);
- regional and local authorities adopt an integrated approach to solutions addressing climate change adaptation and climate resilience, namely no/low-regret adaptation solutions with co-benefits of adaptation actions for mitigation, zero pollution, biodiversity (e.g. nature-based solutions), resource efficiency, the economy, society, cultural heritage, human health and well-being;
- regional authorities and communities are equipped to assess adaptation gaps in a systematic and forward-looking manner.

Scope: This action should provide services to support regional and local authorities in their preparation to meet the current requirements of the Union Civil Protection Mechanism legislation, and the foreseen adaptation objectives in the Climate Law, underpinning the new EU strategy on adaptation to climate change in terms of research and innovation, data and knowledge, and capacity and skills.

Furthermore, this action should take stock of past, ongoing and future activities related to climate change adaptation, including innovative approaches to climate adaptation plans to implement a mix of solutions – based on technological, non-technological, and social innovations – and to explore transformative pathways. This would give an indication of best practices and solutions already available, gaps and barriers to address climate change adaptation in a more holistic manner; as well as options for transformative and innovative approaches.

In particular, the action should help regional and local authorities to:

¹⁶ https://ec.europa.eu/info/research-and-innovation/strategy/european-research-infrastructures_en#initiatives

- a. better understand their climate risks, solutions available to mitigate such risks and ways to achieve climate resilience, including by some of the following activities:
1. facilitating access to services specific to climate risk assessments at regional and/or local level, focusing on particularly vulnerable regions;
 2. assisting in the elaboration of climate risk management plans, including provisions for their monitoring and evaluation;
 3. providing a tailor-made overview of potential technological, non-technological, and social solutions – in particular breakthroughs, disruptive and radically new innovations – (which includes their effectiveness, inclusiveness, costs and benefits) and establishing close synergies with the Horizon 2020 European Green Deal call, in particular the topic on Climate-resilient Innovation Packages for EU regions (LC-GD-1-3-2020), and the topic on developing end-user products and services for all stakeholders and citizens supporting climate adaptation and mitigation (LC-GD-9-2-2020), as well as drawing on the results from relevant projects from Horizon 2020 and the LIFE Programme;
 4. identifying and mapping of priority research and innovation areas where gaps exist;
 5. facilitating a process designed to co-develop a vision of what a transformation towards climate resilience might mean in their regional and/or local context taking a systems approach (key community systems and enabling conditions), and including an analysis of levers, barriers and tipping points for transformation;
 6. jointly (consortium participants, regional/local authorities and relevant stakeholders) assess adaptation capacity, behavioural insights, changes in social practices, skills and conditions (e.g., framework, governance, finance) needed to undergo a transformation towards climate resilience, with the objective to develop a self-assessment tool available to those authorities that are not able to receive the services from the consortium.
- b. establish approaches and processes that enable co-design, co-development, and co-implementation with citizens and stakeholders (including academia, industry, social partners, public authorities and regulatory agencies) in line with the recently adopted Climate Pact¹⁷, through some of the following activities: ¹⁸; ¹⁹ for the development and testing of transformative inclusive solutions towards climate resilience (exploring synergies with living labs foreseen in relevant Horizon Europe partnerships);
1. cross-fertilisation of cutting-edge science on climate change impacts and risks that is locally/regionally relevant and comprehensible;

¹⁷ COM(2020) 788

¹⁸ <https://www.eea.europa.eu/highlights/citizen-science-on-air-quality>

¹⁹ User-centred, open innovation ecosystems based on a systematic user co-creation approach integrating research and innovation processes in real life communities and settings.

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2. fostering co-production of data at local level and knowledge and co-design of climate services to support a transformation towards climate resilience;
 3. supporting the implementation of citizen science, citizen observatories, social innovation and other means of joint knowledge gathering and monitoring to support a transformation towards climate resilience (e.g. the projects on air quality
- c. assisting regional and local communities in the preparation of large-scale living labs
- d. facilitating the establishment of inclusive and deliberative governance processes supporting just transitions;
- e. map and facilitate synergies by identifying funding and financing opportunities for the creation of important R&I-related enabling conditions in support of reaching climate resilience, including in the context of establishing close synergies with the preparatory action on Coordination of complementary actions for missions in this Work Programme, (topic HORIZON-MISS-2021-COOR-01):
1. Data and operational climate services, including National Meteorological Services, Copernicus Climate Change Service, and Copernicus Emergency Management, Horizon 2020 and Europe relevant projects, as well as relevant action of GEOSS (Global Earth Observation System of Systems);
 2. the region-specific smart specialization strategies (ERDF/CF PO1) and regional operational programmes for Strategic Objective 2;
 3. the Digital Europe Programme, in particular the digital twin on climate change adaptation;
 4. the skills agenda and the European Social Fund (ESF+) to create the needed capacities and skills;
 5. Horizon Europe instruments, including those of bottom-up nature like the European Research Council or the Marie Skłodowska-Curie Actions, and its partnerships and missions;
 6. other relevant EU, national and or regional programmes and instruments (e.g. Just Transition Fund, Recovery and Resilience Facility, European Structural and Investment Funds, Erasmus+ programme, European Solidarity Corps, Invest EU, and relevant financing by the European Investment Bank).

Actions should address all the three main objectives under the scope, tackling some of the specific outcomes (sub-bullets under the three main objectives). Therefore, the consortium²⁰ should possess the expertise necessary to successfully deliver on the three main objectives. Regional and local authorities are not expected to be consortium participants, but to receive

²⁰ Possible participants: experts from a variety of sectors (private, public, academia) with experience on the services to be provided by the topic. National, regional or local authorities could also be part of the consortium if they possess the expertise required to deliver the services outlined in the topic.

services from the consortium; in other words, they are the target groups of the project's activities.

The services covered by this topic should be accessible to as many regional and local authorities as possible. The consortium is expected to accompany the authorities and relevant stakeholders through the delivery of the services needed and to the achievement of clear outcomes. Priority should be given to regions or locations with the high vulnerability²¹, limited resources and/or low adaptive capacity²² to climate change impacts. Demand could be higher than what can be supplied within the limits of this action, therefore proposals should include criteria for how to identify the regional and local authorities most in need of these services. These criteria will ensure that a variety of locations are represented, in as many countries as possible, reflecting the diversity in climatic risks in Europe, as well as differences in socio-economic and demographic conditions, and in approaches to mitigating such risks. Such criteria should also take into account the characteristics of the populations concerned and the vulnerability of the locations in order to subsequently understand the effectiveness of the services provided by the consortium.

The project is expected to have a duration of three years. Early in the project the consortium should define a list of regional and local authorities that would benefit from the project's activities. By the end of the project, the consortium should propose a strategy to maintain the services offered through a platform, entity or partnership with relevant organisations.

Consortium participants should establish synergies with relevant projects funded under this Work Programme as well those originating from Horizon 2020, in particular the Green Deal Call (topics in area 1, as well as LC-GD-9-2-2020 and LC-GD-10-1-2020), should be explored and established during the course of the project. In particular, projects resulting from the calls mentioned above, as well as from Cluster 3 on Disaster Resilient Societies should be foreseen, Cluster 5 on Climate, Energy and Mobility, and Cluster 6 on Food, Bioeconomy, Natural Resources, Agriculture and Environment. In addition, the consortium should draw, when appropriate, upon the capabilities, expertise and data available at the Joint Research Centre in the area of Smart Specialization and urban sustainable development strategies, and the European Environment Agency through the European Climate Adaptation Platform (Climate-ADAPT), the European Topic Centre on Adaptation and the EIONET network of Member States.

The possible participation of the JRC in the project will consist of connecting to the regions, local communities and cities, which in their smart specialisation / local-urban development strategies are interested in the priority themes relevant for the mission.

²¹ Vulnerability is the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2018 – SR Global Warming of 1.5 °C).

²² Adaptive capacity is the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (IPCC, 2018 – SR Global Warming of 1.5 °C).

Call - Research and Innovation actions in support of the implementation of the Adaptation to Climate Change Mission

HORIZON-MISS-2021-CLIMA-02

Conditions for the Call

Indicative budget(s)²³

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ²⁴	Number of projects expected to be funded
		2021		
Opening: 11 Jan 2022 Deadline(s): 12 Apr 2022				
HORIZON-MISS-2021-CLIMA-02-01	RIA	20.00 ²⁵	15.00 to 20.00	1
HORIZON-MISS-2021-CLIMA-02-02	RIA	30.00 ²⁶	25.00 to 30.00	1
HORIZON-MISS-2021-CLIMA-02-03	RIA	5.00 ²⁷	1.50 to 2.50	2
HORIZON-MISS-2021-CLIMA-02-04	IA	50.00 ²⁸	15.00 to 25.00	2
HORIZON-MISS-2021-CLIMA-02-05	RIA	5.00 ²⁹	3.00 to 5.00	1

²³ 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 years 2021 and 2022.

²⁴ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

²⁵ Of which EUR 5.76 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.96 million from the 'Digital, Industry and Space' budget and EUR 0.47 million from the 'Civil Security for Society' budget and EUR 11.56 million from the 'Climate, Energy and Mobility' budget and EUR 0.24 million from the 'Culture, creativity and inclusive society' budget.

²⁶ Of which EUR 8.65 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.94 million from the 'Digital, Industry and Space' budget and EUR 0.71 million from the 'Civil Security for Society' budget and EUR 17.34 million from the 'Climate, Energy and Mobility' budget and EUR 0.36 million from the 'Culture, creativity and inclusive society' budget.

²⁷ Of which EUR 1.44 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.49 million from the 'Digital, Industry and Space' budget and EUR 2.89 million from the 'Climate, Energy and Mobility' budget and EUR 0.12 million from the 'Civil Security for Society' budget and EUR 0.06 million from the 'Culture, creativity and inclusive society' budget.

²⁸ Of which EUR 14.41 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 4.90 million from the 'Digital, Industry and Space' budget and EUR 1.18 million from the 'Civil Security for Society' budget and EUR 28.91 million from the 'Climate, Energy and Mobility' budget and EUR 0.61 million from the 'Culture, creativity and inclusive society' budget.

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Overall indicative budget		110.00		
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General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-CLIMA-02-01: Development of climate change risk assessments in European regions and communities based on a transparent and harmonised Climate Risk Assessment approach

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 15.00 and 20.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 20.00 million.
<i>Type of Action</i>	Research and Innovation Actions

²⁹ Of which EUR 1.44 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.49 million from the 'Digital, Industry and Space' budget and EUR 0.12 million from the 'Civil Security for Society' budget and EUR 2.89 million from the 'Climate, Energy and Mobility' budget and EUR 0.06 million from the 'Culture, creativity and inclusive society' budget.

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<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p> <p>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).</p>
<i>Award criteria</i>	<p>The criteria are described in General Annex D. The following exceptions apply:</p> <p>The following additions to the general award criteria apply:</p> <p>The quality criterion shall in addition assess the proposed approach put in place to provide support to third parties, notably the approach to reach out to at least 50 diverse regions (defined NUTS2 by the Nomenclature of Territorial Units for Statistics³⁰) and / or communities ³¹, across the countries participating in Horizon Europe, as this shall assure that the mission spread knowledge and experience fast by engaging diverse environments.</p>
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The minimum amount allocated to financial support to third parties must be 60 % of the requested EU contribution. The maximum amount to be granted to each third party is EUR 300,000 to allow the project to engage local actors / authorities in the regions to conduct a local climate multi-risk assessment using the developed prototype.</p>
<i>Exceptional page limits to proposals/applications</i>	<p>The page limit of the application is 70 pages.</p>
<i>Other requirement</i>	<p>The multi-risk and multi sector assessment framework tool</p>

³⁰ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003R1059&from=EN>

³¹ as defined in the Mission Implementation Plan https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/climat_mission_implementation_plan_final_for_publication.pdf

	produced must be open source. The project must ensure that the data will comply with the FAIR ³² principles for data producers and publishers.
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Expected Outcome: The project is expected to contribute to all of the following outcomes:

- An operational, consistent and more advanced multi-risk assessment framework tool across scales and levels of governance that can be used by all regions and communities³³ in Europe, so they are better equipped to develop their climate resilience plans (if not available yet) or improve the ones that might be already existing.
- Harmonised multi-hazard/ risk assessments at the regional scale, on which the development or improvement of community-based emergency and risk management plans can be based.
- Enhanced adaptive capacity of European regions and communities, reduced vulnerability to climate change, variability and extremes, and strengthened scientific knowledge on climate risk assessment.
- Needs for further development of standards, implementation support and guidance for standards (e.g. design maps for climatic actions) are clearly formulated.

Scope: The proposal should address two distinctive actions, in a sequence indicated below.

1st Action- Development and beta testing of the climate risk and vulnerability assessment framework tool

This topic relates to the Mission's first objective³⁴: preparing and planning for climate resilience and the need for a better understanding of climate change related risks and their interactions with other types of risks.

The total budget for the first action should be 20% of the total requested EU contribution. The multi-risk and multi sector assessment framework tool should be developed for broad application to all European regions and communities. The harmonised framework and the methodology and guidelines to assess the climate change risks and impacts should be designed to be accessed by non-experts users and the relevant stakeholders, with user-friendly features.

³² FAIR founding principles for data producers and publishers - Findability, Accessibility, Interoperability, and Reusability

³³ Following the definition of Regions in the Nomenclature of Territorial Units for Statistics (NUTS) classification, regions are considered to be the territories at NUTS 2 level. For practical implementation purposes, the concept of 'communities' has been added as groupings of people with social ties, shared values or interests, engaged in joint action. Communities can be of different size and are not always geographically confined.

³⁴ Please consult the Mission's Implementation Plan for more information on this

The approach proposed should make an efficient use of the currently available high-resolution data and services, in particular, envisaging an exploitation of those provided by Copernicus³⁵, initiatives within the Group on Earth observation (GEO) and EuroGEO, and the ones of Destination Earth³⁶, particularly its climate change adaptation digital twin and its way how to involve non-experts. Big data and artificial intelligence should be also integrated in the tool in an innovative way to better quantify and assess climate risks. All developments should take advantage of and where possible align with the JRC Risk Data Hub³⁷ terminology, indicators, data structure so that newly generated risk, vulnerability and loss data can be integrated in its GIS web platform, as well can be integrated with Destination Earth. The proposal should also work closely with national authorities to ensure the integration of the information, knowledge and experience existing at national and regional level.

While a large amount of data and information is available, there are still significant knowledge gaps when it comes to mid-and long term projections of frequency and severity of extreme events at regional and local level, specific impacts within various types of territories (urban, rural, geographic specificities) and land use, cascading and spill-over effects, and the integration of socio-economic (including vulnerability and the impacts/effectiveness of the adaptation solutions) and in-situ data.

The proposal should provide a benchmark and comparison of the already ongoing climate risk assessment frameworks and identify common ground and gaps to be filled. Basing the results on reputable, quality controlled data such as the one made available by C3S on the Climate ADAPT portal of the European Environment Agency, will be a way to ensure that a common data layer is used by all risk assessment frameworks.

The development of the climate risks and impacts assessment framework tool should be based on the state-of-the-art multi-sector risk framework³⁸, with its three components (hazard, exposure, vulnerability), considering the rich available experience in the private sector (e.g. insurance) and public institutions (e.g. UNDRR Global Risk Assessment Framework, GRAF³⁹) and building upon existing risk assessment frameworks, such as PESETA studies and EEA assessment reports and the Climate-ADAPT's climate data explorer, relevant CEN/ISO technical standards (e.g. the Eurocodes), and take also into account ongoing work on standardisation of climate and disaster loss data.

The proposed harmonised framework should clearly tap into the wealth of existing national and regional risk assessment strategies and methodologies and should be defined after some consultation and validation with the relevant national and regional stakeholders who are

³⁵ More specifically, Copernicus Climate Services, C3S, which already provides free of charge quality controlled data about the past, present and future climate for Europe and the whole planet to its nearly 100.000 users. The recently signed contribution agreement between ECMWF and the European Commission ensures that such an operational climate data provision will remain free and open for at least the next 7 years.

³⁶ <https://digital-strategy.ec.europa.eu/en/policies/destination-earth>

³⁷ [https://drmkc.jrc.ec.europa.eu/risk-data-hub#/#/](https://drmkc.jrc.ec.europa.eu/risk-data-hub#/)

³⁸ Recommendations for National Risk Assessments of the JRC:
<https://publications.jrc.ec.europa.eu/repository/handle/JRC114650>

³⁹ see <https://unfccc.int/wim-excom/areas-of-work/crm-approaches>

normally in charge of the climate risk assessment processes. The proposal should also identify and support ways by which the framework may be widely applied, supporting the implementation of the EU Adaptation Strategy and possibly also by incorporating it in the guidance and procedures of the Union Civil Protection Mechanism (UCPM), or a combination of both, and exploring the role of the data and knowledge services embedded in the Climate ADAPT platform.

2nd Action- Using the climate risk assessments framework tool in regions and communities, to conduct climate risks, vulnerabilities and impacts assessments as a basis for development or revision of local emergency and risk management plans

The proposal should provide direct financial support in the form of grants to at least 50 regions and communities in conducting multi-hazard/ risk assessment profiles or upgrading and refining existing ones, making use of climate services, using the framework tool developed under Step I. This action should start no later than 12 months after the project kick-off. A close cooperation with pre-established regional networks should be pursued to ensure maximum dissemination and use of the climate risk assessment tool. 60% of the total amount of the EU requested contribution must be made available to provide direct support to regions and communities. To implement the support to financial support to third parties, the consortium should include partners with relevant operational and financial experience and viability.

Through the provision of financial support to third parties, the proposal should provide a number of selected local and regional administrations with access to development of their climate risk profiles, guidance for the development of comprehensive risk management, based on the designed framework and other service oriented initiatives such as Copernicus Climate Change Service C3S, the Copernicus Emergency Management Service and GEO/EuroGEO.

Priority should be given to regions or locations with high vulnerability⁴⁰, limited resources and/or low adaptive capacity⁴¹ to climate change impacts. Demand could be higher than what can be supplied within the limits of this action, therefore proposals to this call should include a process and criteria for how to identify the regions and communities most in need of these services. These criteria will ensure that a variety of locations are represented, in as many countries as possible, reflecting the diversity in climatic risks in Europe, as well as differences in socio-economic and demographic conditions, and in approaches to mitigating such risks. Such criteria should also take into account the characteristics of the populations concerned and the vulnerability of the locations. Respective national governments should be consulted in this process selecting the regions and communities.

⁴⁰ Vulnerability is the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2018 – SR Global Warming of 1.5 °C).

⁴¹ Adaptive capacity is the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (IPCC, 2018 – SR Global Warming of 1.5 °C).

The proposal should also highlight opportunities for adjustments of existing community early warning systems, where they exist, to consider changing patterns of climate extreme events and ensure rapid responses and the protection of the concerned people, in particular those at high risk such as children, senior citizens, people with chronic diseases and socially disadvantaged groups. It should support local administrations and local businesses (in particular SMEs) to develop or revise community-based emergency and risk management plans to ensure critical infrastructure is safe and essential services operable and accessible under critical conditions and to prepare resilience strategies to minimise the economic impact (e.g. temporary or permanent shutdown) from climate events resulting in further negative impacts for the wider community through loss of income, employment and livelihoods. Citizens and civil society organisations will be encouraged to provide inputs towards the risk assessments.

The proposal should contribute to filling pre-defined knowledge gaps through harmonisation and integration of existing data allowing for generating of trends and effective predictive modelling of extreme events affecting local communities. Furthermore, data enabling characterising vulnerability (population, infrastructure), disaster loss data, adverse impacts of extreme events, or effectiveness of the adaptation solutions shall be integrated in the risk assessment at local level. 20% of the total requested EU contribution should be allocated to the consortium, for maintenance and update of the risk assessment framework tool, back office support to the regions and communities that aim to develop their risk assessment plans and are using the tool, and developing a proposal for scaling up and improving the risk assessment framework tool. During its duration, the project should include an open support line or help desk for all interested European regions and communities, beyond those that will be selected for direct support in conducting their risk assessments through the cascading funds.

The knowledge generated in the course of the project should be broadly disseminated, made open source, and shall be made public (including eventually developed IT tools), free and open licensed, helping citizens, public institutions and businesses to understand and appreciate their risk exposure, possible implications of climate disruptions on social, economic and environmental processes and key community systems, possible business opportunities. Future actions under the Climate Adaptation Mission should leverage the knowledge generated from this action, in providing support to more regions and communities. The generated knowledge and outcomes should also feed into the improved design and development of this harmonised risk assessment framework.

The possible participation of the JRC in the project will consist of making the JRC Risk Data Hub available and adapting it as needed for hosting and publishing the disaster loss, vulnerability and risk data that is collected under the mission, as far as it is aligned with its terminology, indicators, and data structure.

The European Commission intends to establish a network and coordination activities amongst all the projects funded for the implementation of the Climate adaptation Mission, and also

those funded under the Horizon 2020 European Green Deal call⁴² and under Horizon Europe when particularly relevant to climate adaptation knowledge and solutions, that will be coordinated by the soon to be established Mission Implementation Platform. The project that will be selected under this topic will be requested to contribute to this effort. Applicants should acknowledge this request and already account for these obligations in their proposal, making adequate provisions in terms of resources and budget to engage and collaborate with the Mission governance.

HORIZON-MISS-2021-CLIMA-02-02: Support to the regions in developing pathways towards climate resilience and corresponding innovation agendas

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 25.00 and 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 30.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p> <p>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).</p>
<i>Award criteria</i>	<p>The criteria are described in General Annex D. The following exceptions apply:</p> <p>The following additions to the general award criteria apply:</p> <p>The quality criterion shall in addition assess the proposed approach put in place to provide support to third parties, notably the approach to reach out to at least 100 diverse regions (defined NUTS2 by the Nomenclature of Territorial Units for Statistics⁴³)</p>

⁴² This refers to projects granted under call H2020-LC-GD-2020, topic LC-GD-1-3-2020. The projects are still in grant preparation at the time of writing. They will be operational right at the official planned start of the Mission. In addition to the development of innovation packages improving climate resilience, a Coordination and Support Action will foster their adoption and wide reapplication in at least 10 vulnerable and low-capacity regions. A Coordination and Support Action is already included in the Horizon Europe work programme 2021 to provide additional support to regional and local authorities

⁴³ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003R1059&from=EN>

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	and / or communities ⁴⁴ , across the countries participating in Horizon Europe, as this shall assure that accelerating climate resilience building by engaging diverse environments
<i>Legal and financial set-up of the Grant Agreements</i>	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 minimum amount allocated to financial support to third parties must be 70 % of the requested EU contribution. The maximum amount to be granted to each third party is EUR 300,000 to allow the project to mobilise local actors with local knowledge on which to base the development of the regional agendas.
<i>Exceptional page limits to proposals/applications</i>	The page limit of the application is 70 pages.

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

- In the participating regions and communities:
 - o The pathways to a climate resilient future and their corresponding innovation agendas that regions and communities ⁴⁵ will have developed as output of this project are used to shape relevant research and innovation strategies, and to mobilise research and innovation actions to develop, test and up-scale systemic solutions increasing local climate resilience as identified.
 - o The pathways to a climate resilient future and their corresponding innovation agendas that regions and communities will have developed as output of this project are reflected in political commitments to prepare the ground for the large-scale diffusion of solutions, including policy actions promoting enabling conditions, addressing barriers and leveraging funds.
 - o The process developing these pathways and innovation agendas to a climate resilient future will have further mobilised and inspired the engagement of citizens, academia, the private sector and other stakeholders, including through social

⁴⁴ as defined in the Mission Implementation Plan https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/climat_mission_implementation_plan_final_for_publication.pdf

⁴⁵ Following the definition of Regions in the Nomenclature of the Territorial units for Statistics (NUTS) classification, regions are considered to be the territories at NUTS2 level. For practical implementation purposes, the concept of 'communities' has been added as groupings of people with social ties, shared values or interests, engaged in joint action. Communities can be of different size and are not always geographically confined.

innovation, in the transformative journey to climate resilience within the regions and communities and beyond.

- Within and beyond the participating regions and communities:
 - The process developing these pathways and innovation agendas to a climate resilient future will have provided a better understanding of cross-border interdependencies, risks and opportunities, as well as led to an increase in inter-regional coordination and collaboration to achieve cross-border climate-resilience and harmonization of the strategies to achieve climate resilience.
 - The process developing these pathways and innovation agendas to a climate resilient future will have provided a better understanding of how to best structure, facilitate and support the processes of deliberating and co-designing transformative pathways to climate resilience in a wide range of environmental, economic, political and cultural contexts.
 - The communication and sharing of relevant information and lessons learned will have triggered other regions and communities to also engage in their own processes of deliberating and co-designing transformative pathways to climate resilience.

Scope: This topic relates to the Mission's second objective, and aims to have at least 100 regions and communities⁴⁶ that will have formulated their vision of a climate resilient future and the transformative adaptation pathways, plans and innovation portfolios to reach it.

This action aims at providing the necessary knowledge, expertise, and services to support regions in the formulation of their climate resilient future and of their place-based transformative adaptation pathways, plans and innovation portfolios.

Regional and local authorities will be in the lead of the process developing their respective pathways towards climate resilience and corresponding innovation agendas. They will be supported (i) by the overall consortium selected under this topic that will provide the general framework and tailored support to selected regions and communities and facilitate the orchestration of activities across regions and communities, and (ii) by a local, regional and /or national partner organisation with experience of working on climate adaptation, including societal transformation, that will be engaged through support to third parties in the form of grants (for minimum 70% of the EU requested contribution and of the maximum amount of EUR 300 000 per region) for each of the participating regions and communities.

The proposal should focus on building capacity of regions and communities to take leadership on their own transformative adaptation pathways. Direct and substantive support and capability building should be provided to the regions and communities, both by the overall

⁴⁶ Following the definition of Regions in the Nomenclature of Territorial Units for Statistics (NUTS) classification, regions are considered to be the territories at NUTS 2 level. For practical implementation purposes, the concept of 'communities' has been added as groupings of people with social ties, shared values or interests, engaged in joint action. Communities can be of different size and are not always geographically confined.

consortium and the local partner organisation. The inclusion of a local partner organisation should ensure optimal mobilisation of local/regional/national knowledge, initiatives and stakeholders and build local human resources and organisational capacity to support each region's transformational change process, developing local capacity with long-term local impact beyond the project duration.

The development of regional pathways towards climate resilience should build on assessments of trends and projections of future climate change risks (which are not to be provided by this project). The pathways, plans and innovation portfolios should reflect the 10 areas of innovation and transformation outlined by the Mission in adequate proportion to their relevance to each region and community, as well as any other area that may be identified as relevant by the respective regions and communities⁴⁷. They should also take account of the priorities identified in the national and regional climate change adaptation strategies and programmes, national Recovery and Resilience Plans, relevant regional smart specialisation strategies established under Cohesion Policy and other programmes, such as the Common Agricultural Policy.

The process developing the pathways should be inclusive and participatory, engaging all relevant stakeholders, including public administrations, private sector, universities, civil society, social partners, and in particular citizens and vulnerable groups. The process should entail:

- i. deliberations on the regions or communities' vision for climate resilience and
- ii. an assessment of the community systems⁴⁸ that need to change and of the enabling conditions required to achieve the envisaged transformations,
- iii. the analysis, visualisation and deliberation of different possible futures possibly including different solutions and innovations, that are robust and cost-effective across these possible futures.
- iv. the elaboration of a set of deliberately designed innovative adaptation solutions/interventions operating at different scales and working on different parts of the system, intended to unlock transformations to greatly strengthened climate resilience. The process should provide, for each region and community, indication of the portfolio of innovations and actions intended, including scenarios, intervention points, and the description of a range of concrete innovations and activities including plans and strategies on how to fund/finance these. The development of these pathways should also take into account the cultural approach and the specific social impediment and opportunity for the design of the pathway to a climate resilient future able to involve citizens and stakeholders and create conditions for political decisions.

⁴⁷ As per the published Mission Implementation Plan
https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en

⁴⁸ As per the published Mission Implementation Plan
https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en

When designing these innovation actions and transformative activities, particular attention should be paid to possible synergies with other regional, national or EU programmes and funds or other parts of Horizon Europe. As for possibly relevant EU programmes, funds and initiatives the following are an example of what should be considered:

- CAP and LIFE;
- the Renovation Wave to ensure that critical and social infrastructure is climate proof;
- the European Climate and Health Observatory to foster information exchange and cooperation in preparing for and adapting to the impacts of climate change on human health;
- the ERDF and Cohesion Funds (policy objectives 1 and 2) to promote the transformations of more climate resilient regional economies in the context of smart specialisation strategies, including support from JRC facilitating the Smart Specialisation Strategies Platform;
- the Skills Agenda and the European Social Fund (ESF+) to innovate and facilitate the necessary education, training and capacity building to create the needed capacities and skills for a more climate resilient employment;
- the Digital Europe Work Programme, in particular its efforts to establish the Green Deal Data Space and the Data Space for Smart Communities, the development of the Destination Earth Digital Twins, and the relevant Testing and Experimentation Facilities to facilitate access to and better management of data and knowledge;
- Data and operational climate services, including National Meteorological Services, Copernicus Climate Change, Copernicus Emergency Management, and other relevant Copernicus services, Horizon 2020 and Horizon Europe relevant projects, as well as relevant actions, projects and initiatives of and through EuroGEO⁴⁹, GEOSS (Global Earth Observation System of Systems) and the European Space Agency (ESA) programmes;
- Horizon Europe instruments, including those of bottom-up nature like the European Research Council or the Marie Skłodowska-Curie Actions, and its partnerships (in particular the partnerships on biodiversity, water, and sustainable food systems) and missions (in particular the missions on oceans, smart cities and healthy soils);
- other relevant EU, national and or regional programmes and instruments (e.g. Just Transition Fund, Recovery and Resilience Facility, European Structural and Investment Funds, Erasmus+ programme, European Solidarity Corps, Invest EU, Neighbourhood, Development and International Cooperation programmes and relevant financing by the European Investment Bank).

⁴⁹ The European component of GEO (Group on Earth Observations): https://ec.europa.eu/info/research-and-innovation/knowledge-publications-tools-and-data/knowledge-centres-and-data-portals/eurogeo_en

The support provided by the project should be accessible to as many regions and communities as possible but should support at least 100 regions and communities. Priority should be given to regions or locations with the high vulnerability⁵⁰, limited resources and/or low adaptive capacity⁵¹ to climate change impacts. Demand could be higher than what can be supplied within the limits of this action, therefore proposals to this call should include a process and criteria for how to identify the regions and communities most in need of these services. These criteria must ensure that a variety of locations are represented, in as many countries as possible, reflecting the diversity in climatic risks in Europe, as well as differences in socio-economic and demographic conditions, and in approaches to mitigating such risks. Such criteria should also take into account the characteristics of the populations concerned and the vulnerability of the locations. Respective national governments should be consulted in this process selecting the regions and communities.

It is expected that the project will have a duration of about 5 years. The process selecting the regions and communities should start as soon as possible. To allow for flexibility and overall balance, it may be considered to on-board the 100 regions and communities in a distributed manner over the course of the first 3 years. The first set of regions and communities should be fully engaged within 15 months after the start of the project. The time estimated for each region and community to develop their pathway and innovation agenda for the transformation to climate resilience is estimated to be within 18-24 months of having been on-boarded.

Proposals should describe how the consortium would:

- Define and implement a common impact framework guiding the work with the regions and communities that is to reflect, among other things, the following
 - The impact created by implementing each individual element and combinations of elements of the portfolio of innovations and activities.
 - The impact of working together on portfolio design and on learning, on collaborative ways of working, behaviours and mindsets across diverse stakeholder groups.
 - The impact of the portfolio of innovations and activities on system dynamics and how to increase the understanding of how to unlock change faster and how to make better quality decisions and to share lessons learned.
- Structure and organise the selection of regions and communities and their local partner organisations.

⁵⁰ Vulnerability is the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2018 – SR Global Warming of 1.5 °C).

⁵¹ Adaptive capacity is the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (IPCC, 2018 – SR Global Warming of 1.5 °C).

- Support the regions and communities in the various steps of the process developing the pathways and innovation agendas, including how it would
 - o provide third party support to them through grants and means to engage local/regional/national partners to support the respective regional and/or local administrations;
 - o help facilitate the engagement of relevant stakeholders and citizens;
 - o ensure the necessary access to relevant information, in particular on the range of possible innovations or solutions;
 - o provide tailor-made analysis, visualisation and deliberation of different possible futures for each participating region and community;
 - o support the composition of portfolios of innovation and activities and an underpinning finance strategy.
- Orchestrate cross-regional exchanges to learn from each other, address cross-border interdependencies, and create opportunities for future collaboration.
- Undertake continuous efforts to learn from and improve the processes of deliberating and co-designing transformative pathways to climate resilience in a wide range of environmental, economic, political and cultural contexts.
- Communicate and share relevant information and lessons learned more broadly, in particular through Climate-ADAPT and the Policy Support Facility to be established under the Covenant of Mayors.

In order to implement the financial support to third parties, the consortium should include partners with relevant operational and financial experience and viability.

The project could leverage JRC support to provide guidance and support to regions and communities in the development of smart specialisation strategies and in identifying links to EU Regional Funds to implement their climate adaptation plans and strategies. In particular, the regions and communities supported under this action could tap in JRC support in the development of specific synergetic actions in the area of climate adaptation among Horizon Europe, national research and innovation programmes, the EU Regional and cohesion policy programmes and the Next generation EU recovery instrument.

The project awarded under this topic should collaborate with on-going Horizon 2020 projects, including those funded through the Green Deal call, in view to tailor a Mission Adaptation portfolio of services addressing the partner regional and local needs. Furthermore, the activities of the projects supported under this topic will have strong complementarities with the activities of the research actions that the Mission will support elsewhere. For this reason, the proposal should collaborate with other projects funded by the Mission.

The European Commission intends to establish a network and coordination activities amongst all the projects funded for the implementation of the Climate adaptation Mission, and also those funded under the Horizon 2020 European Green Deal call⁵² and under Horizon Europe when particularly relevant to climate adaptation knowledge and solutions, and that will be coordinated by the soon to be established Mission Implementation Platform. The project that will be selected under this topic will be requested to contribute to this effort. Applicants should acknowledge this request and already account for these obligations in their proposal, making adequate provisions in terms of resources and budget to engage and collaborate with the Mission governance.

In order to adhere to the FAIR principles, the proposals should consider the possibility to leverage the existing open-data and develop the tailoring procedure on the cloud platforms such as the DIASs or the Copernicus Climate Data Store. Through the Sectoral Information System⁵³ of the Copernicus Climate Change Service (C3S), a large number of examples exist of how climate data could be transformed into user-relevant information for different sectors.

HORIZON-MISS-2021-CLIMA-02-03: Towards asset level modelling of climate risks and adaptation

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 1.50 and 2.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 5.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility conditions</i>	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: Projects are expected to contribute to all of the following outcomes:

⁵² This refers to projects granted under call H2020-LC-GD-2020, topic LC-GD-1-3-2020. The projects are still in grant preparation at the time of writing. They will be operational right at the official planned start of the Mission. In addition to the development of innovation packages improving climate resilience, a Coordination and Support Action will foster their adoption and wide reapplication in at least 10 vulnerable and low-capacity regions. A Coordination and Support Action is already included in the Horizon Europe work programme 2021 to provide additional support to regional and local authorities

⁵³ <https://climate.copernicus.eu/data-action>

- Beyond state of the art asset-level models for critical infrastructures will allow for a better assessment of adaptation options
- Public authorities will be enabled to compare different adaptation approaches on the basis of a model information system on critical infrastructure
- An analysis of gaps in European data regarding the assessment of direct⁵⁴ and indirect⁵⁵ economic consequences of damages to critical infrastructures.

Scope: This topic relates to the Mission's first objective: preparing and planning for climate resilience and the need for a better understanding of climate change related risks.

To fully comprehend climate change related risks, information on assets is necessary. Asset-level modelling requires combining meteorological/hydrological hazard models with information on assets (their location and ideally their construction costs and quality, as well as historical loss data). Assets can be publicly or privately owned infrastructure, including critical infrastructure, as well as natural and land areas or housing areas. This topic addresses the provision of asset-level information to public authorities, on critical infrastructures.

The proposal should consider the effect of multiple hazards (including complex, cascading and compound disasters) and should develop improved assessment models, including improved model coupling. For instance, coupling hazard, exposure and vulnerability, stemming from sources such as Copernicus and its Copernicus Climate Change Service (C3S)⁵⁶, with assessments of impacts and of potential adaptation measures, thereby completely integrating the causal chain from climate stressors to adaptive responses into one unifying modelling framework.

The proposal should consider several critical infrastructures (for example electricity supply, ICT, transport systems) across several regions and how its functioning might be impeded by climate change induced risks. The models developed should include reconstruction costs, the costs of not providing the intended service as well as knock-on effects on other systems. The model should be designed as a decision support tool for public authorities allowing them to assess costs of various adaptation solutions across several regions.

The proposal must demonstrate that it goes beyond state of the art and should identify data gaps and discuss approaches to overcome the data gaps in the future. In particular, the proposal should look at

- a) resolution and completeness of data for exposure assessments
- b) data on construction costs, construction quality and characteristics (notably protection against extreme weather events) as well as on planned redundancies.

⁵⁴ Costs for re-construction of the damaged asset
⁵⁵ Consequences on other systems if a critical infrastructure is not functioning
⁵⁶ see <https://climate.copernicus.eu/climate-data-sustainable-infrastructure>

c) data on the use of the infrastructures (for example how many trains, cars or households are served)

The proposals should give due regard to the Commission *technical guidance*⁵⁷ on the climate proofing of infrastructure in the period 2021-2027, notably as regards climate resilience, the climate vulnerability and risk assessment, as well as the identification, economic and technical appraisal, and implementation of relevant adaptation measures.

HORIZON-MISS-2021-CLIMA-02-04: Large scale demonstrators of climate resilience creating cross-border value

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 15.00 and 25.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 50.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p> <p>A clear written commitment is required from the participating regions in which the action proposed will be implemented, expressed by a letter of intent annexed to the proposal and signed by the corresponding authority/ies.</p> <p>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).</p>

Expected Outcome:

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

- Systemic demonstration of a climate-resilient society, fully adapted to the unavoidable impacts of climate change by 2050, based on full scale technological and social innovation solutions on the ground providing reinforced adaptive capacity and

⁵⁷ Commission Notice C(2021) 5430 final of 29.7.2021: https://ec.europa.eu/clima/sites/default/files/adaptation/what/docs/climate_proofing_guidance_en.pdf and https://ec.europa.eu/commission/presscorner/detail/en/IP_21_3943

minimised vulnerability to climate impacts, in line with the Paris Agreement and the European Climate Law⁵⁸ ;

- Innovative climate resilience socio-technological solutions are scaled up and largely deployed through collaboration and twinning between **front-runners and less experienced regions** , vulnerable to similar climate risks and impacts;
- Suitable solutions for just societal transformation and building climate resilience at the regional and local level are developed and adopted, through tailor-made measures matching the local needs, as climate impacts, adaptive capacities and disaster risk reduction capabilities differ greatly across regions.

Scope: This topic relates to the Mission’s third objective, aiming to deliver at least 75 deep demonstrations of systemic transformations to climate resilience.

Proposals under this topic must deploy **large-scale demonstrations of scientifically sound innovative solutions**, combining technological and social innovation, with concrete measurable impacts leading to an increase of the resilience and adaptation capacity to climate change across the territory of the European Union and associated countries⁵⁹.

As climate impacts, adaptive capacities and disaster risk reduction capabilities differ greatly across regions, scientific development and innovation should address specific needs **at regional and local scale**, fully acknowledging place-based governance, socio-economic and identity characteristics and other place-based data, with tailor-made responses and measures, which are required for a positive and just societal transformation towards climate resilience. To get the Mission kick-started, this topic is based on a full openness, bottom-up principle. For this call, no thematic focus is pre-defined to leave each proposal define the most relevant climate vulnerabilities and risks to be addressed in the regions involved, for example extreme precipitations events or extreme droughts.

Inter-regional collaborative actions to demonstrate and scale up effective solutions are highly encouraged, where regions **front-runners** that are most experienced in climate resilience building would collaborate in addressing interregional challenges with regions **less experienced that are vulnerable to similar climate impacts**, creating a common place to test and deploy the most suitable solutions and to exchange best practices. Proposals should include at least demonstration in three regions where adaptation actions will be deployed to increase the resilience of these regions to the negative effects of climate change. These three minimum regions must be located in different EU Member States or Horizon Europe associated countries, with at least one demonstration taking place in a less developed region⁶⁰. For each of the demonstrators that will take place in front-runner regions, the proposal should support replication of the successful demonstration in at least two more less experienced regions. The consortium may include other type of partners, such as private or

⁵⁸ COM/2020/80 final

⁵⁹ adding the reference of the official HE document where the Associated countries are listed

⁶⁰ defined as those eligible for cohesion funds by REGULATION (EU) 2021/1058

public research organisations and enterprises, to ensure that all needed capabilities are available.

The contribution from Horizon Europe budget to projects under this topic is intended to stimulate substantial additional investments from national and European public funding programmes and from private sources. A written commitment to apply for complementary funding is required from the participating regions in which the action proposed will be implemented in case the project will be selected for funding. This should be expressed by a letter of intent annexed to the proposal signed by the corresponding authority/ies from the participating regions. The letter should state the willingness of the Regional authority to seek (when possible) **complementary funding** from other national and European programmes for investments aiming at increasing resilience and adaptation to climate change. This will include in particular European Regional Development and Cohesion Fund and the Next generation EU.

To unlock / identify links to EU Regional Funds to implement their climate adaptation plans and strategies contributing to a sustainable and inclusive growth, regions involved in the proposals could leverage JRC guidance and support to EU regions and Member States in the development of smart specialisation strategies. In particular, the regions could tap in to JRC support in the development of specific synergetic actions in the area of climate adaptation among Horizon Europe, national research and innovation programmes, cohesion policy programmes and the Next generation EU recovery instrument.

The possible participation of the JRC in the project will also consist of supporting the analysis of nature-based solutions (e.g. biodiversity for climate resilience), which are beyond standard quick fixes and need careful evaluation taking into account regional aspects.

In agreement with the authorities responsible for the territories where the actions will be implemented, the consortium should develop a **scalability plan** including the diffusion of innovative solutions, and a process for commitments (including funding and governance) in adopting large-scale and long-term resilience building. The consortium should seek guarantees for the non-reversibility, sustainability and continuity of the actions after the end of the project.

Proposals should (when relevant) build upon existing knowledge and adaptation solutions, including from beyond EU, designed and developed from previous projects on climate adaptation funded by European and National programmes in particular the European Union Framework programmes for Research and Innovation (such as Horizon 2020), as well as Copernicus, the Group on Earth Observations, the LIFE programmes and the EIT Climate KIC ⁶¹ and **support the upscaling of successful pilots**.

Proposals should be consistent with the EU actions taken to boost its resilience over the past years and in particular the strategies or plans developed by EU Member States and associated countries.

⁶¹ [Deep Demonstrations - Climate-KIC](#)

Projects funded under this topic should aim for clear, discernible results in short- to medium-term, embedding them in a perspective of long-term systemic change. Interventions should result in large impact and visible actions, with a focus on rapid scalability and deployment of effective solutions. While the project duration is expected to be 4-5 years, projects should provide a detailed description of the results that will be in place by the end of the third year and the timeline to exploit the full results. Actions are expected to deliver visible results in-situ by the end of the project. Project progress, including its scalability and exploitation plan, will be monitored continuously by the granting authority on a yearly basis as part of the monitoring process of the Climate Adaptation Mission. The project should also commit to sustain longer term results and to follow up beyond the end of the project duration, through the involvement of the relevant authorities, as climate resilience building at large territorial scale, in particular through large scale nature-based solutions, implies that certain results can only manifest themselves longer term.

Proposals should include a mechanism and the resources to establish operational links with the Climate-ADAPT platform⁶² (run by the European Environment Agency (EEA) together with DG CLIMA) that will act as a central element for the monitoring, support and visualisation of the Mission progress in European Regions. To this purpose, projects will feed their results to the Climate-ADAPT and EEA assessments.

Projects funded under this topic are strongly encouraged to participate in networking and joint activities with other projects funded under other topics in the Mission Climate Adaptation as well as in other relevant Missions, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. Of particular importance in this context are topics HORIZON-MISS-2021-OCEAN-02-01: European Blue Parks and HORIZON-MISS-2021-OCEAN-02-03: Atlantic and Arctic basin lighthouse - restoration of marine ecosystems. To this extent, proposals should provide for dedicated activities and earmark appropriate resources.

The European Commission intends to establish a network and coordination activities amongst all the projects funded for the implementation of the Climate adaptation Mission, and also those funded under the Horizon 2020 European Green Deal call⁶³ and under Horizon Europe when particularly relevant to climate adaptation knowledge and solutions, and that will be coordinated by the soon to be established Mission Implementation Platform. The projects under this topic will be requested to contribute to this effort. Applicants should acknowledge this request and already account for these obligations in their proposal, making adequate provisions in terms of resources and budget to engage and collaborate with the Mission governance.

⁶² https://climate-adapt.eea.europa.eu/about/climate-adapt-profile-final_2019.pdf

⁶³ This refers to projects granted under call H2020-LC-GD-2020, topic LC-GD-1-3-2020. The projects are still in grant preparation at the time of writing. They will be operational right at the official planned start of the Mission. In addition to the development of innovation packages improving climate resilience, a Coordination and Support Action will foster their adoption and wide reapplication in at least 10 vulnerable and low-capacity regions. A Coordination and Support Action is already included in the Horizon Europe work programme 2021 to provide additional support to regional and local authorities

HORIZON-MISS-2021-CLIMA-02-05: Local engagement of citizens in the co-creation of societal transformational change for climate resilience

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 3.00 and 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 5.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility conditions</i>	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: Projects are expected to contribute to all the following outcomes:

- Well established mechanisms to meaningfully involve and engage citizens and stakeholders in the transformation to climate resilience in the regions and communities participating in the Mission on Adaptation to Climate Change;
- Innovative problem-oriented climate adaptation solutions are co-designed and co-created through solid approaches to engage citizens, civil society, academics, experts, social partners, policy-makers, entrepreneurs and other relevant actors;
- Empowerment of citizens in contributing to the Mission in their region and community, including by enabling them to collect and analyse relevant data, to act on reducing the effects of climate change, and by limiting the impact of disinformation campaigns perpetrated to contrast citizens' engagement for climate resilience;
- An enhanced and increased toolbox of innovative mechanisms and approaches of engaging citizens and stakeholders in transformative processes, and a better understanding of their success factors in different cultural, social, political and environmental contexts;
- Alliances of high impact, in order to increase the likelihood of long-term sustainability and social acceptability of citizen-led actions in the context of the Mission adaptation.

Scope: This topic contributes to the three objective of the Mission and correspond to one of the thematic research areas described in the Mission Implementation Plan⁶⁴.

⁶⁴ https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en

With the engagement of citizens and stakeholders at the very heart of the Mission approach, the central aim of this topic is to support regions and communities in the meaningful and effective engagement of citizens and stakeholders in all phases of the Mission and in all steps of the region's transformational journey to climate resilience.

To ensure this support, proposals should address all of the following aspects:

- **To provide direct support to the regions and communities** sharing relevant state-of-the-art knowledge, best practices and emerging innovations on how best to engage citizens and stakeholders and providing guidance and support regarding the implementation of citizens and stakeholders engagement activities.
- **To undertake research and test innovative solutions** using the citizens and stakeholder engagement activities ongoing in the regions and communities as case studies to better understand their success factors and to explore and experiment with new innovative ways of engaging citizens and stakeholders in transformative processes, and to feed this information back to all regions and communities.
- **To ensure synergies between the Mission and other relevant initiatives** in engaging citizens and stakeholders at local, national, and European level and to share relevant knowledge and experience made in the Mission more broadly.

The proposal should cover a broad range of approaches, mechanisms and initiatives to meaningfully and effectively engage citizens and stakeholders in each step of the transformative journey to climate resilience in both problem framing and solving of the issues at stake, including but not limited to:

- The engagement of citizens and stakeholders in the co-production of the assessment of climate impacts and risks; in an inclusive deliberation of the regions' climate resilient vision and the co-design of plausible futures scenarios for their regions and communities; or the communication strategies that mobilise individuals and collectives into greater civic involvement as needed to trigger transformative change.
- The engagement of citizens and stakeholders in the co-design, co-development and co-implementation of innovative solutions to reach climate resilience, for example through citizen science approaches, as a value-adding, cost-effective, responsible and impactful ways to address some of local and regional communities' and society's greatest challenges.
- The engagement of citizens and stakeholders in the gathering and analysis of relevant data and the monitoring of climate risks, transformational changes and the co-evaluation of the progress of the Mission itself, for example through citizen observatories.

The proposal should use the opportunities offered by the Mission's endeavour and its activities ongoing in the regions and communities as test bed and should use activities related to local engagement of citizens on climate adaptation across the Mission's geographical scope as case-studies to:

- Understand how best to employ the various approaches and mechanisms to engage citizens and stakeholders in different cultural, social, political and environmental contexts and how participatory practices can be leverage points for more effective policy interventions and research in relation to at least one of the three objectives of the Mission.
- Better understand the role and optimal use of citizens and stakeholder engagement in processes of societal transformations such as the transformation to climate resilience envisaged by this Mission.
- Test and experiment with innovative approaches and mechanisms of citizens and stakeholder engagement, including the exploration of participatory platforms (such as the one used for the Conference on The Future of Europe) to maintain a continuous debate and co-creation online and hybrid spaces at different geographical scales.
- Identify and address the market potentials and the critical elements preventing a larger uptake of citizen observations, for example building on the citizen observation roadmap⁶⁵ developed through the Horizon 2020 project WeObserve, with concrete policy recommendations on how to tackle these elements.

The proposal should ensure synergies with the many initiatives at local, national and European level for which citizen engagement is an increasingly important cornerstone, in particular where these citizen-led initiatives are related to climate change adaptation. At European level, this includes, among others, initiatives such as the Conference on the Future of Europe, the Climate Pact, Education for Climate Coalition, the European Democracy Action Plan⁶⁶, the New European Bauhaus, ESF+, New Skills Agenda, the Biodiversity Strategy 2030 and other Missions, the European Green Deal Call⁶⁷ and Horizon Europe Calls for Proposals⁶⁸. In this context the action should, inter alia,

- Provide opportunities to build partnerships with and learn from existing participatory and deliberative processes carried out (e.g., *Convention Citoyenne pour le climat*, the *Bürgerrat Klima – Die Ergebnisse*, the Antwerp experiment to fight poverty and unemployment while reaching city Climate targets),⁶⁹ at national, regional and local levels.
- Liaise with previous and on-going projects in the context of citizen observations, for example with WeObserve project and the projects granted under the Horizon 2020 Green Deal call topic 10.3.2.

⁶⁵ <https://zenodo.org/record/4646774#.YVbDG5pByUn>

⁶⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0790&from=EN>

⁶⁷ E.g. European Green Deal Call topic LC-GD-10-3-2020

⁶⁸ E.g. https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-5-culture-creativity-and-inclusive-society_horizon-2021-2022_en.pdf

⁶⁹ https://nws.eurocities.eu/MediaShell/media/353-green-web_final.pdf

- Cooperate with key stakeholders of the EU strategy to tackle disinformation (i.e. signatories of the Code of Practice on disinformation⁷⁰, European Digital Media Observatory⁷¹) to limit the impact of disinformation campaigns perpetrated to support climate change denial

The proposal should increase citizen empowerment, in contributing to the objectives of Mission Adaptation, by engaging them, supporting them and providing them the opportunities to co-create actions that they can perform, and by ensuring their access to training and customised services in the partner regions. The proposals should contribute to enhance the capacity of citizens and civil society at large, to affect the decision-making process, at different stages of the policy cycle, from data collection to policy design, implementation and evaluation) and in the spirit of the Aarhus Convention⁷², as well as to genuinely empower citizenry on local matters of care and concern.

For this, the consortium selected to deliver on this action needs to build strong relationships between the local partners collaboration with national, local and regional authorities, social partners, managing authorities and intermediate bodies of Cohesion Policy, stakeholders of Smart Specialisation Strategies, Commission Representations, Europe Direct Information Centres, EIT Climate-KIC regional offices, Erasmus+ Offices, EU Covenant of Mayors Office, Global Covenant of Mayors.

The possible participation of the JRC in the project will consist of analysing the appreciation of ecosystems with corresponding respectful socio-economic behaviour, for which a careful evaluation needs to take into account regional aspects.

The project funded under this topic is strongly encouraged to participate in networking and joint activities with other projects funded under other topics in the Mission Climate Adaptation as well as in other relevant Missions, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. Of particular importance in this context is topic HORIZON-MISS-2021-OCEAN-05-03: Piloting citizen science in marine and freshwater domains. To this extent, proposals should provide for dedicated activities and earmark appropriate resources.

Call - Research and Innovation actions in support of the implementation of the Adaptation to Climate Change Mission

HORIZON-MISS-2022-CLIMA-01

⁷⁰ <https://digital-strategy.ec.europa.eu/en/policies/code-practice-disinformation>

⁷¹ <https://digital-strategy.ec.europa.eu/en/policies/european-digital-media-observatory>

⁷² <https://ec.europa.eu/environment/aarhus/index.htm>

Conditions for the Call

Indicative budget(s)⁷³

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁷⁴	Number of projects expected to be funded
		2022		
Opening: 12 May 2022 Deadline(s): 27 Sep 2022				
HORIZON-MISS-2022-CLIMA-01-01	RIA	6.00 ⁷⁵	2.00 to 3.00	2
HORIZON-MISS-2022-CLIMA-01-02	RIA	6.00 ⁷⁶	5.00 to 6.00	1
HORIZON-MISS-2022-CLIMA-01-03	RIA	6.00 ⁷⁷	2.00 to 3.00	2
HORIZON-MISS-2022-CLIMA-01-04	RIA	6.00 ⁷⁸	5.00 to 6.00	1
HORIZON-MISS-2022-CLIMA-01-05	RIA	3.00 ⁷⁹	2.00 to 3.00	1
HORIZON-MISS-2022-CLIMA-01-06	IA	88.32 ⁸⁰	12.00 to 20.00	5

⁷³ 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 years 2021 and 2022.

⁷⁴ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁷⁵ Of which EUR 1.42 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.76 million from the 'Digital, Industry and Space' budget and EUR 0.12 million from the 'Civil Security for Society' budget and EUR 3.57 million from the 'Climate, Energy and Mobility' budget and EUR 0.13 million from the 'Culture, creativity and inclusive society' budget.

⁷⁶ Of which EUR 1.42 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.76 million from the 'Digital, Industry and Space' budget and EUR 3.57 million from the 'Climate, Energy and Mobility' budget and EUR 0.12 million from the 'Civil Security for Society' budget and EUR 0.13 million from the 'Culture, creativity and inclusive society' budget.

⁷⁷ Of which EUR 1.42 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.76 million from the 'Digital, Industry and Space' budget and EUR 0.12 million from the 'Civil Security for Society' budget and EUR 3.57 million from the 'Climate, Energy and Mobility' budget and EUR 0.13 million from the 'Culture, creativity and inclusive society' budget.

⁷⁸ Of which EUR 1.42 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.76 million from the 'Digital, Industry and Space' budget and EUR 0.12 million from the 'Civil Security for Society' budget and EUR 3.57 million from the 'Climate, Energy and Mobility' budget and EUR 0.13 million from the 'Culture, creativity and inclusive society' budget.

⁷⁹ Of which EUR 0.71 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.38 million from the 'Digital, Industry and Space' budget and EUR 0.06 million from the 'Civil Security for Society' budget and EUR 1.79 million from the 'Climate, Energy and Mobility' budget and EUR 0.06 million from the 'Culture, creativity and inclusive society' budget.

Horizon Europe - Work Programme 2021-2022
Missions

Overall indicative budget		115.32		
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General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

In 2022, the Mission will support the development and testing of solutions addressing one or more of the systems identified in the Mission Implementation Plan as key for climate resilience building. It will foster the development of a balanced portfolio of solutions across the different climate risks and the different biogeographical regions, as defined by the EEA.

The Mission will provide state of the art knowledge and identify key remaining gaps on enabling conditions for building climate resilience in all phases (plan, respond, adapt). These include embedding digital technologies in climate risk monitoring, modelling and simulation, unlocking financial resources to improve the bankability of the adaptation solutions, defining best practices for the provision of climate-relevant insurance products, including in financial instruments to manage temporary risks, whether market or climate-induced, and untapping the potential of novel and innovative approaches to transfer climate risks to insurance sector actors.

Proposals for topics under this Mission should set out a credible pathway to adapting to Climate Change in Europe, and more specifically to all of the following impacts:

⁸⁰ Of which EUR 20.95 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 11.19 million from the 'Digital, Industry and Space' budget and EUR 1.76 million from the 'Civil Security for Society' budget and EUR 52.57 million from the 'Climate, Energy and Mobility' budget and EUR 1.84 million from the 'Culture, creativity and inclusive society' budget.

- Accelerate the transformation to a climate resilient future in a number of regions
- Deploy at full scale the systemic transformations locally needed to build climate resilience.

In the spirit of the Mission Implementation Plan, all proposals should also adopt a participatory approach that takes full consideration of the local dimension of climate change and climate adaptation strategies, and entails collaboration and engagement with the local communities that are affected, in the first place, by climate challenges. Engagement of citizens should therefore be foreseen in the design and/or implementation of the solutions, strategies and developments.

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-CLIMA-01-01: User driven applications and tools for regional and local authorities, and other end users focusing on climate impacts, data and knowledge.

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 2.00 and 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 6.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility conditions</i>	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: Projects are expected to contribute to all of the following outcomes:

- Better access to, and transformation of, the already openly available climate data in the C3S Climate Data Store⁸¹, Climate ADAPT and relevant Horizon 2020 projects or other initiatives (such as GEOSS⁸²) into user-relevant climate change services, in combination with locally sourced data and information, where available. Long-term safeguarding of developed solutions by integration in the operational infrastructure and services of the Climate Data Store should also be explored.

⁸¹ <https://cds.climate.copernicus.eu#!/home>

⁸² GEOSS: Global Earth Observation System of Systems (earthobservations.org)

- Beyond-state-of-the-art relevant information (including climate, socio-economic, demographic information) services and tools tailored to Mission users' needs (decision makers, local and regional authorities and other end users), with customizable data-manipulation tools available for use and re-use.
- Quality-controlled climate data services that the Mission could build upon, supported and maintained as customizable, user-oriented components of operationally supported EU services (such as the C3S). Projects might want to refer to, and follow guidance, from the project under the topic on "Supporting and standardising climate services"⁸³.
- Tested FAIR data governance and management mechanisms that enable the sharing, community validation and use of locally sourced data (e.g. citizen-generated data) and information, in combination with authoritative data and information as part of the European Green Deal Data Space.
- Demonstrated application in at least 5 EU regions or communities ⁸⁴.

Scope: This topic relates to the Mission's first and second objective: i) preparing and planning for climate resilience and the need for a better understanding of climate change related risks and ii) supporting at least 150 European regions and communities in developing their vision of a climate-resilient future and innovation pathways to reach it.

The successful proposal will develop new technologies addressing access to key climate data and information services; such technologies will use improved user-defined and user-friendly tools tailored to regional and community level applications for adaptation to climate change able to build climate resilience in all sectors/services involved; the focus will be on case-specific climatological and physical conditions critical for the areas mentioned in the Mission Implementation Plan⁸⁵.

Therefore, proposals⁸⁶ should address all of the following:

- Set forth improved user-defined data manipulation tools that can be used, reused and further developed, thereby contributing to an ecosystem of readily available tools and integrated information services. The tools developed should be designed as a component of decision support tool for public authorities integrating socio-economic aspects and

⁸³ [HORIZON-CL5-2021-D1-01-06](https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/climat_mission_implementation_plan_final_for_publication.pdf)

⁸⁴ As defined by the Mission Implementation Plan https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/climat_mission_implementation_plan_final_for_publication.pdf and in the FAQ published http://here:https://ec.europa.eu/info/events/information-session-mission-adaptation-climate-change-2021-nov-23_en

⁸⁵ Ecosystems and nature-based solutions, land use and food systems, water management, critical infrastructure, health and human wellbeing, and local economic systems (pages 7-9 of the Implementation Plan) https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/climat_mission_implementation_plan_final_for_publication.pdf

⁸⁶ Possible participants: experts from a variety of sectors (private, public, academia) with experience on the services to be provided by the topic. National, regional or local authorities are encouraged to be part of the consortium.

allowing them to assess risk-reduction benefits of various adaptation solutions across several regions.

- Consider impacts of climate change on key community systems highlighted in the Mission Implementation Plan⁸⁷, across several climate regions and how their functioning might be affected by climate change induced risks.
- Develop a gap-analysis of accessibility, usability, customization and adaptability of existing European relevant information (including climate, socio-economic, demographic information) services with respect to user needs at regional and community levels. Prepare and implement training and capacity building, adapted for non-experts local end-users (beyond the 5 regions where the tools are demonstrated) to support them in using or tailoring the tools developed by the project.
- Identify data availability and data accessibility gaps, and overcome barriers and limitations of existing approaches. In particular, proposals are encouraged to take into account:
 - Consistency in the definition of climate risk indicators in view of the Mission objectives and projects addressing climate change risks⁸⁸;
 - Socio-economic data at the local level and integrating it to the tools and services developed or improved for regional and local end-users;
 - The experience from the Sectoral Information System⁸⁹ demonstrators of the Copernicus Climate Change Service and from relevant Horizon 2020 projects;
 - Access to EU digital infrastructures;
 - Destination Earth, European Open Science Cloud, Copernicus DIAS and GEOSS.
- Address the provision of user-relevant climate change indicators linked to socio-economic and demographic data to public authorities and Mission end users.
- Factor in the effect of multiple hazards (including complex, cascading and compound disasters) in support of the activities set out in the topic focused on the “Development of climate change risk assessments in European regions and communities based on a

⁸⁷ Ecosystems and nature-based solutions, land use and food systems, water management, critical infrastructure, health and human wellbeing, and local economic systems. Implementation plan : https://ec.europa.eu/info/sites/default/files/research_and_innovation_funding/documents/climat_mission_implementation_plan_final_for_publication.pdf

⁸⁸ Namely topic HORIZON-MISS-2021-CLIMA-02-01 “Development of climate change risk assessments in European regions and communities ...” and HORIZON-MISS-2021-CLIMA-02-03 “Towards asset level modelling of climate risks and adaptation”

⁸⁹ The Sectoral Information System (SIS) component of C3S transforms the climate data contained in the CDS and tailors it to the requirements of users, with a specific focus on intermediaries and policy makers. C3S has engaged with various sectors and showed how the CDS infrastructures could be used to address the needs of users, see fact sheets at <https://climate.copernicus.eu/c3s-multimedia>.

transparent and harmonised Climate Risk Assessment approach (HORIZON-MISS-2021-CLIMA-02-01).”

- Give due regard to the Commission *technical guidance*⁹⁰ on the climate proofing of infrastructure in the period 2021-2027, notably as regards climate resilience, the climate vulnerability and risk assessment, as well as the identification, economic and technical appraisal, and implementation of relevant adaptation measures.
- Provide coordination between the targeted regions/communities with respect to their climate data needs, to identify overlaps, synergies and cost-sharing opportunities.
- Ensure the solutions’ long-term viability through integration within the toolbox of the Climate Data Store and/or other operationally supported technical infrastructures.
- Discuss with and engage local communities and all relevant stakeholders (e.g., experts, policy-makers etc.) in a given region, in knowledge-sharing and production, testing the technology itself and making sure all knowledge, relevant to climate resilience, is represented.

Priority should be given to regions or communities with high vulnerability⁹¹, limited resources and/or low adaptive capacity⁹² to climate change impacts. Demand for this type of services could be higher than what can be supplied within the limits of this action. Therefore proposals to this call should present the process and criteria how the target regions and communities are identified. These criteria will ensure that a variety of locations are represented, in as many countries as possible, reflecting the diversity in climatic risks in Europe, as well as differences in socio-economic and demographic conditions, and in approaches to mitigating such risks. Such criteria should also take into account the characteristics of the populations concerned and the vulnerability of the locations, as well as the priority attributed by national and regional governments. Consultation of national and regional governments in selecting the regions and communities is recommended (for example, by providing a letter of support by the relevant authorities as an annex to the proposal).

Dedicated activities should be included for facilitating replication in further regions/communities.

In line with the overall principles of the Mission, proposals should take in full consideration the local dimension of climate change and climate adaptation strategies, clarify how they would ensure a meaningful engagement with local communities as well as stakeholders to

⁹⁰ Commission Notice C(2021) 5430 final of 29.7.2021: https://ec.europa.eu/clima/sites/default/files/adaptation/what/docs/climate_proofing_guidance_en.pdf and https://ec.europa.eu/commission/presscorner/detail/en/IP_21_3943

⁹¹ Vulnerability is the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2018 – SR Global Warming of 1.5 °C).

⁹² Adaptive capacity is the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (IPCC, 2018 – SR Global Warming of 1.5 °C).

ensure, among others, the mobilization of local knowledge, and outline how they would contribute to achieving a just transition to climate resilience

This topic requires the effective contribution of Social Science and Humanities (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.

The European Commission intends to establish a network and coordination activities amongst all the projects funded for the implementation of the Climate adaptation Mission, under the Horizon 2020 European Green Deal call and under Horizon Europe relevant for adaptation, and that will be coordinated by the soon to be established Mission Implementation Platform. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. The project under this topic will be requested to contribute to this effort. Applicants should acknowledge this request and already account for these obligations in their proposal, making adequate provisions in terms of resources and budget to engage and collaborate with the Mission governance.

HORIZON-MISS-2022-CLIMA-01-02: Unlocking of financial resources for investments into climate resilience

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 6.00 million.
<i>Type of Action</i>	Research and Innovation Actions

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

- An increased leveraging of finance into climate resilience investments in the context of the Mission Adaptation to Climate Change.
- An increased and improved range of investment concepts that are proven to have helped public authorities in leveraging finance into climate resilience investments.
- An increased capacity of public authority staff for developing investible climate resilience projects.

- A better understanding of mechanisms that would accelerate the transformation of the economic system and financial sector to internalise and reward climate resilient investments.

Scope: This topic contributes to the three objective of the Mission and corresponds to one of the thematic research and innovation areas described in the Mission Implementation Plan aiming to mobilise and improve the articulation of funding and financing from various public and private sources at different levels (EU, national, regional and local)⁹³.

This topic is expected to support regions and communities participating in the Mission with developing investment strategies, including identifying, innovating and, to the extent possible testing, solutions that help to mobilise financing and resources, throughout their transformational journey to climate resilience. The applied research and the experimentation with innovative solutions as further outlined below should be at the centre of the project.

The mobilisation of significant financial resources is key in addressing the climate resilience challenge. The economic case for investing in climate adaptation is powerful, with cost-benefit ratios ranging from 1:2 to 1:10 whereas early action on adaptation brings a “triple dividend” of avoided losses, economic and socio-environmental benefits⁹⁴. Yet, the investment gap in climate adaptation, with investment needs in the EU estimated to range between EUR 35 billion and 500 billion annually⁹⁵, is reportedly one of the most important barriers to further progress towards climate resilience. Reasons for this include large upfront costs, difficulties with internalising benefits and insufficient incentives to attract private investors under the existing market architecture where short-term mind-set makes investing for the future difficult, as well as a lack of capacity to identify, combine, apply for and negotiate the various financing streams at local and regional level^{96,97}.

To address these challenges, the proposal is expected to:

- **Provide direct pragmatic, hands-on advisory support to the regions and communities** on how to mobilise, access and combine in practice various financing sources for climate resilience.
- **Undertake research and test innovative financing solutions** using the activities ongoing in the regions and communities as case studies to better understand their success factors and boundary conditions and to explore and experiment with new innovative ways of mobilising and financing for climate resilience, feeding this information back to all regions and communities.
- **While undertaking the above, to ensure synergies between the Mission and other relevant programmes and initiatives** engaged in mobilisation and articulation of

⁹³ https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en

⁹⁴ After Global Center on Adaptation <https://gca.org/programs/climate-finance/>

⁹⁵ <https://www.eib.org/en/publications/the-eib-climate-adaptation-plan>

⁹⁶ <https://www.eea.europa.eu/publications/financing-urban-adaptation-to-climate-change>

⁹⁷ <https://op.europa.eu/en/publication-detail/-/publication/0ec85025-fc85-11ea-b44f-01aa75ed71a1>

finances for climate resilience transformations at local, national, and European level and to share relevant knowledge and experience made in the Mission more broadly.

Regarding the provision of direct support to the regions and communities, and the Mission's aim to help facilitate the translation of adaptation strategies into investments on the ground, the proposal should cover a broad range of financing approaches, mechanisms and initiatives, from different governmental levels and private sources, covering as much as possible all innovation areas of the Mission, including but not limited to:

- Develop, for and with at least 20 EU regions or communities⁹⁸, innovative investment strategies covering identification of a potential project pipeline, financial, economic, legal and governance analysis and design of the process to launch investments;
- Provide hands-on technical and financial expertise, inspired by best practices across Europe to deliver at least 10 credible and scalable investment plans, from the above 20 regions or communities;
- Build the capacity of at least 20 public authority staff (one in each of the regions or communities) to design, develop and implement bankable projects on climate resilience, and provide them with the necessary tools (e.g. models, data), knowledge and networking opportunities;
- Hold at least 4 webinars addressed to regions and communities all over Europe (as many as possible should participate), on how to design bankable projects and to identify, apply for and negotiate various financing streams, and provide them with tools, networking and knowledge transfer.

Regarding the undertaking of research and testing of innovative solutions, the proposal should use the opportunities offered by the Mission's endeavour and its activities ongoing in the regions and communities as test bed and should use activities related to the mobilisation of resources across the Mission's geographical scope as case-studies to:

- Understand how best to employ the various approaches of financing in different geographical, cultural, social, political, economic, and environmental contexts.
- Identify barriers to the mobilisation of financing for climate resilience, carry out research into those and develop recommendations on how best to address them.
- To the extent possible, test and experiment with innovative finance solutions.
- Explore mechanisms that would accelerate the transformation of the economic system and financial sector to internalise and reward climate resilient investments. This should involve cooperation with the financial sector.

⁹⁸ Regions and communities which should not necessarily be beneficiaries in the consortium, however they should be strongly connected to the work and the support that the consortium will provide

- Test the above (recommendations to address barriers, mechanisms and integration of the macroeconomic impacts into models and tools) with at least 3 banks/financial services providers over at least 3 regions or communities, and explore innovative credit/financial scoring with the aim of integrating climate resilience perspective into assessment criteria.

Regarding the synergies between the Mission and other relevant initiatives aiming at the mobilisation of finances and resources for climate adaptation and resilience, the proposal should:

- Establish links and build on the various other relevant programmes and initiatives, such as the EU taxonomy for sustainable activities and the European Cities Facility (EUCF)⁹⁹.
- Build synergies in particular with the EIB's announced Climate Adaptation Investment Advisory platform (ADAPT) that is to provide advisory services that have the potential to strengthen climate resilience of cities, infrastructure networks, coastal areas and river basins, farming practices and other vulnerable activities.¹⁰⁰
- Support the Mission Implementation Platform in making accessible the different potential funding sources for climate resilience related activities and possible financial designs for climate resilience portfolios.
- Learn from and complement the efforts of the projects related to the Mission funded under the Green Deal Call¹⁰¹ and the call HORIZON-MISS-2021-CLIMA-01, as well as to relevant projects and structures of other Missions, such as the NetZeroCities project and the Cities Mission Platform.

The main sources of funding to be considered in the context of this topic include (i) governmental sources, mostly grants including EU funding instruments, national, regional and local budgets; (ii) banks and other financial institutions providing loans and guarantees, either directly or in partnership with local retail banks; and (iii) private stakeholders, including foundations, real estate developers, companies, individuals (e.g. via crowdfunding or as house owners).

In line with the overall principles of the Mission, proposals should take in full consideration the local dimension of climate change and climate adaptation strategies, clarify how they would ensure a meaningful engagement with local communities as well as stakeholders to ensure, among others, the mobilization of local knowledge, and outline how they would contribute to achieving a just transition to climate resilience.

Proposals should include a process and criteria for how to identify the regions and communities most relevant to become test beds for the proposed solutions, starting from those where Mission relevant activities are already ongoing. Priority should be given to regions or

⁹⁹ [European City Facility | UBC Sustainable Cities Commission \(ubc-sustainable.net\)](https://www.eib.org/en/publications/the-eib-climate-adaptation-plan)

¹⁰⁰ <https://www.eib.org/en/publications/the-eib-climate-adaptation-plan>

¹⁰¹ REGILIENCE, ARSINOE, IMPETUS, TransforAr

communities with high vulnerability , limited resources and/or low adaptive capacity to climate change impacts. These criteria will ensure that a variety of locations are represented, in as many countries as possible, reflecting the diversity in climatic risks in Europe, as well as differences in socio-economic and demographic conditions, and in approaches to mitigating such risks. Such criteria should also take into account the characteristics of the populations concerned and the vulnerability of the locations, as well as the priority attributed by the national and regional governments. Consultation of national and/or regional governments in selecting the regions and communities is recommended (for example, by providing a letter of support by the relevant authorities as an annex to the proposal).

The European Commission intends to establish a network and coordination activities amongst all the projects funded for the implementation of the Climate adaptation Mission, under the Horizon 2020 European Green Deal call and under Horizon Europe relevant for adaptation, and that will be coordinated by the soon to be established Mission Implementation Platform. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. The project under this topic will be requested to contribute to this effort. Applicants should acknowledge this request and already account for these obligations in their proposal, making adequate provisions in terms of resources and budget to engage and collaborate with the Mission governance.

HORIZON-MISS-2022-CLIMA-01-03: Best practices on and piloting insurance solutions for climate adaptation in EU regions and communities

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 2.00 and 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 6.00 million.
<i>Type of Action</i>	Research and Innovation Actions

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

- A set of weather and climate risk insurance products to be used or replicated across EU regions and communities.
- Mechanisms to record, collect and share climate-related risk and losses data integrated within the Risk Data Hub ¹⁰², the Copernicus services, and other initiatives.
- Guidance on insurance pricing that reflect risks reduction measures, and to ensure affordable insurance cover.

¹⁰² [Risk Data Hub - European Commission\(europa.eu\)](https://ec.europa.eu/risk-data-hub/)

- Trial innovative risk transfer solutions to deal with climate-induced risk, including parametric insurance and insurance of nature-based solutions.
- Advance public sector modernization when it comes to the demand for insurance solutions for climate adaptation.
- Open up opportunities in the insurance market for cutting edge risk transfer solutions.
- Reinforced policy frameworks to facilitate the allocation of substantial additional national and regional budgets to increase the penetration in the EU of insurance solutions to deal with climate-induced risks.

Scope: This topic relates to all three objectives of the strategy, and is part of the key enabling conditions described in the Mission Implementation Plan¹⁰³, to test novel insurance solutions, insurance products and risk-transfer mechanisms. The applied research and the experimentation with innovative solutions as further outlined below under points 1 and 2 should be at the centre of the project.

Insurance is a key tool to compensate for losses after extreme climate events, yet its use in the climate adaptation domain is limited at the moment for a variety of reasons. Recent studies show that between 1980-2019, direct economic losses in EU-27 from climate-related events totalled at least EUR 419 billion¹⁰⁴. Only 35% of these losses were insured on average across the EU.

Proposals should address both the following aspects:

1. Best practices and filling the gaps on insurance coverage for climate adaptation

The proposal should address barriers to the use of insurance for climate adaptation, and improve the insurance cover in regions and communities.

Therefore, proposals should:

- Prepare a collection of weather and climate risk insurance products and best practices that could be included to existing products or replicated as new products in EU regions and communities
- Develop and implement mechanisms to collect and share comprehensive and harmonized data on climate-related risk and losses. Such mechanisms and data should be integrated with the Risk Data Hub
- Develop guidance capturing best practice on insurance pricing encouraging users to invest in adaptation and ensuring affordable insurance cover
- Feed into the deliberations of the Climate Resilience dialogue making available draft deliverables, as relevant.

¹⁰³ Page 9 [climat_mission_implementation_plan_final_for_publication.pdf\(europa.eu\)](#)

¹⁰⁴ [EIOPA's pilot dashboard addresses the natural catastrophe protection gap | Eiopa \(europa.eu\)](#)

- Provide direct support to at least three regions by:
 - Sharing relevant state-of-the-art knowledge, best practices and emerging innovations on insurance solutions,
 - Presenting advice on insurance gaps to be addresses by public budgets in the regions, and
 - Providing guidance and support regarding the type of insurance product that would best address the climate risks the region or community is and will face; look for actual products for these regions.

2. Trialing and experimentation of insurance solutions in EU regions and communities

As climate impacts become more severe and frequent European regions and communities need to lead by example by procuring insurance solutions to transfer risks and compensate for loses. The proposal should build on the guidance developed under the first element and start piloting insurance solutions that can increase Europe’s resilience and preparedness to face unavoidable consequences of climate change.

The proposals should:

- Develop a pilot of innovative insurance solutions in at least three regions or communities (vulnerable to different climate risks and located in different geographical areas) to address their climate risks. Such solutions could be new ones or from improving existing ones.
- Inform their plans with the guidance and recommendations from the deliverables under point 1.
- Demonstrate sustainability of the solutions piloted beyond the life of the project.

The project should work closely and establish synergies with other projects within the Mission and other relevant initiatives in the domain of climate adaptation insurance, such as the Climate Resilience dialogue, work being done by the European Insurance and Occupational Pensions Authority (EIOPA), relevant Horizon 2020 projects¹⁰⁵.

The consortia should include as associated partners¹⁰⁶ at least one insurance and/or re-insurance company in order to pilot the proposed actions. Furthermore, 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.

In line with the overall principles of the Mission, proposals should take in full consideration the local dimension of climate change and climate adaptation strategies, clarify how they

¹⁰⁵ [Horizon 2020 Insurance, NAIAD, ReSet](#), among others

¹⁰⁶ as per Horizon Europe general annexes: entities participating in the action but without the right to charge costs or claim contributions

would ensure a meaningful engagement with local communities as well as stakeholders to ensure, among others, the mobilization of local knowledge, and outline how they would contribute to achieving a just transition to climate resilience.

The European Commission intends to establish a network and coordination activities amongst all the projects funded for the implementation of the Climate adaptation Mission, under the Horizon 2020 European Green Deal call and under Horizon Europe relevant for adaptation, and that will be coordinated by the soon to be established Mission Implementation Platform. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. The project under this topic will be requested to contribute to this effort. Applicants should acknowledge this request and already account for these obligations in their proposal, making adequate provisions in terms of resources and budget to engage and collaborate with the Mission governance.

HORIZON-MISS-2022-CLIMA-01-04: Transformation of regional economic systems for climate resilience and sustainability

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 6.00 million.
<i>Type of Action</i>	Research and Innovation Actions

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

- Relevant economic sectors affected by climate change are transformed and ready to face the future anticipated climate changes risks;
- An increased and improved range of climate-resilient business models, value chains, and re-skilling opportunities (including training capabilities) are understood, socially acceptable and made available to all regions and communities;
- An increased capacity of local businesses, social partners and industries for sustainable coping with climate change;
- An increased capacity of national, regional and/or local governments, consumers organizations and other social partners, industries and businesses in empowering consumers to make informed choices and play active roles in transition to climate resilience;

- A better understanding of mechanisms that would drive transformation of the economic systems thanks to innovation, intended not only as technical innovation but also including social and user-driven innovation.

Scope: This topic contributes to the three objective of the Mission and correspond to one of the thematic research areas described in the Mission Implementation Plan¹⁰⁷. It is to support regions and communities participating in the Mission in all steps of their transformational journey to climate resilience with finding, innovating, and testing solutions that help their economic systems to become sustainable and climate resilient. The applied research and the experimentation with innovative solutions as further outlined below should be at the centre of the project.

Climate change affects macroeconomic outcomes, financial markets and institutions primarily through physical risks (gradual warming and extreme events) and transition risks. Possible channels of impact of climate change on the European economy include, for example, decline in agricultural productivity and yields, lower labour productivity due to extreme heatwaves and lower human capital accumulation due to increased health issues and mortality, new or increased occupational health and safety risks to workers, disruption to transport and production chains, or changes in sectoral composition of labour markets leading to higher structural unemployment.¹⁰⁸

The transformation of economic systems towards climate resilience will have to find pathways to climate resilience and sustainability for all relevant sectors that are affected by climate change, including climate-resilient business models, value chains, up-skilling and re-skilling dynamics, and always considering at the heart of the debate the acceptance of the innovations to be implemented by the society. These pathways should be aligned with the regions' smart specialisation strategies and integrated in the overall climate adaptation strategy of regions.

The support that the projects are to provide the regions and communities should include the following main aspects (further detailed below):

- **To provide direct support to the regions and communities** sharing relevant state-of-the-art knowledge, best practices and emerging innovations and solutions relevant to the transformation of all regional economic systems that are affected by climate change in the regional economic systems to become climate resilient.
- **To undertake research and test innovative solutions**, not only technically but also socially feasible, using the activities ongoing in the regions and communities as case studies to better understand their success factors and to explore and experiment with new innovative ways of preparing regional economic systems and their industries to become climate resilient and sustainable, building strengths on consumer protection and to feed this information back to all regions and communities.

¹⁰⁷

https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en

¹⁰⁸

[European Central Bank \(ECB\) Occasional Paper Series No 217 / September 2021](#)

- **While undertaking the above, ensure synergies between the Mission and other relevant programmes and initiatives** supporting transformations of economic systems to sustainability and resilience at local, national, and European level and to share relevant knowledge and experience made in the Mission more broadly.

Regarding the **provision of direct support to the regions and communities**, the proposal should cover a broad range of approaches, mechanisms and initiatives to prepare the economic systems across the production and consumption to become climate resilience, including but not limited to:

- support at least 20 regions or communities in the development of pathways for the transformation of all relevant sectors of their economic system that are affected by climate change;
- support to building public-private cooperation in the relevant industry helping them to transition to become at the same time resilient to climate change and compliant with the Sustainable Finance Taxonomy;
- improve skills intelligence to ensure up-to-date information on the skills needed to support the transformation to climate resilience, e.g. by developing a skills forecasting system, and fostering skills strategies aligning efforts across employment, consumption, education, research, industry and regional development policies;
- inform about alternative ways to more resilient regional and local economies, such as the approach of community wealth building¹⁰⁹ that emphasise more democratic ownership of the economy at local level, e.g., by developing local industrial strategies which stimulate co-operatives and social businesses or the creation of regional investment vehicles and holding companies;

Regarding the **undertaking of research and test innovative solutions**, the proposal should consider as test beds the opportunities offered by regions and communities already engaged in the Mission's endeavour and expand from there to address activities related to the transformation of economic systems across the Mission's geographical scope as case-studies to:

- understand how best to employ the various approaches and mechanisms in different cultural, social, political, economic and environmental contexts;
- test and experiment with innovative approaches encouraging place-based industrial innovation and experimentation allowing at least 20 regions or communities to develop and test new solutions (including with SMEs and consumers where relevant), drawing on their local characteristics, strengths and specialisms¹¹⁰;

¹⁰⁹ [Owning the future: After Covid-19, a new era of community wealth building](#)
¹¹⁰ [A New Industrial Strategy for Europe.COM\(2020\) 102 final](#)

- establish a continuous monitoring and data gathering on what goes well and what goes wrong, which local initiatives are not successful and how to re-orient them;
- improve measurement, modelling and policy tools to capture synergies between the circular economy and climate change adaptation;
- design and test short courses to reskill workers and master courses to train experts towards emerging jobs and new skills requirements related to the transition to climate resilience;

Regarding the **synergies between the Mission and other relevant initiatives** supporting transformations of economic systems to sustainability and resilience at local, national, and European level the proposal should describe:

- how it would bring to bear the different elements of the various other relevant programmes and initiatives within the context of the Mission, e.g., cohesion policy, regional smart specialisation strategies and ERDF funds, the New Industrial Strategy, the New Skills Agenda and ESF+ funds, the Circular Economy Action Plan, the Farm to Fork Strategy and the EU taxonomy for sustainable activities;
- how it would feed back the experience and lessons learnt within the Mission back to the other relevant programmes and initiatives.

Proposals should include a process and criteria to identify the regions and communities most relevant to become test beds for the proposed solutions, starting from those where Mission relevant activities are already ongoing. Priority should be given to regions or communities with high vulnerability¹¹¹, limited resources and/or low adaptive capacity¹¹² to climate change impacts. Proposals should present the process and criteria to target regions and communities selected. These criteria will ensure that a variety of locations are represented, in as many countries as possible, reflecting the diversity in climatic risks in Europe, as well as differences in socio-economic and demographic conditions, and in approaches to mitigating such risks. Such criteria should also take into account the characteristics of the populations concerned and the vulnerability of the locations, as well as the priority attributed by the national and regional governments. Consultation of national and/or regional governments in selecting the regions and communities is recommended (for example, by providing a letter of support by the relevant authorities as an annex to the proposal).

In line with the overall principles of the Mission, proposals should take in full consideration the local dimension of climate change and climate adaptation strategies, clarify how they would ensure a meaningful engagement with local communities as well as stakeholders to

¹¹¹ Vulnerability is the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2018 – SR Global Warming of 1.5 °C)

¹¹² Adaptive capacity is the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (IPCC, 2018 – SR Global Warming of 1.5 °C)

ensure, among others, the mobilization of local knowledge, and outline how they would contribute to achieving a just transition to climate resilience.

The consortium proposed to deliver on this action should include relevant industrial knowledge, with a capacity to understand and drive systemic, broadly defined innovation, including from the relevant innovation ecosystems and private sector; it should also count on expertise in social innovation, in user-driven innovation, in Living Labs dynamics, in transformative innovation.

The European Commission intends to establish a network and coordination activities amongst all the projects funded for the implementation of the Climate adaptation Mission, under the Horizon 2020 European Green Deal call and under Horizon Europe relevant for adaptation, and that will be coordinated by the soon to be established Mission Implementation Platform. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. The project under this topic will be requested to contribute to this effort. Applicants should acknowledge this request and already account for these obligations in their proposal, making adequate provisions in terms of resources and budget to engage and collaborate with the Mission governance.

HORIZON-MISS-2022-CLIMA-01-05: Boost the sponge function of landscape as a way to improve climate-resilience to water management challenges

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 2.00 and 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Research and Innovation Actions

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

- Best available and improved or new solutions to improve sponge function of soil, ground water and surface water systems are used and/or made available to all regions and communities across EU for replication.
- Solutions for improving climate-resilience to extreme events have been developed, tested and brought closer to the market.
- Regions and communities have been actively engaged and involved in development and testing of a transformative solutions for climate resilience building.

Scope: This topic contributes to the second objective of the Mission on Adaptation to Climate Change (as well as the Mission ‘Restore our Ocean and Waters by 2030’ as well as the Mission ‘A soil deal for Europe’) and corresponds to one of the thematic research areas described in the Climate Adaptation Mission Implementation Plan ¹¹³. It is to support knowledge dissemination amongst regions and communities and to test solutions that help the management of areas (both land-use, soil, ground water and surface water), in particular in facing present and future extreme weather events, through developing integrated approach to increase the sponge functioning of areas by the restoration of natural retention functions of the soil, ground water and small tributaries of surface water systems in river basins, with special attention to the potential of natural and semi-natural habitats restoration and enlargement.

When the natural sponge function of an area is efficient, water falling down as precipitation will have the opportunity to infiltrate the soil, where it is stored and filtered at the same time. It can either percolate to the deeper ground water, slowly released to the surrounding small streams and/or serve as a source for the vegetation at that location. The whole system of soil, water and vegetation (ecosystem) will buffer the release of water during intensive rainfall on one hand and will serve as a source of fresh, clean water in times of drought. Both soil, water and air quality as well as biodiversity will benefit from it. Providing better water and soil management will be beneficial for both rural and urban areas, and many sectors depending on enough clean surface and ground water such as drinking water production, agriculture, forestry, transport, tourism and leisure, etcetera.

Changes in the way land is managed can address interconnected issues like flooding, drought, wildfires, human health, and regional temperature shifts, all aspects related to building climate resilience.

Effectively increasing or restoring the natural water retention function of the landscape, both through improving the way soil, ground water, surface water and ecosystems are managed, will generate many ecosystem services for a relative low price, bringing benefits to a whole array of different functions. This adding up of services by restoration of the natural retention function of the landscape, brings a benefit which is (much) larger than the costs of restoration in combination with the cost of coping with the present and future damages caused by extreme climate events such as extreme droughts and intensive rainfall, either long term or through cloud-bursts. Investing in restoration of the sponge function of the landscape can save farmers, municipalities, insurers, and tax payers substantial amounts of money, while reducing risk, and providing multiple benefits (such as flood and drought resilience, reduced erosion, increase biodiversity, moderation of local temperatures, while also improving availability of clean water and improve local economies).

The proposals should address all the following aspects:

- To collect the best available knowledge, including local knowledge, and where appropriate ‘traditional knowledge’, and define the best approaches on possible ways, positive impacts and challenges, strengths and weaknesses, in improving the sponge functioning of landscape

¹¹³ https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en

as a way to improve its ability to contribute to water management, in particular in facing extreme events. The review of existing knowledge should also include experiences matured in different parts of Europe and from Horizon 2020 projects.

- To undertake research and test innovative solutions using the activities ongoing in the regions and communities as case studies, to better understand their success factors and to explore and experiment new innovative ways of improving water retention capacity through nature-based solutions, in comparison to alternative solutions, such as those including gray infrastructure. Opportunities offered by passive management of land as low cost approach should be also considered and included.
- To ensure synergies between the Adaptation Mission and other relevant programmes and initiatives, in supporting building climate resilience to cope with extreme weather events at local, regional, national, and European level and to share relevant knowledge and experience developed in the Mission more broadly.

The European Commission intends to establish a network and coordination activities amongst all the projects funded for the implementation of the Climate adaptation Mission, under the Horizon 2020 European Green Deal call and under Horizon Europe relevant for adaptation, and that will be coordinated by the soon to be established Mission Implementation Platform. Projects funded under this topic are strongly encouraged to participate in networking and joint activities with other projects funded under other topics in the Mission Climate Adaptation as well as in other Missions, namely the Soil Mission and Ocean and Waters Mission, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. To this extent, proposals should provide for dedicated activities and earmark appropriate resources.

HORIZON-MISS-2022-CLIMA-01-06: Testing and demonstrating transformative solutions on climate resilience, mainstreaming nature based solutions in the systemic transformation

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 12.00 and 20.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 88.32 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation

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	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).
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 6 to 7 by the end of the project – see General Annex B.
<i>Procedure</i>	The procedure is described in General Annex F. The following exceptions apply: Seals of Excellence will be awarded to applications exceeding all of the evaluation thresholds set out in this work programme, but cannot be funded due to lack of budget available to the call.
<i>Eligibility and admissibility conditions</i>	The conditions are described in General Annex B. In addition to the standard eligibility conditions, proposals must include demonstration activities to be carried out in 5 different regions located in 3 different MS or associated countries, involving and including in the consortium partners from these three countries. At least 1 of the proposed demonstrations must take place in a region eligible for Cohesion funds. ¹¹⁴

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

- regions and communities have been involved in development and testing of a whole range of transformative solutions
- climate resilience solutions have been developed, tested and brought closer to the market

Scope: This topic relates to the Mission’s second objective, aiming to mobilise at least 150 regions in testing the solutions most locally needed to build climate resilience.

The proposal should **develop and test innovative solutions**, combining technological and social innovation, leading to an increase of the resilience and adaptation capacity to climate change in the involved regions and communities, assuring that nature based solutions are explored as priority and at the very heart of the development whenever possible.

In line with the Mission Implementation Plan and also with the new EU Climate Adaptation Strategy, implementing nature-based solutions on a larger scale would increase climate resilience. Blue-green (as opposed to grey) infrastructures represent multipurpose, “no regret” solutions, which simultaneously provide environmental, social and economic benefits and help build climate resilience. The Strategy also underlines that to improve their uptake, their benefits need to be better quantified and communicated. Their essential role for sustaining

¹¹⁴ Territories eligible for Cohesion funds are defined under the Cohesion policy: https://ec.europa.eu/regional_policy/sources/graph/poster2021/eu27.pdf?

healthy water, oceans and soils was recognised, together with their potential to reduce costs, provide climate-resilient services, and improve compliance with Water Framework Directive requirement for good ecological status, if they were to play a bigger role in land-use management and infrastructure planning.

As climate impacts, adaptive capacities and disaster risk reduction capabilities differ greatly across regions, the proposed scientific development and innovation should address specific needs identified **at regional and local scale** with tailor-made responses and measures, fully acknowledging place-based governance, socio-economic and identity characteristics and other place-based data.

In line with the Mission objective to **build systemic climate resilience**, the proposal should address the **multi-risks locally identified** as climate vulnerability, addressing in a systemic approach one or more of the systems identified as key for climate resilience building in the Mission Implementation Plan Mission. For example, the proposed systemic solution could include one or more of the following:

- restoration of ecosystems and the establishment of ecological corridors, taking into account also the benefits and trade-offs for biodiversity, in particular in relation to soil and coastal erosion;
- solutions to better manage water scarcity and mitigate the impacts of droughts or to better manage water flooding, such as greening of infrastructures, tree planting, increasing of permeable green surfaces, or river deculverting in cities, peatland, wetland and floodplain restoration;
- solutions for a more climate resilient agriculture, fisheries, aquaculture and forestry as well as climate resilient food systems, such as culture rotation, silvo-pasture and other agroecology approaches in farmland, in particular in relation to droughts and water multi-usage and management;
- solutions for building and/or managing new critical infrastructure and/or upgrading existing ones through green/blue/hybrid infrastructure, in particular in relation to climate-proofing it towards extreme events;
- climate-proofing the development of incentive schemes fostering efficient use and allocation of water and solutions to reduce the vulnerability to water-related risks;
- regeneration of public spaces to create climate resilient neighbourhoods, in particular in relation to heat-waves and flooding events and their potential risks for human health and well-being;
- inclusion of digital solutions and services to better predict, monitor and report on climate events, in particular towards vulnerable and marginalised populations;

- economic analysis and business models to support decisions making, in particular in relation on investments balance between reducing risks through building climate resilience and improving climate risk preparedness and climate emergency management.

Under the Mission approach, collaborations to develop and test effective solutions between regions/communities facing similar challenges are highly encouraged. To this purpose, the proposals **should include at least 5 regions/communities**, collaborating in addressing the common climate change related to the challenges identified, creating a common place to test and deploy the most suitable solutions and to exchange best practices. These 5 minimum regions must be **located in at least 3 different EU Member States or Horizon Europe associated countries**, with at least 1 of the proposed demonstrations taking place in region covered under the EU Cohesion Programme¹¹⁵.

The proposals should clearly identify the biogeographical area, as defined by the EEA¹¹⁶, for which the proposed solution is relevant and should explore possible **reapplication to other regions**, starting from those located in the same biogeographical areas. To support a large impact, the proposed solutions should be widely re-applicable. To this purpose, identification and inclusion of **at least three “replicating” regions/communities**, interested in reapplying the lessons learnt in their territories is strongly encouraged, including the consortium providing support for the technical exchanges and the knowledge uptake in the “replicating” regions.

In addition to the local/regional authorities owning the climate challenge, the consortium may include other type of partners, such as private or public research organisations and enterprises, to ensure that all needed capabilities are available to develop and implement real life actions.

In line with the overall principles of the Mission, proposals should take in full consideration the local dimension of climate change and climate adaptation strategies, clarify how they would ensure a meaningful engagement with local communities as well as stakeholders to ensure, among others, the mobilization of local knowledge, and outline how they would contribute to achieving a just transition to climate resilience.

Proposals should build (when relevant) upon previous developed or existing knowledge and adaptation solutions, designed and developed from previous projects, including from beyond EU, addressing climate change adaptation and funded by European and National programmes, in particular the European Union Framework programmes for Research and Innovation (such as Horizon 2020 and Horizon Europe under their different pillars and clusters), as well as the LIFE programme. Moreover, proposals should look into opportunities to scale up the solutions demonstrated and to foster their broad deployment across in Europe through the LIFE programme, and its integrated projects in particular, and through the ERDF programmes, also leveraging the opportunities provided by the Seal of Excellence labeling.

¹¹⁵ [Cohesion Policy 2021-2027 - Regional Policy - European Commission\(europa.eu\)](https://ec.europa.eu/eip/eip-cohesion-policy-2021-2027-regional-policy/)

¹¹⁶ As defined by EEA dataset which contains the official delineations used in the Habitats Directive (92/43/EEC) and for the EMERALD Network set up under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

Proposals should include a mechanism and the resources to establish operational links with the Climate-ADAPT platform (run by the European Environment Agency (EEA) together with DG CLIMA) that will act as a central element for the monitoring, support and visualisation of the Mission progress in European Regions. To this purpose, projects will feed their results to the Climate-ADAPT and EEA assessments.

Projects funded under this topic are strongly encouraged to participate in **networking and joint activities** with other projects funded under other topics in the Mission Climate Adaptation as well as in other relevant Missions, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. To this extent, proposals should provide for dedicated activities and earmark appropriate resources.

The European Commission intends to establish a network and coordination activities amongst all the projects funded for the implementation of the Climate adaptation Mission, under the Horizon 2020 European Green Deal call and under Horizon Europe, and that will be coordinated by the soon to be established Mission Implementation Platform. The projects under this topic will be requested to contribute to this effort. Applicants should acknowledge this request and already account for these obligations in their proposal, making adequate provisions in terms of resources and budget to engage and collaborate with the Mission governance.

To ensure a **balanced portfolio** covering the different climate risks as identified in the Mission Implementation Plan and to maximize the footprint across all the different biogeographical areas¹¹⁷, grants will be awarded to applications not only in order of ranking but selecting the highest ranked proposals for each biogeographical area, provided that the applications attain all thresholds. To this purpose, the biogeographical area focus of each of proposal should also be specified in the free keywords section of the proposal.

Other Actions not subject to calls for proposals

Procurement actions

1. Building the Implementation Platform for the Adaptation to Climate Change Mission

Under this public procurement, the following services are expected to be provided:

- Well-coordinated support to the general operation and activities of the Climate Adaptation Mission, as valid service to the European Commission in the broad range of activities involved with the implementation of the Mission and as facilitator and provider of horizontal services for all involved actors and regions along all the actions they will undertake in relation to their climate resilience building;

¹¹⁷ As defined by: <https://www.eea.europa.eu/data-and-maps/figures/biogeographical-regions-in-europe-2>

- A structured dialogue platform, bringing together all relevant actors and assuring that the actions pre-dating the Mission launch¹¹⁸ will be embedded in the Mission work plan as aligned towards a common objective, in order to create a common basis on which the foreseen consolidation phase of the Mission will build in the future;
- Monitoring and evaluation assistance to the Commission, including the establishment of monitoring tools and KPI for the Mission and the monitoring and reporting on progress made, and for preparing the mid-term evaluation of the Mission. This monitoring and evaluation will also support the regions in managing their portfolio of innovations, with the evaluation of their successfulness and possible adjustments and broad sharing of the knowledge generated.
- Assistance to the Commission with the overall communication on the Mission, helping to identify and create synergies and add value to communication, dissemination and exploitation activities of individual projects of the Mission's portfolio, and boost scientific, societal and economic impacts.
- Facilitation of exchanges with equivalent bodies established for the other Missions, in particular for the other Green Deal Missions, to exploit synergies.
- A supporting system for the Climate Adaptation Mission which will facilitate its building phase and which would provide the basis for the supporting system for the full deployment of the Mission after potential review of fit for purpose and appropriate adjustments.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: 1Q 2022

Indicative budget: EUR 10.00 million from the 2021 budget¹¹⁹

2. Climate Adaptation Stakeholders Forum

The following services are expected to be provided:

- organisation of the first Mission Forum, which will allow for exchange of views on the direction of the Mission from a broad range of relevant actors, to receive input from the regions, including on intentions by regions to participate in the Mission, and to make links between Member States' intentions on Climate Adaptation measures and the use of EU funds under shared management,

¹¹⁸ Horizon 2020 projects, in particular the Mission-related projects selected for funding under the Green Deal H2020 call

¹¹⁹ Of which EUR 2.88 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.98 million from the 'Digital, Industry and Space' budget, EUR 0.24 million from the 'Civil Security for Society' budget, EUR 5.78 million from the 'Climate, Energy and Mobility' budget, EUR 0.12 million from the 'Culture, creativity and inclusive society' budget.

- a Climate Resilience Dialogue which will bring together various stakeholders in the insurance sector to develop a common set of recommendations and voluntary commitments to measure, monitor and promote natural disaster insurance penetration and promote resilience-building national insurance regimes.

The service will be procured under an existing Framework Contract.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: 1Q 2022

Indicative budget: EUR 0.30 million from the 2021 budget¹²⁰

Service Level Agreement

1. European Environmental Agency (EEA) support to the Mission in developing the monitoring and tracking system and visualisation of the progress in the resilience building, expanding ClimateADAPT

This action aims at designing and implementing a support system (as a new feature of Climate- ADAPT) tailored to the specific needs of the Mission with the following objectives:

- To become a key source of knowledge on climate risks and transformative adaptation options for the regions
- To serve as a policy support facility providing guidance and tools for the participating regions (e.g. NUTS2) and local authorities (communities) and creating a forum for the sharing of knowledge and experience.
- To support the monitoring and the evaluation of achievement of the missions' objectives
- To communicate the mission progress enabling the visualisation of the impacts on the resilience of the participating regions.
- To harvest/leverage former Service Level Agreement with the EEA in the domain of unlocking data and knowledge for climate adaptation

The action should be implemented through a Service Level Agreement with the EEA, as foreseen under Article 59.2 of the Financial Regulation.

Type of Action: Service Level Agreement

Indicative timetable: Q1 2022

¹²⁰ Of which EUR 0.09 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.03 million from the 'Digital, Industry and Space' budget, EUR 0.01 million from the 'Civil Security for Society' budget, EUR 0.17 million from the 'Climate, Energy and Mobility' budget, EUR 0.00 million from the 'Culture, creativity and inclusive society' budget.

Indicative budget: EUR 2.08 million from the 2021 budget¹²¹

2. Top up Service Level agreement with the EEA to support the building up and hosting of the Mission Platform website as integrated part of Climate-Adapt

Extend the scope of the Service Level Agreement with the European Environmental Agency (EEA) in support to the Mission already included in WP2021.

The top up will in particular cover the development in Climate ADAPT of the necessary IT infrastructure to support the Mission Implementation Platform in its endeavour to coordinate the Mission activities and to monitor and track the Mission progress.

The IT infrastructure will be hosted by Climate ADAPT and will provide the basis for the Mission Implementation Platform to develop its services, in particular intended to monitor the Mission progress and support the regions in managing their portfolio of innovations.

The role of the EEA will be limited to host the IT development, while the Mission Implementation Platform will be responsible to provide the resources to monitor the Mission progress, animate the Mission community, to interact with the regions and communities and support them with the evaluation of their successfulness and possible adjustments, to share of the knowledge generated.

Type of Action: Service Level Agreement

Indicative budget: EUR 0.88 million from the 2022 budget¹²²

¹²¹ Of which EUR 0.60 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.20 million from the 'Digital, Industry and Space' budget, EUR 1.20 million from the 'Climate, Energy and Mobility' budget, EUR 0.05 million from the 'Civil Security for Society' budget, EUR 0.03 million from the 'Culture, creativity and inclusive society' budget.

¹²² Of which EUR 0.21 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.11 million from the 'Digital, Industry and Space' budget, EUR 0.52 million from the 'Climate, Energy and Mobility' budget, EUR 0.02 million from the 'Civil Security for Society' budget, EUR 0.02 million from the 'Culture, creativity and inclusive society' budget.

Mission: Cancer

The goal of the mission on cancer is to improve the lives of more than 3 million people by 2030, through prevention, cure and for those affected by cancer including their families, to live longer and better. The objectives include: Understand; Prevent what is preventable; Optimise diagnostics and treatment; Support quality of life; Ensure equitable access in all aforementioned areas. The Mission on Cancer will address all cancers including poorly understood cancers¹²³ in men and women, cancers in children, adolescents/young adults and the elderly, cancers in socio-economically vulnerable people, living in either cities, rural or remote areas, across all Member States and Associated countries.

This would be through a health-in-all policies approach¹²⁴; through infrastructure support, regional, social and citizen community development; through investments, support and commitments from public and private sources, including from Member States, Associated countries and industry; through cooperation with third countries; and through synergies with other existing EU programmes including EU4HEALTH, EURATOM, Digital Europe, Erasmus+, EU Strategic Framework on Health and Safety at Work 2021-2027 and others and initiatives related to cancer.

The Mission on Cancer is coherent with and will be an essential and integral component of the Europe's Beating Cancer Plan¹²⁵. It will provide directions and objectives for research and innovation and effective Commission policy to alleviate the burden of cancer.

It also relates to the European Green Deal, including the Farm to Fork strategy¹²⁶. The mission proposes research and policy directions and objectives to identify effective strategies for the development and implementation of cancer prevention, including on environmental factors (e.g. exposure to workplace carcinogens, air pollution, unhealthy diet, nutrition and low physical activity).

Furthermore, it is also in line with the industrial¹²⁷ and digitalisation strategy¹²⁸. The mission proposes a further upscaling and digitalisation of services, innovation in diagnostics and interventions, and developing living labs, contributing to the positive impact of efforts by industry and SMEs on the health of citizens. Envisaged opportunities are in the fields of: cancer biomarkers; cloud computing and digital applications, smart apps/sensors. The mission also supports the integration of AI, machine learning and deep learning approaches to

¹²³ Includes refractory cancers or cancer subtypes, at any stage of the disease in any age group and part of society with a 5-year overall survival that is less than 50% from time of diagnosis.

¹²⁴ Health in All Policies is an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies, and avoids harmful health impacts in order to improve population health and health equity.
https://www.who.int/social_determinants/publications/health-policies-manual/key-messages-en.pdf

¹²⁵ <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12154-Europe-s-Beating-Cancer-Plan>

¹²⁶ https://ec.europa.eu/food/farm2fork_en

¹²⁷ https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-industrial-strategy_en

¹²⁸ https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age_en

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facilitate a better understanding of cancer, to improve prevention screening and early detection, diagnosis, clinical decision-making, administration of combinational therapies, and clinical management of patients living with and after cancer.

Calls for proposals and procurement actions under this mission should contribute to setting out a credible pathway for implementing the Mission on Cancer, thereby contributing to the mission objectives.

The implementation plan specifies the goal and objectives as well as implementation details of the mission “Cancer”¹²⁹.

In addition to the calls described below, the Commission envisages several actions that will be included in a future work programme update¹³⁰: In the field of prevention the Commission envisages an action on implementation research on cancer prevention. In the area of diagnosis and treatment, the Commission envisages the implementation of clinical trials on treatments, using personalised medicine approaches and a focus on improving quality of life. The Commission further envisages actions to support the creation of a Network of Comprehensive Cancer Infrastructures (CCIs) with a focus on integrating the research dimension. In the field of quality of life, the Commission envisages to support the setting up the European Cancer Patient Digital Centre and to further expand on actions addressing unmet needs of cancer patients and survivors. Furthermore, actions are foreseen to create National Cancer related Mission Hubs, to support the monitoring of the Mission’s implementation, citizens engagement and communication.

The following call(s) in this work programme contribute to this mission:

Call	Budgets (EUR million)		Deadline(s)
	2021	2022	
HORIZON-MISS-2021-UNCAN-01	3.00		20 Oct 2021
HORIZON-MISS-2021-CANCER-02	125.65		26 Apr 2022
HORIZON-MISS-2022-CANCER-01		126.00	07 Sep 2022
Overall indicative budget	128.65	126.00	

¹²⁹

https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/cancer_implementation_plan_for_publication_final_v2.pdf

¹³⁰

The listed areas for potential actions are tentative and non-binding.

Call - Preparing UNCAN.eu, a European initiative to understand cancer

HORIZON-MISS-2021-UNCAN-01

Conditions for the Call

Indicative budget(s)¹³¹

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ¹³²	Number of projects expected to be funded
		2021		
Opening: 22 Jun 2021 Deadline(s): 20 Oct 2021				
HORIZON-MISS-2021-UNCAN-01-01	CSA	3.00 ¹³³	Around 3.00	1
Overall indicative budget		3.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.

¹³¹ 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 years 2021 and 2022.

¹³² Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

¹³³ Of which EUR 3.00 million from the 'Health' budget.

<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-UNCAN-01-01: Preparing UNCAN.eu, a European initiative to understand cancer

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions

Expected Outcome: Project results will contribute to the following expected outcome: a blueprint for the establishment of UNCAN.eu.

This entails that:

- Based on an agreed strategic research and innovation agenda, academic and clinical research centres, innovators¹³⁴, Member States and Associated countries including national and regional funding agencies, policy makers, private investors, public and social sector organisations, citizen and patient advocacy organisations, and national/regional health systems, adopt the operational concept for UNCAN.eu described below, and are willing to cooperate and invest both financially and with other resources (in kind, data, knowledge);
- Clear answers on the European-added value, organizational, logistical, financial, and cultural feasibility, utility and sustainability of UNCAN.eu are given.

Scope: Overall and despite important progress, understanding of cancer remains incomplete, for both common and rare cancers. This requires a new level of investment in innovative research, including high-potential/high-risk projects. Therefore, a Mission on Cancer proposes a Europe-wide platform, UNCAN.eu, utilising existing, relevant research infrastructures and

¹³⁴ Innovators turn research results into new and better services and products in order to remain competitive in the global marketplace and improve the quality of life of Europe's citizens.

investing in the development of models and technologies interrogating the interactions of poorly understood cancers¹³⁵ and their host.

A fully-fledged UNCAN.eu initiative will:

- Underpin all future Mission on Cancer priorities that require a better understanding of poorly understood cancers;
- Agree on a strategic research and innovation agenda between afore-mentioned relevant stakeholders
- Integrate innovative models and technologies with longitudinal patient data (e.g. medical images), samples and biomarkers to deliver concrete benefits for people at risk of cancer, living with and after cancer;
- Allow for data interoperability and re-utilisation, while guaranteeing full protection for the data subjects and applying FAIR data principles.

A comprehensive understanding of the organizational, logistic, cultural and financial feasibility, utility and sustainability would be necessary before embarking on such an endeavour.

This coordination and support action aims to develop the operational concept for such an initiative.

The proposal should address:

- Integration with ESFRI European Research Infrastructures, European Reference Networks, as well as other international cancer-centred research and data initiatives (e.g. 1+Million Genomes¹³⁶, SPECTA¹³⁷, etc.), as well as data exchange with national cancer data ecosystems;
- Sustainable and interoperable data platforms facilitating data access in compliance with data protection legislation and ethical principles, which will be developed in the framework of a future Health Research and Innovation Cloud, a thematic cloud under the European Open Science Cloud (EOSC)¹³⁸, which will also address the data requirements of the European Health Data Space (EHDS)¹³⁹ and be interoperable with it;
- Integration with other platforms proposed under the Mission on Cancer and the Europe's Beating Cancer Plan, such as a network of comprehensive cancer infrastructures and a virtual European cancer patient digital centre;

¹³⁵ Both common and rare cancers, or cancer subtypes, at all stages of cancer, any age or part of society.

¹³⁶ <https://ec.europa.eu/digital-single-market/en/european-1-million-genomes-initiative>

¹³⁷ <https://www.eortc.org/specta/>

¹³⁸ https://ec.europa.eu/info/research-and-innovation/strategy/goals-research-and-innovation-policy/open-science/eosc_en

¹³⁹ https://ec.europa.eu/health/ehealth/dataspace_en

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- Mechanisms for determining clinical priorities and development of new models and technologies to interrogate the interactions of cancers and their host;
- Mechanisms for regular training on operating the UNCAN.eu platform as well as data management to all data holders and users;
- Potential links with Horizon Europe health cluster partnerships, in particular: the Innovative Health Initiative; the partnership on Personalised Medicine; the Transformation of Health and Care Systems partnership as well as the partnership on Rare Diseases and the Partnership for the Assessment of Risk from Chemicals.
- Providing a mechanism for regular consultation with EU regions, Member States and Associated countries, who should be engaged from the early steps of development;
- Potential links with EU4Health actions relevant for cancer;
- Links to federated data spaces of genomic data and medical images under the Digital Europe programme;
- Equitable access. Broad representation, in particular of less-developed regions or regions from countries striving to boost their research and innovation potential, is highly encouraged;
- Engagement with citizen and patient advocacy organisations;
- Utility, feasibility, sustainability;
- Due consideration to newly EU-funded initiatives such as HealthyCloud, EOSC-Life and the EHDS Joint Action. Links with topic HORIZON-INFRA-EOSC-2021-01-07; objectives are encouraged as well as with topic HORIZON-INFRA-SERV-2021-01-02 objectives.

Call - Research and Innovation actions supporting the implementation of the Mission on Cancer

HORIZON-MISS-2021-CANCER-02

Conditions for the Call

Indicative budget(s)¹⁴⁰

Topics	Type	Budgets	Expected EU	Number
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¹⁴⁰ 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 years 2021 and 2022.

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	of Action	(EUR million)	contribution per project (EUR million) ¹⁴¹	of projects expected to be funded
		2021		
Opening: 22 Dec 2021 Deadline(s): 26 Apr 2022				
HORIZON-MISS-2021-CANCER-02-01	RIA	60.00 ¹⁴²	4.00 to 15.00	10
HORIZON-MISS-2021-CANCER-02-02	RIA	11.00 ¹⁴³	Around 11.00	1
HORIZON-MISS-2021-CANCER-02-03	RIA	54.65 ¹⁴⁴	4.00 to 15.00	6
Overall indicative budget		125.65		

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

Proposals are invited against the following topic(s):

¹⁴¹ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

¹⁴² Of which EUR 15.19 million from the 'Digital, Industry and Space' budget and EUR 44.10 million from the 'Health' budget and EUR 0.71 million from the 'Culture, creativity and inclusive society' budget.

¹⁴³ Of which EUR 2.79 million from the 'Digital, Industry and Space' budget and EUR 8.08 million from the 'Health' budget and EUR 0.13 million from the 'Culture, creativity and inclusive society' budget.

¹⁴⁴ Of which EUR 13.84 million from the 'Digital, Industry and Space' budget and EUR 40.17 million from the 'Health' budget and EUR 0.65 million from the 'Culture, creativity and inclusive society' budget.

HORIZON-MISS-2021-CANCER-02-01: Develop new methods and technologies for cancer screening and early detection

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 4.00 and 15.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 60.00 million.
<i>Type of Action</i>	Research and Innovation Actions

Expected Outcome: Prevention is the most cost-effective long-term cancer control strategy. In EU-27 and Associated countries, population-based screening programmes exist for three types of cancer (breast, cervical and colorectal cancer), which are often not risk-based. Screening and early detection should become faster, more precise, accessible and affordable. This requires new, sound methods and technologies, including data analytics tools and computing capacities, as well as a robust communication strategy.

The COVID-19 pandemic with its detrimental impact on cancer screening and early detection has demonstrated the need for new and improved screening and early detection solutions.

Proposals under this topic should aim for delivering results that are directed at and contributing to all of the following expected outcomes

- Healthy citizens and cancer patients will benefit from faster, earlier, more precise, personalised, accessible and affordable screening and early detection of cancer.
- Health care professionals will be able to deliver earlier, faster, more precise screening and early detection of cancer.
- Health policy makers will have the evidence to review population-based screening programmes and screening and early detection methodologies in everyday medical practice, and to include new, evidence-based screening and early detection methods, technologies and solutions.

Scope: Research is needed to develop and validate non-invasive, or minimally invasive cancer screening and detection methodologies for everyday medical practice and population-based screening programmes¹⁴⁵, including enhanced participation of the target population. These programmes should become faster, more precise and personalised, affordable and accessible.

Proposals should address all of the following:

¹⁴⁵ Refers to secondary prevention

- Based on weaknesses, gaps and possibilities for further development of existing screening and early detection methods and technologies (including those used in population-based screening programmes), develop and validate non-invasive (or minimally-invasive) cancer screening and detection methodologies. This includes ‘integrated diagnostics’¹⁴⁶ based on, for example, imaging, tissue, fluid or exhaled breath gas biomarkers, and agile screening methodologies including digital technologies (such as self-sampling, mobile screening units, digital apps or smart wearables, sensors, telemedicine and remote monitoring technologies combined with sophisticated data analytics tools), duly considering digital and health literacy of people.
- Proposals should assess the potential uptake of these methods and technologies in national health systems, clearly identify the target population and consider implementation needs (including health workforce skills). Applicants should also consider aspects of effectiveness, affordability and accessibility when proposing solutions, particularly to enhance participation of the target population.
- Proposals should consider the use of living labs or other implementation research models that use open knowledge and (social) innovation systems and support end-user engagement.
- The influence of age and early-life factors and determinants; genetic risk; socio-economic status; behavioural, including lifestyle risk factors; environmental factors; as well as social, cultural, sex and gender aspects, including inequalities, should be taken into account across all aspects mentioned above. In addition, differences within and between countries and regions should also be reflected.

Expected stage at project start: Technological Readiness Level 4 and above.

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.

Due consideration should also be given to other relevant EU-funded initiatives¹⁴⁷. Successful applicants will be asked to liaise with these different initiatives where applicable¹⁴⁸, with the Commission acting as a facilitator.

The funded actions should build upon resources made available by the Knowledge Centre on Cancer¹⁴⁹, and complement actions under the future Innovative Health Initiative, EIT Health

¹⁴⁶ Combines information from radiology, imaging, pathology, genetics, genomics, phenotyping, laboratory testing, information technology, artificial intelligence, machine learning, etc.

¹⁴⁷ Such as HealthyCloud, EOSC-Life and the European Health Data Space (EHDS) Joint Action. Topics HORIZON-INFRA-EOSC-2021-01-06 (FAIR and open data sharing in support of cancer research), HORIZON-INFRA-SERV-2021-01-01 (Research infrastructures services to support research addressing cancer), HORIZON-HLTH-2021-DISEASE-04-01 (Improved supportive, palliative, survivorship and end-of-life care of cancer patients), HORIZON-HLTH-2021-CARE-05-02 (Data-driven decision-support tools for better health care delivery and policy-making with a focus on cancer).

¹⁴⁸ Applicants are not expected to contact these initiatives before the submission of proposals.

Knowledge Innovation Community initiatives¹⁵⁰, and the Digital Europe programme (Cancer Imaging Initiative, Genomics)¹⁵¹.

Furthermore, all projects funded under this topic are strongly encouraged to participate in networking and joint activities with other ongoing projects under the mission on cancer and other cancer relevant projects, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. This could also involve networking and joint activities with projects funded under other clusters and pillars of Horizon Europe, or other EU programmes, as appropriate. Of particular importance in this context is topic HORIZON-MISS-2021-COOR-01-01, “Coordination of complementary actions for missions”.

The Commission may facilitate Mission-specific coordination through future actions. Therefore, proposals should include a budget for the attendance to regular joint meetings and may consider covering the costs of any other potential joint activities without the prerequisite to detail concrete joint activities at this stage. The details of these joint activities will be defined during the grant agreement preparation phase and project duration. In this regard, the Commission will take on the role of facilitator for networking and exchanges, including with relevant initiatives and stakeholders, if appropriate.

HORIZON-MISS-2021-CANCER-02-02: Develop and validate a set of quality of life and patient preference measures for cancer patients and survivors

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 11.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 11.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Beneficiaries will be subject to the additional access rights: The selected beneficiaries must provide the results from the survey, including validation of the metrics, within two years from the start of the project for the purpose of developing EU policies and

¹⁴⁹ Especially through the ‘European Guidelines and Quality Assurance Schemes for Breast, Colorectal and Cervical Cancer Screening and Diagnosis’, and the ‘European Cancer Information System (ECIS)’, see https://knowledge4policy.ec.europa.eu/cancer_en

¹⁵⁰ <https://eithealth.eu/who-we-are/>

¹⁵¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R0694&qid=1623079930214>

	programmes.
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Expected Outcome: Cancer patients and survivors have specific and currently largely unmet needs. These require deeper insights into quality of life aspects, patient preferences and unmet needs so that health and care systems can better address them. This will improve patients' and survivors' quality of life and ensure that they can achieve personal and professional goals, including return to work if they wish so, while respecting individual, social and cultural rights and values. New metrics, self-reported evidence from the perspective of those who are affected, and an expanded high-quality data collection and analysis, using appropriate digital tools, are needed to adequately capture quality of life aspects of cancer patients and survivors. This should serve to orient clinical practice as well as health, social care, and employment policies with the goal of delivering innovation and improving the quality of life of cancer patients, survivors and their families to the highest possible levels, and facilitating their return to work and active participation in society.

Proposals under this topic should aim for delivering results that are directed and contributing to all of the following expected outcomes

- Cancer patients, survivors and caregivers will benefit from enhanced quality of life, more effective and less burdensome treatments with better supportive care and counselling approaches.
- Health care professionals, supportive workers, counsellors and industry will be better aware of the (unmet) needs, expectations and preferences of cancer patients, survivors and their relatives and be compelled to address them.
- Regulators and institutions will have a set of metrics, which they can include in decision making about risks and benefits of new health interventions.
- Health Policy Makers will have a set of metrics at their disposal, which they can include in their health information and performance measurement systems.
- Labour market and social protection policy makers will benefit from additional evidence to consider in the design of labour market and social protection policies that are facilitating return to work and active participation in society.

Scope: The long-term goal of the Mission on Cancer is to support the development of a framework of newly defined, harmonised and systematic surveys, as well as to collect new and update existing quality of life data and registries information, using appropriate digital tools. These surveys should be launched regularly across all countries and be reviewed with researchers, care providers, health insurance companies, industry as well as policy makers so that more timely, supportive and affordable care can be provided and relevant policy measures can be taken.

Proposals should address all of the following:

- Conduct analyses of existing quality of life data from studies, surveys and registries together with patients and with a particular focus on patients' needs, including return to work. These analyses serve to identify problems, fill gaps and validate sets of minimal quality of life measurement tools and approaches for different types of cancer.
- Set up collaborative approaches with patients, communities and multidisciplinary research teams (for example in the form of living labs, making use of citizen science, social innovation or other participatory research methods). Within this co-design process, quality of life measurement tools and approaches should be developed to capture key elements of quality of life from the perspective of those affected by cancer, which are not captured (adequately) with established metrics.
- These metrics should cover subjective perceptions of the positive and negative aspects of cancer patients' symptoms, including physical, mental, emotional, social, cognitive functions, disease symptoms and treatment side effects as well as needs for palliative care.
- Prepare and conduct a pilot of newly defined, harmonised and systematic quality of life surveys across the EU-27 and Associated countries, reflecting both its diversity (social, cultural, geographic, demographic, health and social protection systems) and unique differences in incidence and mortality of cancer indications. The surveys should gather data using established quality of life metrics and serve to validate the newly developed metrics focussing on cancer, making use of digital tools for data gathering and analysis where relevant.
- These surveys should form the basis for a comprehensive comparison of the quality of life of cancer patients and survivors across and within countries, as well as between different groups, and prepare the ground for future regular, more extensive high-quality data collection.
- The influence of age and early-life factors and determinants; genetic risk, socio-economic status; environmental factors; behavioural, including lifestyle risk factors; as well as social, cultural, sex and gender aspects including inequalities (e.g. access to care), should be taken into account across all aspects mentioned above.
- The most promising quality of life and preference measures and metrics should be validated.

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.

Due consideration should also be given to other relevant EU-funded initiatives¹⁵². Successful applicants will be asked to liaise with these different initiatives where applicable, with the Commission acting as a facilitator¹⁵³.

The funded actions should build upon resources made available by the Knowledge Centre on Cancer¹⁵⁴, and complement actions under the Europe's Beating Cancer Plan¹⁵⁵, and possibly Horizon Europe Partnerships¹⁵⁶.

All projects funded under this topic are strongly encouraged to participate in networking and joint activities with other ongoing projects under the mission on cancer and other cancer relevant projects, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. This could also involve networking and joint activities with projects funded under other clusters and pillars of Horizon Europe, or other EU programmes, as appropriate. Of particular importance in this context is topic HORIZON-MISS-2021-COOR-01-01, "Coordination of complementary actions for missions".

The Commission may facilitate Mission-specific coordination through future actions. Therefore, proposals should include a budget for the attendance to regular joint meetings and may consider covering the costs of any other potential joint activities without the prerequisite to detail concrete joint activities at this stage. The details of these joint activities will be defined during the grant agreement preparation phase and project duration.

In this regard, the Commission will take on the role of facilitator for networking and exchanges, including with relevant initiatives and stakeholders, if appropriate.

HORIZON-MISS-2021-CANCER-02-03: Better understanding of the impact of risk factors and health determinants on the development and progression of cancer

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 4.00 and 15.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

¹⁵² Such as HORIZON-HLTH-2021-DISEASE-04-01 (Improved supportive, palliative, survivorship and end-of-life care of cancer patients), HORIZON-HLTH-2021-CARE-05-02 (Data-driven decision-support tools for better health care delivery and policy-making with a focus on cancer).

¹⁵³ Applicants are not expected to contact these initiatives before the submission of proposals.

¹⁵⁴ Especially through the 'European Guidelines and Quality Assurance Schemes for Breast, Colorectal and Cervical Cancer Screening and Diagnosis', and the 'European Cancer Information System (ECIS)', see https://knowledge4policy.ec.europa.eu/cancer_en

¹⁵⁵ Including the planned Cancer Inequalities Registry, see work programme for 2021 for EU4Health Programme at https://ec.europa.eu/health/sites/default/files/funding/docs/wp2021_annex_en.pdf.

¹⁵⁶ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en

<i>Indicative budget</i>	The total indicative budget for the topic is EUR 54.65 million.
<i>Type of Action</i>	Research and Innovation Actions

Expected Outcome: This topic will contribute to the achievement of the mission’s goal through a better understanding of the impact of risk factors¹⁵⁷ and health determinants on the development and progression of cancer (including metastasis). The focus should be on poorly understood¹⁵⁸ cancers and cancer subtypes, including in children and adolescents. To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to all of the following expected outcomes

- Researchers and health professionals will understand which risk factors and determinants spur the development and progression of cancer and how. This forms the basis for the design and optimisation of prevention, screening and early detection interventions for poorly understood cancers and cancer subtypes, including in children and adolescents.
- Researchers and innovators from different disciplines and sectors will support the development of the UNCAN.eu¹⁵⁹ platform by producing, integrating and correlating comprehensive data from multiple sources (ensuring accessibility and re-usability of data, models and tools created).

Health Policy Makers use the improved understanding of risk factors and determinants in the design of cancer-related health policies in the EU-27 and Associated countries and beyond, including for prevention, screening and early detection.

Scope: Despite important progress, overall understanding of cancer remains incomplete, for both common and rare cancers and the growing number of cancer subtypes, including in children and adolescents. This requires a new dimension and level of investment in innovative research, including high-potential, potentially disruptive and high-risk projects. There is a need to better understand which risk factors and determinants affect the development and progression of cancer and how.

Proposals should address all of the following:

- Develop a systematic understanding of cellular processes with a focus on the transition from a healthy state to cancer initiation and progression, at the individual or population level.

¹⁵⁷ Relevant risk factors include both internal and external ones, such as genetic predisposition, those in the environment, at work, because of pollution (chemicals, noise, air, radiation, etc.), lifestyle, diet, physical inactivity, obesity, nutrition, microbiota, infectious agents, etc. At all stages of cancer, across all age and societal groups.

¹⁵⁸ Includes refractory cancers and cancer subtypes, at any stage of the disease in any age group and part of society, with a 5-year overall survival less than 50% from time of diagnosis.

¹⁵⁹ Under the mission work programme a Europe-wide platform, UNCAN.eu, will be established, utilising existing, relevant research infrastructures. The platform should enable integration of innovative models and technologies with longitudinal patient data, samples and biomarkers for identification and translation to patients.

- Demonstrate access to and use of multiple comprehensive databases in and well beyond health research and health domains, such as lifestyle, omics, clinical, indoor and outdoor exposure, environmental, urban areas and sprawl, climate, agricultural crop and land use, geo-positioning, and remote sensing. Proposals should build on longitudinal cohorts, case-control studies, biobanks, registries and many other initiatives¹⁶⁰, and use state-of-the-art digital tools for data analyses and modelling, wherever possible.
- Analyse and integrate existing knowledge and high-quality data from biomedical and clinical studies, using advanced technologies such as computer modelling, AI and machine learning with the objective to identify factors and determinants triggering the transition from the healthy state to the initiation and progression of poorly understood cancers and cancer subtypes, including in children and adolescents.
- The influence of age, including in utero and early-life factors and determinants; environmental factors; genetic and epigenetic risk; socio-economic status; behavioural, including lifestyle risk factors; as well as social, cultural, sex and gender aspects including inequalities, should be taken into account across all aspects mentioned above.
- Due consideration should be given to newly EU-funded initiatives such as the Knowledge Centre on Cancer, HealthyCloud, EOSC-Life, the European Health Data Space (EHDS) Joint Action, 1+ Million Genomes / Beyond One Million Genomes (B1MG), the future Innovative Health Initiative and EIT Health Knowledge Innovation Community initiatives¹⁶¹. Links with topic HORIZON-INFRA-EOSC-2021-01-06 objectives (FAIR and open data sharing in support of cancer research) are encouraged as well as with topic HORIZON-INFRA-SERV-2021-01-01 (Research infrastructures services to support research addressing cancer). Successful applicants will be asked to liaise with these different initiatives where applicable¹⁶², with the Commission acting as a facilitator.
- The funded actions should develop synergies with the Partnership for the Assessment of Risk from Chemicals (PARC), the “Human Biomonitoring 4 EU” initiative (HBM4EU)¹⁶³ and the European Human Exposome Network¹⁶⁴.

All projects funded under this topic are strongly encouraged to participate in networking and joint activities with other ongoing projects under the mission on cancer and other cancer relevant projects, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. This could also involve networking and joint activities with projects funded under other clusters and pillars of Horizon Europe, or other EU programmes, as appropriate. Of particular importance in this

¹⁶⁰ Many retrospective, prospective cohorts, case-control studies and initiatives -in health and well-beyond health- at local, regional, national, European and international level, exist.

¹⁶¹ <https://eithealth.eu/who-we-are/>

¹⁶² Applicants are not expected to contact these initiatives before the submission of proposals.

¹⁶³ <https://www.hbm4eu.eu/>

¹⁶⁴ <https://www.humanexposome.eu/>

context is topic HORIZON-MISS-2021-COOR-01-01, “Coordination of complementary actions for missions”.

The Commission may facilitate Mission-specific coordination through future actions. Therefore, proposals should include a budget for the attendance to regular joint meetings and may consider covering the costs of any other potential joint activities without the prerequisite to detail concrete joint activities at this stage. The details of these joint activities will be defined during the grant agreement preparation phase and project duration. In this regard, the Commission will take on the role of facilitator for networking and exchanges, including with relevant initiatives and stakeholders, if appropriate.

Call - Research and Innovation actions supporting the implementation of the Mission on Cancer

HORIZON-MISS-2022-CANCER-01

Conditions for the Call

Indicative budget(s)¹⁶⁵

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ¹⁶⁶	Number of projects expected to be funded
		2022		
Opening: 24 May 2022 Deadline(s): 07 Sep 2022				
HORIZON-MISS-2022-CANCER-01-01	RIA	50.00 ¹⁶⁷	3.00 to 8.00	10
HORIZON-MISS-2022-CANCER-01-02	CSA	10.00 ¹⁶⁸	Around 10.00	1
HORIZON-MISS-2022-CANCER-01-03	RIA	60.00 ¹⁶⁹	4.00 to 6.00	10

¹⁶⁵ 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 years 2021 and 2022.

¹⁶⁶ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

¹⁶⁷ Of which EUR 9.13 million from the 'Digital, Industry and Space' budget and EUR 39.86 million from the 'Health' budget and EUR 1.01 million from the 'Culture, creativity and inclusive society' budget.

¹⁶⁸ Of which EUR 1.83 million from the 'Digital, Industry and Space' budget and EUR 7.97 million from the 'Health' budget and EUR 0.20 million from the 'Culture, creativity and inclusive society' budget.

¹⁶⁹ Of which EUR 10.95 million from the 'Digital, Industry and Space' budget and EUR 47.83 million from the 'Health' budget and EUR 1.22 million from the 'Culture, creativity and inclusive society' budget.

Horizon Europe - Work Programme 2021-2022
Missions

HORIZON-MISS-2022-CANCER-01-04	CSA	3.00 ¹⁷⁰	Around 3.00	1
HORIZON-MISS-2022-CANCER-01-05	CSA	3.00 ¹⁷¹	Around 3.00	1
Overall indicative budget		126.00		

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

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-CANCER-01-01: Improving and upscaling primary prevention of cancer through implementation research

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 3.00 and 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 50.00 million.

¹⁷⁰ Of which EUR 0.55 million from the 'Digital, Industry and Space' budget and EUR 2.39 million from the 'Health' budget and EUR 0.06 million from the 'Culture, creativity and inclusive society' budget.

¹⁷¹ Of which EUR 0.55 million from the 'Digital, Industry and Space' budget and EUR 2.39 million from the 'Health' budget and EUR 0.06 million from the 'Culture, creativity and inclusive society' budget.

<i>Type of Action</i>	Research and Innovation Actions
<i>Procedure</i>	The procedure is described in General Annex F. The following exceptions apply: In order to ensure a balanced cancer mission project portfolio and achieve the mission's goal, grants will be awarded to applications not only in order of ranking but at least also to two projects within applications that fully address cancer in children, adolescents or young adults (meaning people between birth and the age of 24), provided that the applications attain all thresholds.
<i>Evaluation and award procedure</i>	The evaluation committee will be composed partially by representatives of EU institutions.

Expected Outcome: For an increasing number of cancer indications potential mechanisms and means to prevent the onset of cancer have been identified¹⁷². However, with cancer incidence steadily increasing across all age groups, parts of society, European Member States, Associated Countries and elsewhere¹⁷³, decisive action on primary prevention should be stepped up and made a collective responsibility. Implementing and upscaling of primary cancer-centred prevention programmes would contribute to achieving this goal.

Adoption and efficacy of primary cancer prevention programmes in real-life has been insufficient, due to factors related to local context, such as organisation and digitalisation of healthcare services, resources, cultural, and geographical situation. To appropriately adapt interventions and scale-up to different geographical, economic and cultural settings, proposals should aim at delivering results through implementation research¹⁷⁴, which are directed, tailored towards and contributing to all of the following expected outcomes:

- Citizens will benefit from the outcomes of evidence-based, tailored and affordable primary prevention programmes targeting known cancer risk factors and health determinants, including behavioural factors, that are tailored to the specific needs of local communities and effectively adopted;
- Healthcare professionals and patient organisations will be able to provide evidence-based information targeted at individuals and families on cancer prevention, including through vaccination, improved health literacy, issuing of better guidelines and counselling;

¹⁷² Depending on geographical, economic and cultural settings, ~26-50% cancers are preventable and ~20% cancers can be detected early.

¹⁷³ European Cancer Information System (ECIS), GloboCan (<https://gco.iarc.fr/>)

¹⁷⁴ Implementation research uses scientific methods to investigate and address the various factors that affect the implementation in real-life settings and help evidence-based interventions or policies to be optimally implemented and scaled-up. See also: <https://www.gacd.org/about/what-we-do/implementation-science>.

- Regional and national policymakers and authorities will engage in implementing and scaling-up the most suitable prevention programmes, including possible legislative policies;
- Civil society, charities, foundations, and innovators will seize opportunities to further upscale and innovate primary prevention programmes at local, urban, rural, regional, national or international level.

Scope: Investments are needed to establish, scale-up or improve primary cancer prevention programmes. The barriers that prevent their uptake and effective implementation should be identified and addressed. Also, primary cancer prevention programmes should be tailored to the particular needs of the target populations, taking into account socio-economic, cultural and geographical conditions. Digital tools and datasets may be considered where needed.

Proposals should address all of the following:

- Focus on implementation and upscaling of evidence-based **primary cancer prevention interventions**, at local, regional or national level, addressing known risk or protective factors and determinants¹⁷⁵. Proposals should clearly justify and describe the existing evidence supporting the chosen intervention, including evidence of cost-effectiveness and affordability, across health or other sectors.
- As effective prevention includes behavioural change, due consideration should be given to the factors that facilitate or impede behavioural change.
- Identify and address the bottlenecks and barriers that might influence uptake and implementation of cancer prevention programmes in accessible, affordable and equitable ways, and their impact in a defined public health context.
- Provide evidence and recommendations to inform policy and decision-makers and propose a pathway to integrate the intervention into local, regional or national health systems, policies and practices.
- Applicants are required to co-create with relevant stakeholders, including representatives of citizens, people at risk of cancer, patients, survivors, health practitioners, payers, and policymakers in the design and conduct of research and evaluation of its outcomes. Such partners will be integral to the success and sustainability of the programme and it is essential that they are engaged early in the definition of problems and barriers.
- Proposals should align with commitments or planned commitments at a regional or country level to implement evidence-based interventions. Researchers should collaborate closely with responsible authorities. The latter should provide the interventions and the financial means.

¹⁷⁵ All known risk factors and health determinants, including socio-economic and commercial ones, e.g.: tobacco; alcohol; genetics; bacterial and viral pathogens; chemicals from air, soil, water, and food; physical inactivity; diet and nutrition; gut dysbiosis; behavioural patterns; exposure to ionising radiation, UV, radon; occupational exposure; socio-economic background, education, employment.

- Approaches, methodologies and frameworks used should be specific to implementation science, and based on appropriate outcomes, such as feasibility, acceptability, sustainability, uptake and cost effectiveness.
- The design of the proposed interventions should take the gender dimension and ethics into account, and contribute to reducing health inequalities.
- The organisational and resource requirements (data, digital tools, personnel and financing) necessary for the implementation of the intervention must be described, tracked and evaluated in detail. The research and system-wide scientific monitoring should allow future users (researchers, healthcare providers, policy makers, and the public) to review the step-by-step, partial outcomes of the intervention, thus facilitating a wider adoption of these practices. The appropriate contextual, financial and political-economic analyses should be provided.

Clinical trials and translational research are not within the scope of this topic.

This topic requires the effective contribution of social sciences and humanities (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.

Applicants should demonstrate awareness of relevant projects on implementation research in primary cancer prevention¹⁷⁶. Successful applicants will be asked to liaise with these different initiatives where applicable¹⁷⁷, with the Commission acting as a facilitator. Where applicable, funded actions should make use of resources made available by the Knowledge Centre on Cancer¹⁷⁸.

Furthermore, all projects funded under this topic are strongly encouraged to participate in networking and joint activities with other ongoing projects under the mission on cancer and other cancer relevant projects, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. This could also involve networking and joint activities with projects funded under other clusters and pillars of Horizon Europe, or other EU programmes, as appropriate.

The Commission may facilitate Mission-specific coordination through future actions. Therefore, proposals should include a budget for the attendance to regular joint meetings and may consider covering the costs of any other potential joint activities without the prerequisite to detail concrete joint activities at this stage. The details of these joint activities will be

¹⁷⁶ For example CANCERLESS, CBIG-SCREEN, CHILI, EQUITYCANCER-LA, EU-TOPIA-EAST, PRESCRIP-TEC. See also: <https://www.gacd.org/community/research-network/projects?diseases=cancer&programme-countries=>

¹⁷⁷ Applicants are not expected to contact these initiatives before the submission of proposals.

¹⁷⁸ Especially through the 'European Guidelines and Quality Assurance Schemes for Breast, Colorectal and Cervical Cancer Screening and Diagnosis', and the 'European Cancer Information System (ECIS)', see https://knowledge4policy.ec.europa.eu/cancer_en

defined during the grant agreement preparation phase and project duration. In this regard, the Commission will take on the role of facilitator for networking and exchanges, including with relevant initiatives and stakeholders, if appropriate.

HORIZON-MISS-2022-CANCER-01-02: Strengthening research capacities of Comprehensive Cancer Infrastructures

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 10.00 million.
<i>Type of Action</i>	Coordination and Support Actions

Expected Outcome: The Mission Board of the EU Mission on Cancer has defined Comprehensive Cancer Infrastructures as ‘*national or regional infrastructures that provide resources and services to support, improve and integrate cancer care, research, training of care professionals and education for cancer patients, survivors and families/carers.*’

Today, the level of development of Comprehensive Cancer Infrastructures and their capacities, such as their digital, research and innovation-related capacities, vary considerably across Member States and Associated Countries, leading to inequalities, in particular in terms of research, quality and access to care.

The Horizon Europe Mission on Cancer will complement the set-up across Member States and several Associated Countries of an EU network of Comprehensive Cancer Centres that will be established through the Europe’s Beating Cancer Plan by 2025. The Mission aims to achieve the target of ensuring that 90% of eligible cancer patients have access to Comprehensive Cancer Infrastructures by 2030. In that context, this topic should set up, across Member States and several Associated Countries, a capacity-building programme for countries of the EU network of Comprehensive Cancer Centres to be established through the Europe’s Beating Cancer Plan¹⁷⁹, to support them in improving or developing their existing or future Comprehensive Cancer Infrastructures, focussing on developing their digital, research & innovation-related capacities and their integration with cancer care.

Proposals under this topic should aim at delivering results that are directed at and contributing to all of the following expected outcomes:

¹⁷⁹ In particular, preparatory activities to establish National Comprehensive Cancer Centres and EU Network linking these Centres, preparatory activities to establish an EU Network of Expertise on Cancers and Cancer Conditions, Action on "EU Cancer Treatment Capacity and Capability Mapping" see work programme for 2021 for EU4Health Programme at https://ec.europa.eu/health/system/files/2021-06/wp2021_annex_en_0.pdf

- Research and health policy makers will benefit from support to further develop or set up Comprehensive Cancer Infrastructures, leading to improvement in terms of research and access to care;
- Research and healthcare professionals will benefit from a better integration between research and care;
- Researchers will benefit from innovative infrastructures to perform research and participate in studies;
- Citizens, including patients and their caregivers will have enhanced access to screening, diagnostics and treatments, improved care pathways and more integrated care. Their involvement and participation to clinical trials will be facilitated.

Scope:

Building *inter alia* on the work carried out in several joint actions¹⁸⁰, the work of organisations in the area of accreditation and certification¹⁸¹, the work that will be carried out under the Europe's Beating Cancer Plan¹⁸², as well as existing¹⁸³ and potential future mappings, a capacity-building programme should be set up for Member States and several Associated Countries in the EU network of Comprehensive Cancer Centres, to be established through the Europe's Beating Cancer Plan, in order to help them develop or further improve digital, research & innovation-related capacities of future or existing Comprehensive Cancer Infrastructures.

Proposals should address all of the following:

- The capacity-building programme should be organised over the course of three years, with at least one training session taking place in each Member State and those Associated Countries in the EU network of Comprehensive Cancer Centres, to be established through the Europe's Beating Cancer Plan. In the planning of the capacity-building programme, sufficient time should be allocated to ensure proper follow-up and implementation of the recommendations provided to the participating countries.
- Each training session shall be tailored to the needs of the participating country. These needs shall be identified and discussed with the participating country prior to the session. This concerns in particular the required participants / stakeholder groups, duly reflecting health and research system specificities.

¹⁸⁰ Joint Action on Cancer Control, European Partnership for Action against Cancer, Innovative Partnership for Action Against Cancer and Joint Action on Rare Cancers

¹⁸¹ For instance OECD, ECC

¹⁸² In particular, preparatory activities to establish "National Comprehensive Cancer Centres and EU Network linking these Centres", Preparatory activities to establish and "EU Network of Expertise on Cancers and Cancer Conditions", and the actions "EU Cancer Treatment Capacity and Capability Mapping" as well as "EU Cancer Inequalities Registry", see work programme for 2021 for EU4Health Programme at: https://ec.europa.eu/health/system/files/2021-06/wp2021_annex_en_0.pdf

¹⁸³ <https://www.nivel.nl/sites/default/files/bestanden/1003997.pdf>

- The capacity-building programme should start in countries with no existing Comprehensive Cancer Infrastructure, followed by those with some existing Comprehensive Cancer Infrastructures but needing substantial improvement, and then support the further development of Comprehensive Cancer Infrastructures in countries with an already established system.
- The training sessions shall consist of balanced theoretical and practical parts, including simulations, case studies, group exercises, mutual learning exercises and on-the-spot visits (when possible) to gather practical experience.
- At the end of each training session, a report shall be produced indicating the areas identified for improvement and suggesting recommendations and a follow-up for the participating country. This should include information on available EU (funding) instruments as well as any other suitable sources of support for the areas identified for improvement.
- After the initial session, the project should provide an on-demand support service to the participating country(ies) to ensure proper follow-up and support for the implementation of the recommendations provided.
- Proposals should consider, as part of this follow-up, to invite the country to participate to a supplementary and more focused session. The possibility of a twinning activity with another country which is more advanced on the areas identified for improvement should be explored as part of this follow-up.
- Proposals should consider including the following areas of development or improvement of future or existing Comprehensive Cancer Infrastructures in their capacity building activities:
 - Enhanced involvement in and quality of scientific research, including development and participation to clinical trials and epidemiological studies (*e.g.* clinical trial design, process of trial approval, ethical aspects, recruitment, staffing and training requirements including digital skills, organisational aspects, regulatory requirements, core facilities, patient participation and empowerment (in the planning and implementation of patient-oriented cancer research);
 - Better integration between research and care programmes;
 - Improvement of patient care pathways and integrated care;
 - Development and use of indicators (*e.g.* quality, outcomes) and registries;
 - Implementation of quality assurance and related standards;
 - Support in accreditation and certification;

- o Networking capacities (within and across Member States), including through improvement of data exchange capacities (e.g. interoperability and data protection related aspects);
- o Gender-related aspects (with respect to representation in research and career pathways and any other relevant aspects).
- At the end of the capacity-building programme, an overall report shall be produced, highlighting transferable best practices and lessons learned from the capacity-building programme and the support provided.

Due consideration should be given to other relevant EU-funded initiatives¹⁸⁴. This capacity-building programme should be built and conducted in full synergy and complementarity with the actions foreseen under the Europe's Beating Cancer Plan¹⁸⁵, with the Commission acting as a facilitator.

The funded action should build upon resources made available by the Knowledge Centre on Cancer¹⁸⁶.

Furthermore, the project funded under this topic is strongly encouraged to participate in networking and joint activities with other ongoing projects under the mission on cancer and other cancer relevant projects, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. This could also involve networking and joint activities with projects funded under other clusters and pillars of Horizon Europe, or other EU programmes, as appropriate.

The Commission may facilitate Mission-specific coordination through future actions. Therefore, proposals should include a budget for the attendance to regular joint meetings and may consider covering the costs of any other potential joint activities without the prerequisite to detail concrete joint activities at this stage. The details of these joint activities will be defined during the grant agreement preparation phase and project duration. In this regard, the Commission will take on the role of facilitator for networking and exchanges, including with relevant initiatives and stakeholders, if appropriate.

¹⁸⁴ For instance, the future European Partnership on Transforming Health and Care Systems (https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe/candidates-european-partnerships-health_en)

¹⁸⁵ In particular, preparatory activities to establish "National Comprehensive Cancer Centres and EU Network linking these Centres". Preparatory activities to establish an "EU Network of Expertise on Cancers and Cancer Conditions" and the "EU Cancer Treatment Capacity and Capability Mapping", see work programme for 2021 for EU4Health programme at: https://ec.europa.eu/health/system/files/2021-06/wp2021_annex_en_0.pdf. Applicants are not expected to contact these initiatives before the submission of proposals.

¹⁸⁶ Especially through the "European Guidelines and Quality Assurance Schemes for Breast, Colorectal and Cervical Cancer Screening and Diagnosis" and the "European Cancer Information System (ECIS)", see https://knowledge4policy.ec.europa.eu/cancer_en

HORIZON-MISS-2022-CANCER-01-03: Pragmatic clinical trials to optimise treatments for patients with refractory cancers

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 4.00 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 60.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Procedure</i>	The procedure is described in General Annex F. The following exceptions apply: In order to ensure a balanced cancer mission project portfolio and achieve the mission's goal, grants will be awarded to applications not only in order of ranking but at least also to two projects within applications that fully address cancer in children, adolescents or young adults (meaning people between birth and the age of 24), provided that the applications attain all thresholds.
<i>Evaluation and award procedure</i>	The evaluation committee will be composed partially by representatives of EU institutions.

Expected Outcome: While cancer research and innovation have generated novel treatment options, cancer patients across Europe need access to more effective and patient-centred interventions which keep up with increasing demands in a complex and fragmented oncology healthcare landscape with spiralling healthcare costs.

Furthermore, the COVID-19 pandemic with its detrimental impact on cancer control has demonstrated the need for different clinical trial designs with fewer inclusion and exclusion criteria that would allow evaluation of real-world effectiveness driving better and more affordable treatment solutions that are widely accessible across EU regions, Member States and Associated Countries.

Pragmatic clinical trials focus on choosing between care options. Pragmatic trials evaluate effectiveness, the effect of treatment in routine (real-world) clinical practice. Some examples include treatment versus active surveillance in patient management, combination of treatment interventions, determination of optimal dose and dose schedule, de-escalation of treatment intervention, comparative effectiveness of different treatment interventions.

Proposals under this topic should aim for delivering results that direct, tailor towards and contribute to all of the following expected outcomes:

- Cancer patients and their caregivers will have access to optimised and affordable treatment interventions that increase their quality of life, across EU regions, Member States and Associated Countries;
- Healthcare professionals and academia will generate clinical evidence, by evaluating effectiveness in randomised or cluster-randomised academic investigator-initiated¹⁸⁷ pragmatic clinical trials, how to best perform and deploy evidence-based treatment interventions that improve outcomes in real life for routine healthcare, including quality of life, for cancer patients who often present with co-morbidities;
- National healthcare providers, policymakers and authorities in EU Regions, Member States and Associated Countries will have the evidence to implement optimised and affordable treatments in their healthcare systems, including in everyday medical practice.

Scope: Proposals should address all of the following:

- Design and conduct randomised or cluster-randomised academic investigator-initiated pragmatic clinical trials to deliver effective and evidence-based treatment interventions for implementation by healthcare systems at the level of local communities, EU Regions, Member States and Associated Countries, taking into account socio-economic and biological stratification, such as biology of the disease, gender, cancer stage, and age.
- The chosen treatment intervention(s)¹⁸⁸ should be adapted to the particular needs of the target population and to the specificities of the provision of care at local, regional, or national level, duly reflecting the diversity across Member States and Associated Countries. Furthermore, affordability and accessibility should be taken into account.
- The successful proposals will address treatment interventions for patients with refractory cancers (cancers with a 5-year overall survival of less than 50% from time of diagnosis) at any stage of the disease, for any cancer subtype, in any age group or part of society.
- The successful proposals should clearly justify and describe the evidence supporting the chosen treatment intervention.
- The primary and secondary endpoints of the pragmatic clinical trial should target overall survival, patient-preferred clinical benefit, patient-reported outcomes and quality of life issues considered important by and for cancer patients and their caregivers. Such endpoints should be defined together with patients and their caregivers through research models that use open knowledge, (social) innovation systems and support end-user engagement (e.g. living labs).
- Implementers of pragmatic clinical trials and trial results should include physicians, academia, patients and their caregivers, patient representatives, payers, charities and

¹⁸⁷ Clinical trials in which a health technology (e.g. a medicinal product, a medical device, an in-vitro diagnostic medical device, a surgical or other medical intervention) is tested in humans, independently from commercial interest and for public health benefits.

¹⁸⁸ Any therapeutic intervention supported by evidence from exploratory clinical trials.

foundations, research organisations, civil society, regional and national research and innovation organisations, and health authorities.

- Successful pragmatic clinical trials, including their analyses, should be completed within 5 years after the start of the project. Translational research is not within the scope of this topic.
- In all instances, sex- and gender-related issues must be taken into account. All data should be disaggregated by sex, gender, age and other relevant variables, such as by measures of socio-economic status.

This topic requires the effective contribution of social sciences and humanities (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.

All projects funded under this topic are strongly encouraged to participate in networking and joint activities with other ongoing projects under the mission on cancer and other cancer-relevant projects, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. This could also involve networking and joint activities with projects funded under other clusters and pillars of Horizon Europe, or other EU programmes, as appropriate.

The Commission may facilitate Mission-specific coordination through future actions. Therefore, proposals should include a budget for the attendance to regular joint meetings and may consider covering the costs of any other potential joint activities, without the prerequisite to detail concrete joint activities at this stage. The details of these joint activities will be defined during the grant agreement preparation phase and project duration.

In this regard, the Commission will take on the role of facilitator for networking and exchanges, including with relevant initiatives and stakeholders, if appropriate.

HORIZON-MISS-2022-CANCER-01-04: Towards the creation of a European Cancer Patient Digital Centre

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions

Expected Outcome: The overall goal of the Mission on Cancer¹⁸⁹ and the Europe's Beating Cancer Plan¹⁹⁰ includes a better quality of life for patients and their families living with, and after, cancer.

Project results will support the creation of a virtual European Cancer Patient Digital Centre (ECPDC), which is a federated network of patient controlled (national) health data infrastructures enabling the voluntary exchange of patients and survivors' health data in a standardised approach, for primary and secondary use.

To that end, proposals under this topic should aim for delivering results that are directed, tailored towards and contributing to all of the following expected outcomes:

- Citizens, including cancer patients and survivors, are able to donate, access and manage their own clinical data, including patient-reported outcomes (PRO), and have control over the access to these data in a secure, standardised, ethical and interoperable manner.
- Citizens, including cancer patients and survivors, their families and caregivers have access to and use the ECPDC as a global centre of knowledge on cancer, including on prevention, diagnosis, treatment guidelines, treatment side-effects, access to cross-border health care, psychosocial and legal support, including guidance and support on returning to work, addressing financial issues and asserting survivors' rights.
- Tools are provided to clinicians allowing them to collaborate with patients to develop the best methods of care and personalized treatments regardless of their location.
- Citizens, including cancer patients and survivors, receive information on personalised care through the ECPDC, which monitors data trends and provide insights on treatment side effects and other outcome measures based on standardised patient-reported outcome and experience measures, by aggregating and analysing large data sets using state-of-the-art secure cloud computing and data analytics and visualisation methods and tools, including AI.
- Citizens, including cancer patients and survivors, are empowered in co-deciding on their care as well as in participating in research. The rights of patients are reinforced and their confidence in sharing their data for cancer research, innovation and policy development is increased.
- Researchers, citizens, including cancer patients and survivors, and policy-makers have access to a valuable resource of aggregated patient data that are evolving over time, to correlate different sources of information and whereby disease trajectories of patient's and survivor's health could be inferred. This will improve the knowledge and understanding of cancer and its impact on the lives of citizens, including cancer patients and survivors, thus contributing to the development of improved diagnostics, treatment, care and quality of life support and to the development of policies.

¹⁸⁹ https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en
¹⁹⁰ https://ec.europa.eu/health/system/files/2021-02/eu_cancer-plan_en_0.pdf

Scope: Patient-controlled health data networks in Europe show a high level of heterogeneity with regard to the involvement of EU Member States, as well as the types and interoperability of collected data, organisation and governance of data storage, its access and security, and the possibility to reuse data for research purposes.

Proposals should address the existing challenges and develop a roadmap towards the creation of the ECPDC as a virtual, federated network of national infrastructures of patient-controlled health data ('national or regional nodes'), taking into account synergies with the future UNCAN.eu platform, integrated within a larger European network of infrastructures, to which each Member State should have a single access portal.

The proposals should draw on existing expertise at the EU¹⁹¹ and national level and on EU- and Member State/Associated Country-tailored procedures for access, use and re-use of patient data. Moreover, synergies with the European Network of Cancer Registries¹⁹² should be established to ensure the ECPDC will create an ecosystem on knowledge of cancer. It could also include a call centre function.

In particular, proposals should take account of the results of a recently launched call on a pilot project for an EU infrastructure ecosystem for the secondary use of health data for research, policy-making and regulatory purposes¹⁹³, the future EU legislation on European Health Data Space (EHDS)¹⁹⁴, the future Cancer Survivor Smart-Card¹⁹⁵, the cancer use case under the 1+Million Genomes initiative (1+MG)¹⁹⁶, the Cancer Imaging Initiative¹⁹⁷ as well as the European Open Science Cloud¹⁹⁸. Successful applicants will be asked to liaise with these different initiatives where applicable¹⁹⁹, with the Commission acting as a facilitator.

Accordingly, proposals should cover all of the following activities:

- Actively engage and facilitate assessment of relevant existing patient-controlled health data networks at the EU and Member State/Associated Country level, to assess how the ECPDC will integrate and interact with existing national care pathways and the IT systems. A multidisciplinary team, including also users such as patients, care professionals and researchers, should be involved in the development of the proposed federated network.
- Develop a roadmap outlining the necessary intermediate steps towards the creation of the federated network of national health data infrastructures, including technical requirements, governance aspects and timelines.

¹⁹¹ <https://tehdas.eu/>

¹⁹² <https://www.enr.eu/>

¹⁹³ [Funding & tenders \(europa.eu\)](#)

¹⁹⁴ Future EC proposal on the use of data for healthcare and re-use of data for policymaking, regulatory purposes and research, to be adopted in 2022

¹⁹⁵ [As published on the Funding & Tenders Portal](#)

¹⁹⁶ [1+ Million Genomes | Shaping Europe's digital future \(europa.eu\)](#)

¹⁹⁷ [Funding & tenders \(europa.eu\)](#)

¹⁹⁸ https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/our-digital-future/open-science/european-open-science-cloud-eosc_en

¹⁹⁹ Applicants are not expected to contact these initiatives before the submission of proposals

- Design and perform a testing phase of the network before its release, allowing the adjustment of its tools/functionalities, validate the proposed approach and inform on how it could be scaled and sustained.
- Analyse and provide solutions for extraction of health data, e.g. from the electronic health records, genomic databases (e.g. 1+MG)²⁰⁰, the Cancer Imaging Initiative²⁰¹ and the future Cancer Survivor Smart-Card²⁰². Data protection rules should be taken into account.
- Analyse and provide solutions for cross-border transfer of personal data and options to access and store patient data, taking into account the eIDAS, GDPR, other EU and national legislations, and the integration of the ECPDC within the European Health Data Space.
- Establish robust communication and effective information exchange between diverse actors such as cancer patients and survivors, formal and informal caregivers, policy makers and researchers.

The funded actions should build upon resources made available by the Knowledge Centre on Cancer²⁰³, and complement actions under the Europe's Beating Cancer Plan²⁰⁴, including the Cancer Imaging Initiative²⁰⁵, and the future European Health Data Space²⁰⁶.

Furthermore, all projects funded under this topic are strongly encouraged to participate in networking and joint activities with other ongoing projects under the mission on cancer (especially with UNCAN.eu) and other cancer relevant projects, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. This could also involve networking and joint activities with projects funded under other clusters and pillars of Horizon Europe, or other EU programmes, as appropriate.

The Commission may facilitate Mission-specific coordination through future actions. Therefore, proposals should include a budget for the attendance to regular joint meetings and may consider covering the costs of any other potential joint activities without the prerequisite to detail concrete joint activities at this stage. The details of these joint activities will be defined during the grant agreement preparation phase and project duration. In this regard, the Commission will take on the role of facilitator for networking and exchanges, including with relevant initiatives and stakeholders, if appropriate.

²⁰⁰ [1+ Million Genomes | Shaping Europe's digital future \(europa.eu\)](https://ec.europa.eu/health/ehealth-digital-health-and-care/european-health-data-space_en)

²⁰¹ [Funding & tenders \(europa.eu\)](https://ec.europa.eu/health/ehealth-digital-health-and-care/european-health-data-space_en)

²⁰² [Funding & tenders \(europa.eu\)](https://ec.europa.eu/health/ehealth-digital-health-and-care/european-health-data-space_en)

²⁰³ Especially through the 'European Cancer Information System (ECIS)', see https://knowledge4policy.ec.europa.eu/cancer_en

²⁰⁴ Including the planned Cancer Inequalities Registry, see work programme for 2021 for EU4Health Programme at: https://ec.europa.eu/health/sites/default/files/funding/docs/wp2021_annex_en.pdf.

²⁰⁵ [Funding & tenders \(europa.eu\)](https://ec.europa.eu/health/ehealth-digital-health-and-care/european-health-data-space_en)

²⁰⁶ https://ec.europa.eu/health/ehealth-digital-health-and-care/european-health-data-space_en

HORIZON-MISS-2022-CANCER-01-05: Establishing of national cancer mission hubs and creation of network to support the Mission on Cancer

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions

Expected Outcome: The integration of the Mission on Cancer with activities at national, regional and where relevant at local level will be of utmost important to ensure its success. Taking into account the differences of national health and research and innovation systems, the coordination and support of cancer mission-related activities at national, regional and where relevant at local level are essential in this regard. At the same time, synergies with actions under Europe’s Beating Cancer Plan need to be generated.

The successful proposal should aim at delivering results that are directed at and contributing to all of the following expected outcomes:

- The activities of the Mission on Cancer are integrated with activities at national, regional, and local levels;
- Actors in national, regional or local health and research and innovation systems are engaged in the policy dialogue on cancer;
- Citizens, including patients, and national, regional and local stakeholders are engaged in the policy dialogue on cancer.

Scope: A national cancer mission hub will be established in each Member State and Associated Country. Its activities will include awareness raising and coordination of the Mission's activities among and with relevant actors in national, regional or local research and innovation and health systems, while also generating and leveraging synergies with Europe’s Beating Cancer Plan, thus fostering an enhanced policy dialogue on cancer control at national, regional or local level. Hence, the activities will be complementary to the ones of the National Contact Points that focus on Horizon Europe Work Programmes²⁰⁷. National cancer mission hubs will be established either by building on existing structures (e.g. mirror groups) or by creating new ones.

Notably these hubs will:

²⁰⁷ [Home | Horizon Europe NCP Portal](#)

- Facilitate integration of the activities of the Mission on Cancer at national, regional, and local levels e.g. identifying synergies between European, national, regional and local policies and initiatives related to cancer;
- Facilitate engagement of relevant actors and stakeholders at national, regional or local level going beyond the research and innovation and health systems to cover all relevant areas in cancer control and support policy dialogues on cancer (examples include employment, education, socio-economic aspects);
- Support citizen engagement activities at national, regional and local levels, including new participatory formats.

The proposed activities of national cancer mission hubs should be closely linked with those of the established National Contact Points (NCPs) under Horizon Europe, the National Focal Points (NFP) supporting the EU4Health programme and those of the contact points of other EU funding programmes²⁰⁸.

The national cancer mission hubs should operate for the whole duration of the Cancer Mission. As the volume and nature of activities is likely to evolve over time, the support for national mission hubs will be provided in two phases. This first phase will have a duration of 3 years (2023-2025). The support provided in the second phase will build on the achievements and needs identified during the first phase.

The Commission may facilitate Mission-specific coordination through future actions, such as the successful proposal TRAMI resulting from the topic HORIZON-MISS-2021-COOR-01-01, “Coordination of complementary actions for missions”. Therefore, the successful proposal should include a budget for the attendance to regular joint meetings and may consider covering the costs of any other potential joint activities without the prerequisite to detail concrete joint activities at this stage. The details of these joint activities will be defined during the grant agreement preparation phase and project duration. In this regard, the Commission will take on the role of facilitator for networking and exchanges, including with relevant initiatives and stakeholders, if appropriate.

Other Actions not subject to calls for proposals

Grants to identified beneficiaries

1. European Observatory on Health Systems and Policies: Organisation of workshops related to tackling cancer in Member States and Associated Countries in 2022-2023

Expected outcome:

- Synergies between actions of the Mission on Cancer and the Europe’s Beating Cancer Plan with national, regional and local initiatives are strengthened.

²⁰⁸ e.g. EURATOM, Digital Europe Programme

- National eco-system for sustained implementation of Mission on Cancer and Europe's Beating Cancer Plan.

Scope:

The European Observatory is expected to design and co-organise workshops in countries in 2022-2023 in order to:

- Engage actors from health, research and other relevant sectors in the implementation of actions under the Mission on Cancer and the Europe's Beating Cancer Plan at national, regional and/or local level;
- Build principles, models and participatory practices into the design of missions' governance, notably in actions at national, regional and local level in support of the national mission hubs;
- Build synergies between actions of the Mission on Cancer and the Europe's Beating Cancer Plan with national, regional and local initiatives.

This grant will be awarded without a call for proposals according to Article 195 (e) of the Financial Regulation and Article 20 of the Horizon Europe Framework Programme, and Rules for Participation to the legal entity identified below, as the European Observatory has the unique required expertise and capacity to implement the action, including access to countries where missions have been developed, and expertise in the transformation of health and care systems.

Legal entities:

European Observatory on Health Systems and Policies, WHO European Centre for Health Policy, Place Victor Horta 40 (bte 30), 1060 Brussels – Belgium

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: 3rd Quarter 2022 - 3rd Quarter 2023

Indicative budget: EUR 1.00 million from the 2022 budget²⁰⁹

²⁰⁹ Of which EUR 0.18 million from the 'Digital, Industry and Space' budget, EUR 0.80 million from the 'Health' budget, EUR 0.02 million from the 'Culture, creativity and inclusive society' budget.

Procurement actions

1. Procurement actions to support the mission on cancer

Description: Complementing the intervention area *Understanding and Prevent the preventable*, procurement actions are foreseen in the intervention areas: *Optimising diagnosis and treatment*, and *Quality of life*. The fifth intervention area, *Equitable access*, will be systematically addressed in each of these procurement actions. Results of procurement actions are expected to provide clear and quick answers to fine-tune bold yet realistic mission actions under preparation, including implementation, timing, infrastructural challenges, and governance.

- **Optimise diagnosis and treatment**

A study on the comprehensiveness of cancer care infrastructures in EU-27 and Associated countries to assess both national and regional capacity to support cancer control, including quality standards, staffing and resources (such as training of healthcare professionals, digitalisation and equipment), and economic aspects.

- **Quality of life**

A study on feasibility, utility and sustainability of a virtual European cancer patient digital centre (with references to the European Health Data Space, Digital Europe, ESFRI²¹⁰ Infrastructures and JRC Work Programmes).

In addition, a number of specific contracts may be signed under existing framework contracts in order to: (i) support the dissemination and exploitation of project results; (ii) contribute to the definition of future challenge priorities; (iii) undertake citizen surveys, (iv) carry out specific evaluations of programme parts; and (v) organise conferences, events and outreach activities.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: 4th Quarter 2021– 2nd Quarter 2022

Indicative budget: EUR 2.00 million from the 2021 budget²¹¹

2. Monitoring

A study to develop a framework for the monitoring of the implementation of the Mission on Cancer, in synergy with the monitoring framework of the Europe's Beating Cancer Plan. It has been verified that no previous study exists and that no other Commission service, institution or other entities have already procured a study in this regard.

²¹⁰ <https://lifescience-ri.eu/home.html>

²¹¹ Of which EUR 2.00 million from the 'Health' budget.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: 3rd Quarter 2022 - 1st Quarter 2023

Indicative budget: EUR 0.56 million from the 2022 budget²¹²

3. Informing citizens on and engaging them in the EU Mission on Cancer

The success of missions depends to a great extent on the engagement of citizens including patients. Therefore, the objective of this action - a further development of the current communication and citizens' engagement actions for the Mission on Cancer - is to engage citizens in the implementation of the Mission on Cancer. Actions will include:

- a series of interactive offline and online events and citizen engagement activities in the Member States and Associated Countries;
- setting up of a digital platform to ensure transparency and to facilitate citizen engagement, including building of a cancer community through a multilingual approach;
- methodology development on how to engage patients and citizens: experimentation on Living Lab methodology, applied research on citizen involvement.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: 3rd Quarter 2022 - 1st Quarter 2023

Indicative budget: EUR 2.00 million from the 2022 budget²¹³

²¹² Of which EUR 0.10 million from the 'Digital, Industry and Space' budget, EUR 0.45 million from the 'Health' budget, EUR 0.01 million from the 'Culture, creativity and inclusive society' budget.

²¹³ Of which EUR 0.37 million from the 'Digital, Industry and Space' budget, EUR 1.59 million from the 'Health' budget, EUR 0.04 million from the 'Culture, creativity and inclusive society' budget.

Mission: Restore our Ocean, seas and waters by 2030

This Mission will provide a systemic approach for the restoration, protection and preservation of our ocean, seas and waters. The objective of this Mission is to restore, protect and preserve the health of our ocean, seas and waters by 2030. The Mission is designed to deliver on the European Union's 2030 quantified and measurable targets for protecting and restoring ecosystems and biodiversity, for zero pollution, and for decarbonisation and net greenhouse gas emissions reduction towards climate-neutrality, within the EU's ocean, seas and waters. The Mission will support many Sustainable Development Goals (SDGs): in particular restoring our ocean and waters related actions will directly contribute to SDG 14 - Life below water and SDG 6 - Clean water and sanitation, as well as to SDG13 - Climate action.

The Mission will also contribute to the UN Decade of Ocean Science for Sustainable Development ²¹⁴ by fostering research and cooperation across European sea basins, including the EU Outermost Regions and beyond, and mobilise scientists, as well as citizens for a sustainable and healthy ocean, seas and waters.

The implementation plan specifies the goal and objectives as well as implementation details of the Mission "Restore our Ocean, seas and waters by 2030"²¹⁵.

The Mission Work Programme, under Horizon Europe, will contribute to the recovery of our ocean and waters by 2030 and more specifically to the following objectives:

1. Protect and restore marine and freshwater ecosystems and biodiversity, in line with the EU Biodiversity Strategy 2030²¹⁶;
2. Prevent and eliminate pollution of our ocean, seas and waters, in line with the EU Action Plan Towards Zero Pollution for Air, Water and Soil²¹⁷;
3. Make the sustainable blue economy carbon-neutral and circular, in line with the proposed European Climate Law ²¹⁸ and the holistic vision enshrined in the Communication on a new approach for a Sustainable Blue Economy²¹⁹.

The Mission will be implemented in two phases:

- In the first 'development and piloting' phase (2022-2025), research and innovation will lay the foundations for implementing the three Mission objectives and enabling actions, paving the way to further citizens participation and engagement. Research and innovation activities will support transformative and innovative solutions to be tested,

²¹⁴ <https://www.oceandecade.org/>

²¹⁵ https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/ocean_and_waters_implementation_plan_for_publication.pdf

²¹⁶ COM/2020/380 final

²¹⁷ COM/2021/400 final

²¹⁸ COM/2020/563 final

²¹⁹ COM/2021/240 final

piloted and validated. Enabling activities will generate new knowledge, observation and monitoring data.

- In the second ‘deployment and upscaling’ phase (2026-2030), the solutions will be further deployed, replicated and scaled up.

The Mission on ocean, seas and waters supports research and innovation in a system of European and national funding programmes sharing policy objectives. To foster synergies between R&I funding instruments (European and national), align R&I investments, ensure access to excellence and translate research results for the benefit of the society and the economy, applicants should consider and actively seek complementarities with, and where appropriate possibilities for further funding from other R&I-relevant EU, national or regional programmes for a sustainable blue economy, notably EMFF/EMFAF, LIFE, ERDF, ESF+, JTF, CEF Inland Waterways or Maritime and InvestEU, as well as private funds or financial instruments. All actions of the Mission are expected to disseminate their results according to FAIR (findable, accessible, interoperable, reusable) principles compatible with ongoing EU initiatives such as the European Marine Observation and Data Network (EMODnet) and the European Open Science Cloud (EOSC). In line with this approach, specific actions within the Mission will be devoted to widening access to data and knowledge of oceans, seas and freshwater through the Digital Twin Ocean.

The Commission envisages developing a call in 2022 with the following set of topics²²⁰ and/or actions

in the areas covered by the objectives of Mission ‘Restore our ocean and waters by 2030’ and will include this in a future work programme update:

- Environmentally friendly and sustainable fisheries,
- European Blue Parks,
- Danube River Basin Lighthouse - Restoration of freshwater ecosystems,
- Atlantic and Arctic Basin Lighthouse - restoration of marine ecosystems,
- Mediterranean sea basin lighthouse – Actions to prevent, minimize and remediate pollution from excess nutrients and chemicals,
- Blue carbon: nature-based solutions for climate change mitigation and adaptation,
- Lighthouse in the Baltic and North sea basins - Coordinated approach for algae production,
- Lighthouse in the Baltic and the North sea basins,
- Biodiversity monitoring in the European Digital Twin Ocean,

²²⁰ The listed areas for potential actions are tentative and non-binding.

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- Dynamic investment ecosystem leveraging private funds from philanthropic donors.

All proposals submitted to the calls listed below are required to show how their proposed activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

The following call(s) in this work programme contribute to this mission:

Call	Budgets (EUR million)		Deadline(s)
	2021	2022	
HORIZON-MISS-2021-OCEAN-01	5.00		14 Sep 2021
HORIZON-MISS-2021-OCEAN-02	57.00		12 Apr 2022
HORIZON-MISS-2021-OCEAN-03	19.00		12 Apr 2022
HORIZON-MISS-2021-OCEAN-04	19.00		12 Apr 2022
HORIZON-MISS-2021-OCEAN-05	9.00		12 Apr 2022
HORIZON-MISS-2022-OCEAN-01		106.00	27 Sep 2022
Overall indicative budget	109.00	106.00	

Call - Preparation for deployment of ‘lighthouse demonstrators’ and solution scale ups and cross-cutting citizen and stakeholder involvement

HORIZON-MISS-2021-OCEAN-01

Conditions for the Call

Indicative budget(s)²²¹

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ²²²	Number of projects expected to be funded
		2021		
Opening: 22 Jun 2021 Deadline(s): 14 Sep 2021				
HORIZON-MISS-2021-OCEAN-01-01	CSA	5.00 ²²³	Around 5.00	1
Overall indicative budget		5.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.

²²¹ 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 years 2021 and 2022.

²²² Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

²²³ Of which EUR 2.50 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.50 million from the 'Climate, Energy and Mobility' budget.

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<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-OCEAN-01-01: Preparation for deployment of lighthouse demonstrators and solution scale ups and cross-cutting citizen and stakeholder involvement

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 5.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	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: Project results are expected to contribute to all of the following expected outcomes:

- Enhanced preparation for an effective deployment of the mission research and innovation core in the Member States / Associated countries and communities: improved capacity to identify areas and solutions for effective ‘lighthouse demonstrators’ and improved capacity to identify solutions for scale ups, comparability and coherence of outcomes across Member States / Associated countries and effective and timely deployment and de-risking of scale ups to fully and timely achieve the mission objectives;

- Transformative and systemic portfolio approach to solutions addressing the challenges which the ocean, seas and waters are facing, fostering collective social responsibility and demonstrating implementation of ecosystem based management²²⁴;
- Increased awareness of stakeholders and citizens about the mission's objectives, programmes and tools and about the possibilities for their contribution to the mission, as well as improved access of stakeholders (scientific community, businesses, local and regional communities, NGOs and others) to programmes and instruments supporting restoration, conservation and sustainable use of the ocean, seas and waters;
- Full and early uptake and support of the mission by the governments of the Member States and Associated countries, regional and local communities, scientific community, businesses and other stakeholders and citizens.

Scope:

This action aims to prepare the implementation of Mission Ocean, Seas and Waters, with a particular focus on providing support for effective and timely deployment of the mission research and innovation core²²⁵ and for crosscutting citizen and stakeholder²²⁶ involvement during the identification, design and implementation of the mission.

The research and innovation core of the mission should aim at discovering and identifying novel solutions and innovations needed to address the societal challenges at the core of the mission and demonstrating through a network of 'lighthouse demonstrators'²²⁷ their effectiveness and feasibility, for their future scale up and full deployment. The mission research and innovation core should be developed in line with and deliver on the Green Deal priorities and also contribute directly to the digital transition.

²²⁴ Ecosystem based management [defined in CBD (2000)] is a management and resource planning procedure that integrates the management of human activities and their institutions with the knowledge of the functioning of ecosystems" ("a resource planning and management approach that integrates the connections between land, air and water and all living things, including people, their activities and institutions" (cf., Farmer et al., 2012, for a review of the concept of ecosystem approach in marine management). EAM is the underlying principle for environmental management strategies as formulated in the EU Water Framework Directive (WFD), Marine Strategy Framework Directive (MSFD), Maritime Spatial Planning Directive (MSPD) and the Common Fisheries Policy (CFP).

²²⁵ It is noted that the Mission objectives should go beyond the Mission research and innovation core element that consists of a network of lighthouse demonstrators and stakeholder and citizen engagement. For a full achievement of the Mission objectives an effective and timely scale up of the solutions and innovations from 'lighthouse demonstrators' would be needed with the involvement of many industrial, business and civil society partners and with large scale mobilisation of resources and actors throughout the European Union.

²²⁶ Examples of relevant stakeholders include public administrations and utilities; private sector services and industries, including small and medium enterprises (SMEs), scientific and innovator communities; financial intermediaries; civil society and philanthropy.

²²⁷ 'Lighthouse demonstrators' should be understood rather broadly as topical, area-based or other demonstrators that would have the capacity to substantially, effectively and timely contribute to the achievement of the Mission objectives in particular by discovering, identifying, testing, piloting, democratising and de-risking innovative solutions to the societal challenges that are within the scope of the Mission, with emphasis on systemic approach and ecosystem level solutions.

In close co-operation with the Mission Core Network ²²⁸, this action should prepare the ground for effective Mission deployment and for the identification, future scale-up and full deployment of these ‘lighthouse demonstrators’, including the following activities:

- Develop, test and pilot methodologies for:
 - i. the identification and selection of place-based ‘lighthouse demonstrators’ (to test, pilot, demonstrate, upscale and de-risk solutions and innovations in specific, real conditions), building on existing European innovation assets and R&I infrastructure²²⁹.
 - ii. assessing the feasibility of the scale up of projects, actions or already ongoing initiatives, existing solutions or infrastructures focusing on ecosystem restoration and ecosystem based management, on zero pollution in marine and water ecosystems and on decarbonisation of Blue Economy sectors, including a systemic perspective and allowing for input of various types of expertise²³⁰ and promoting multi-actor and multidisciplinary approaches.
 - iii. preparing for the digital transformation and integrating the ‘lighthouse demonstrators’ with the European digital initiatives²³¹.
 - iv. the development of inter-connected ‘lighthouse demonstrator’ networks allowing efficient exchanges of expertise and best practices and close cooperation to explore synergies, complementarities and solutions and innovations for deployment and scale up.
- Develop, test and pilot a set of methodologies for inclusion in lighthouse demonstrators and national mission hubs. These methodologies should be twofold. Firstly, they should enable the ‘lighthouse demonstrators’ and national mission hubs to achieve high quality and fit-for-purpose demonstration and ensure efficient preparation for scaling up of innovations from TRL 5, including digital solutions. Secondly, these methodologies should enable the co-creation and management of actions and projects with citizens and relevant stakeholders, based on co-creative working methods to ensure the highest degree of deployment of solutions and their fast and effective adoption by the beneficiaries. The action should also identify areas where use of such methodologies and approaches would be most effective in achieving tangible results.
- Develop and pilot a concept for an EU-wide network of citizens/stakeholder assemblies to bring all key actors together to ensure a successful implementation of the proposed

²²⁸ As described by the Horizon Europe Missions Work Programme 2021 call: HORIZON-MISS-2021-COOR-01 - Coordination of complementary actions for missions (HORIZON-MISS-2021-COOR-01)

²²⁹ Such as, Copernicus marine and climate change services, EMODNET, ESFRI research infrastructures, ERICs, H2020 projects.

²³⁰ Such as, natural sciences, social sciences, landscape planning, commerce and industry, law and regulations and policy.

²³¹ Such as, Destination Earth (<https://ec.europa.eu/digital-single-market/en/destination-earth-destine>) (Digital Twins on extreme events, climate adaptation and ocean), EOSC and Green Dataspaces.

mission. This would also require the necessary facilitators²³² to ensure the most suitable delivery of bottom up participation and ownership. The action should develop a roll out plan for this network, including other resources needed to enable effective citizen and stakeholder involvement in ‘lighthouse demonstrators’, national mission hubs and other related activities of the mission resulting in tangible contributions from these actors to the mission. This concept should include trainings and qualification requirements for facilitators, as well as best practices on how to manage and resource this network.

- Map and facilitate synergies in the context of the below initiatives, by identifying opportunities for the creation of important R&I-related enabling conditions and skills in support of reaching the mission objectives:
 - i. the skills agenda (ESF+) to create the needed capacities and skills;
 - ii. The ERASMUS+ programme;
 - iii. Horizon Europe instruments, including those of bottom-up nature like ERC, MSCA, EIT KICs, as well as its European partnerships and other missions;
 - iv. the European Innovation Fund,
 - v. the Digital Europe Programme;
 - vi. the Space Programme; and
 - vii. other relevant EU, national and or regional programmes and instruments.
- Contribute to the mission outreach, dissemination and communication strategy and plan by providing visionary visual examples tailor made for various audiences of what a successful ‘lighthouse demonstrators’ could bring to communities in terms of public goods solutions (e.g. how would success look like in 10 years’ time, if those envisaged solutions would be successfully deployed).

The possible participation of the JRC in the project will consist of connecting to the regions and cities, which in their smart specialisation / urban development strategies are interested in the priority themes relevant for the mission. This includes how the deployment of ‘lighthouse demonstrators’ could be co-created with these regions and cities so they contribute not only to the mission goals as such, but also to the transition to innovation for a green economy and local jobs under a place-based approach.

Call - Protect and restore marine and fresh water ecosystems and biodiversity

HORIZON-MISS-2021-OCEAN-02

²³² Citizen assemblies are typically supported by a team of impartial facilitators who guide participants through the process.

Conditions for the Call

Indicative budget(s)²³³

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ²³⁴	Number of projects expected to be funded
		2021		
Opening: 22 Dec 2021 Deadline(s): 12 Apr 2022				
HORIZON-MISS-2021-OCEAN-02-01	IA	17.00 ²³⁵	Around 8.50	2
HORIZON-MISS-2021-OCEAN-02-02	IA	17.00 ²³⁶	Around 8.50	2
HORIZON-MISS-2021-OCEAN-02-03	IA	17.00 ²³⁷	Around 8.50	2
HORIZON-MISS-2021-OCEAN-02-04	CSA	3.00 ²³⁸	Around 3.00	1
HORIZON-MISS-2021-OCEAN-02-05	CSA	3.00 ²³⁹	Around 3.00	1

²³³ 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 years 2021 and 2022.

²³⁴ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

²³⁵ Of which EUR 4.05 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.78 million from the 'Digital, Industry and Space' budget and EUR 0.43 million from the 'Civil Security for Society' budget and EUR 10.52 million from the 'Climate, Energy and Mobility' budget and EUR 0.22 million from the 'Culture, creativity and inclusive society' budget.

²³⁶ Of which EUR 4.05 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.78 million from the 'Digital, Industry and Space' budget and EUR 10.52 million from the 'Climate, Energy and Mobility' budget and EUR 0.43 million from the 'Civil Security for Society' budget and EUR 0.22 million from the 'Culture, creativity and inclusive society' budget.

²³⁷ Of which EUR 4.05 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.78 million from the 'Digital, Industry and Space' budget and EUR 0.43 million from the 'Civil Security for Society' budget and EUR 10.52 million from the 'Climate, Energy and Mobility' budget and EUR 0.22 million from the 'Culture, creativity and inclusive society' budget.

²³⁸ Of which EUR 0.71 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.31 million from the 'Digital, Industry and Space' budget and EUR 0.08 million from the 'Civil Security for Society' budget and EUR 1.86 million from the 'Climate, Energy and Mobility' budget and EUR 0.04 million from the 'Culture, creativity and inclusive society' budget.

²³⁹ Of which EUR 0.71 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.31 million from the 'Digital, Industry and Space' budget and EUR 0.08 million from the 'Civil Security for Society' budget and EUR 1.86 million from the 'Climate, Energy and Mobility' budget and EUR 0.04 million from the 'Culture, creativity and inclusive society' budget.

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Overall indicative budget		57.00		
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General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals for topics under objective 1 - Protect and restore marine and freshwater ecosystems and biodiversity should set out a credible pathway for the Mission on ocean, seas and waters to achieve its objectives, in line with the Marine Strategy Framework Directive (MSFD), the Water Framework Directive (WFD) and the Marine Spatial Planning Directive (MSPD), thus contributing more specifically to the following impacts:

- Protect a minimum of 30% of the EU's sea area and integrate ecological corridors, as part of a true Trans-European Nature Network;
- Strictly protect at least 10% of the EU's sea area;
- Restore at least 25,000 km of free-flowing rivers;
- Provide evidence for new legislation and the implementation of the existing ones, e.g: through enhancing tools for monitoring and assessment;
- Support international cooperation among countries, regions and other key actors to enable global transformative changes for our society and economy needed to achieve green and digital transitions;
- Support WFD, MSFD and MSPD implementation, which provide indicators and mechanism for assessments and measures to achieve Good Environmental Status (GES).

Proposals are invited against the following topic(s):

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-OCEAN-02-01: European Blue Parks

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 8.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 17.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	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).
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 5 to 7 by the end of the project – see General Annex B.

Expected Outcome: In support of the implementation of the Green Deal and the Biodiversity Strategy. Project results are expected to contribute to all of the following expected outcomes:

- Protect, restore and sustainable use of marine biodiversity, ecosystems and related services, including blueprints for the creation of socio-economic benefit and required socio-economic transition processes through innovative solutions for ecosystem-based management;
- Enhanced integrity and resilience of the ecosystem and restored European blue natural capital;
- A blueprint for the extension of marine protected areas or their status shifted from “protected” to “strictly protected” and creation of ecological corridors as part of a blue Trans-European Nature Network, and a strategy to build such network;
- Connected support for well-managed marine protected areas;
- Reinforced EU leadership in international efforts to combat biodiversity loss in line with the EU key priorities and international commitments, including through the protection, conservation, restoration and sustainable use of marine ecosystems and biodiversity.

Scope: Proposals under this topic will focus on innovation actions in protection, conservation and enhancement of the EU's blue natural capital that have the potential to be up scaled and reproduced at European level and beyond. Proposals will develop a strategic approach towards identifying needs, sharing innovation and transferring solutions between initiatives to create well managed marine protected areas. Proposals are expected to focus on marine biodiversity hot spots²⁴⁰ and enable ecological corridors leading to a truly coherent and resilient blue Trans-European Nature Network²⁴¹, and promoting and supporting investments in infrastructure that “builds with nature”. Projects will test and demonstrate novel methods, business models with revenue streams, social innovation to enable flexible socio-ecological management of protected areas to cope with a rapidly changing environment for coastal, offshore and deep-sea marine ecosystems, taking into account their connectivity and the need to preserve their inherent natural dynamics. Management and governance will ensure the sustainability of aquatic ecosystem protection initiatives. The proposals will duly consider national, local and regional protection and restoration initiatives, including relevant activities carried out under Regional Sea Conventions²⁴², to ensure effective management and governance of such initiatives and facilitate dialogue with all relevant stakeholders and show options to link such initiatives in a mutually supportive network²⁴³.

Based on scientific evidence underpinning the extension of networks of marine protected areas, activities to map EU marine biodiversity, highlighting the high biodiversity value or potential ones, and assessing coherence of the existing networks will be carried out. The action should not be limited to specific areas, but rather be a large-scale activity that supports, inter alia, also the implementation of marine protected areas (MPAs).

Proposals will build upon the existing digital knowledge systems for access to data, monitoring and forecasts and knowledge dissemination. MPA networks developed within regional seas conventions could also be considered for further actions. The proposed innovation actions for the Blue Parks will focus on the best-suited and most effective protection that will enable conservation and restoration, as per the biogeographical area or marine region. Identification of the best suited areas for marine protected areas under strict protection would be welcomed. Any proposal for new protected areas needs to concentrate on areas of very high biodiversity value or potential²⁴⁴ and be consistent with the Commission Guidance to Members States on the designation of additional protected areas, including a definition of a strict protection.

When identifying additional areas to be protected, particular account needs to be taken of the links between its ecosystems functions and their capacity to offer a wide range of services, in particular to contributing to mitigate and adapt to climate change, which are particularly vulnerable to the impacts of climate change and need to be made more resilient. Priority should be given not only to the protection of coastal biogenic habitat based carbon-rich

²⁴⁰ EU Biodiversity Strategy for 2030

²⁴¹ *idem*

²⁴² https://ec.europa.eu/environment/marine/international-cooperation/regional-sea-conventions/index_en.htm

²⁴³ E.g.: <https://www.mpas-europe.org/>

²⁴⁴ For example, significant areas of carbon-rich ecosystems should be strictly protected.

ecosystems, but also of pelagic and benthic ecosystems, which have a more extensive coverage and therefore can provide a significant contribution restore ecosystem processes and functions including to mitigate climate change. Such ecosystems have inherent capacity to store carbon, but may also need to be protected to avoid the release to the atmosphere of the carbon that they currently store²⁴⁵. Particular attention should also be given to creating the adequate conditions for the movement of species or habitats and more generally for increasing nature's capacity to adapt to climate change.

The projects will look at all ecosystem functions and processes using a coherent and systemic approach and avoid the risk of trade-offs of focusing on one or very few ecosystem services at the expense of others.

Projects funded under this topic are strongly encouraged to participate in networking and joint activities with other projects funded under other topics in the Mission Ocean, seas and waters as well as in other relevant Missions, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. Of particular importance in this context is topic HORIZON-MISS-2021-CLIMA-02-04: "Large scale demonstrators of climate resilience creating cross-border value". For this purpose, proposals should provide for dedicated activities and earmark appropriate resources.

A strong cooperation is expected with Cluster 6 topic HORIZON-CL6-2021-BIODIV-01-12 (Improved science based maritime spatial planning and identification of marine protected areas).

Projects funded under this topic would benefit from networking and exchanges of information with the projects funded under other Cluster 6 topics: HORIZON-CL6-2021-BIODIV-01-10 (Demonstration of measures and management for coastal and marine ecosystems restoration and resilience in simplified socio-ecological systems); 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-CLIMATE-01-02: Understanding the oceanic carbon cycle as well as with activities supported under the H2020 Green Deal call, notably LC-GD-7-1-2020 Restoring biodiversity and ecosystem services.

The involvement of national and local authorities and coastal communities will be required in order to ensure that the solutions designed are best suited, co-created and with the necessary ownership for their successful implementation. Citizen engagement is a pillar concept for the Mission. Activities should, therefore, promote a proactive involvement of local communities, innovative management practices, developing adequate facilitation and mediation skills applied through a proactive approach that targets local populations and land & sea use planning decision-makers, MPAs managers, and all relevant stakeholders, allowing for co-

²⁴⁵ For example, in the marine environment the extensive shelf sediments provide significant potential for carbon sequestration if they are healthy and left undisturbed. Similarly, coastal wetlands and seagrass meadows store blue carbon and offer natural solutions for coastal defence.

creation of solutions. Citizen engagement related activities should also be gender-responsive and socially inclusive.

Proposals are expected to contribute to the implementation of the existing legislation, notably in relation to Marine Protected Areas, by addressing environmental or anthropogenic pressures.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

HORIZON-MISS-2021-OCEAN-02: Danube river basin lighthouse – restoration of fresh and transitional water ecosystems

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 8.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 17.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>The following additional eligibility criteria apply:</p> <p>In addition to the standard eligibility conditions, the consortium must involve and include partners from at least three countries of the Danube river basin in which demonstration activities will be taking place.</p> <p>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).</p>
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 5 to 7 by the end of the project – see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The financial support to third parties may only be awarded to local and/or regional authorities from an ‘associated region’. The maximum amount to be</p>

	granted to each “associated region” is EUR 100,000, to showcase the feasibility, replicability and scale up of the solutions developed in the “associated region” ²⁴⁶ within the project. Each “associated region” must benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once.
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Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Restoration of at least 25,000 km of free-flowing rivers, in line with the EU Biodiversity Strategy, the EU Zero Pollution Plan and the Water Framework Directive as well as other EU instruments and policies that concern freshwater ecosystem protection;
- Reduction of artificial river flow barriers, improved eco-system connectivity in the Danube river basin (Danube river, its delta and its main tributaries), enhancement of water quality, enhancement of management of riparian zones and optimised sediment flow to the Black Sea;
- Enhanced restoration of freshwater ecosystems in the Danube river basin with nature-based solutions, including on the Danube delta and the Black sea;
- Increased population of the main fish, mollusc and other freshwater and Danube delta (transitional waters) species, especially emblematic species such as sturgeon;
- Improved protection of local communities and ecosystems from extreme events (flood, droughts, storms) in the Danube river basin and its delta, in particular with nature based solutions;
- Support the scaling up of ecosystem and biodiversity restoration in the ‘associated regions’ within the Danube river basin and Black Sea;
- Increased share of local revenue and business activities from the restored ecosystems in the overall local economic activities.

Scope: Proposals will show an effective and economically profitable way to freshwater ecosystem restoration and their sustainable use in the Danube river basin (including the transitional waters of Danube river delta), focusing on the reduction of the impact of artificial river flow barriers on wildlife movement, restoration and protection of biodiversity and valuable ecosystems (biodiversity hotspots), protection of inhabited areas against floods, measures to reduce impact of drought on freshwater ecosystems and biodiversity as well as sustainable management of river sediments. Nature-based solutions for freshwater ecosystem

²⁴⁶ ‘Associated regions’ are understood as areas with similar ecosystems (e.g. neighbouring regions and/or regions in a different river basin) and/or less-developed regions, to build capacity to implement the innovative solutions to restore freshwater ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” must benefit from the Financial Support to Third Parties provided under this topic only once.

restoration and sustainable use will be at the forefront of the proposals. Successful projects will at the same time show the way to profitable and sustainable use of the restored freshwater and Danube delta ecosystems and demonstrate how sustainable local activities can be built on and connected with these restored ecosystems and biodiversity to ensure socio-economic benefits to the local communities whilst adhering to the 'do not harm principle' for all activities including pollution.

Proposals must:

- Carry out demonstration activities in 3 different countries of the Danube river basin, involving and including in the consortium partners from these three countries;
- Identify areas and locations where the solutions are replicable and draw up an action plan and roadmap to replicate and scale up the ecosystem and biodiversity restoration solutions and actions.

The proposals will focus on demonstration of active and passive restoration of freshwater ecosystems, including in the transitional waters of the Danube river delta at a large scale. The demonstration activities will combine measures to increase ecosystem connectivity and ecological flow of the Danube river and/or its main tributaries and delta, improvement of protection of communities against floods using nature based solutions on the Danube river and/or its main tributaries, mitigation of the impact of droughts on freshwater ecosystems and biodiversity using nature based solutions.

To address the impact-driven approach of the Mission and the nature of Innovation Actions, proposals are expected to work with and engage at least 5 'associated regions' to showcase the feasibility, replicability and scale up of the solutions developed within the projects in other areas. 'Associated regions' are understood as areas with ecosystems that can benefit from the demonstration activities (e.g. neighbouring regions and/or regions in a different sea basin) and/or less-developed regions, with the need to build capacity to implement the innovative solutions to restore freshwater ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An "associated region" must benefit from the Financial Support to Third Parties provided under this topic only once. The partners will proactively reach out to the associated regions to enable them to follow closely the project and its demonstration activities. The projects should continuously share their outcomes and knowledge with those 'associated regions' and provide them with technical assistance to build capacity and to implement freshwater ecosystem restoration solutions in their territory that contribute to achieving the Mission objectives. The technical assistance to the 'associated regions' should include the provision of technical advisory services necessary to the prepare roadmaps, plans and projects to restore freshwater ecosystems in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions.

The maximum amount of Financial Support to Third Parties is EUR 100,000 per 'associated region' for the entire duration of the action. Proposals should outline the selection process of

the third parties to which financial support would be granted based on principles of transparency, objectivity and fairness.

The proposals are expected to integrate actions to support the social and economic transitions towards sustainable, inclusive and long term management of the restored ecosystems, including natural, social, economic and cultural elements and business models for generating revenue from the restored ecosystems and involve for that purpose local business communities, in particular SMEs, investors and other business stakeholders.

Training and communication activities towards stakeholders, including regional and local authorities from the ‘associated regions’ should be included in each proposal. Local actors, including where appropriate, the European Volunteer Corps and Mission Citizen Assemblies, should be involved in the demonstration of ecosystem restoration activities and any actions for social and economic transitions towards sustainable inclusive and long term management of the restored ecosystems, like citizen science.

The proposal may include actions to prevent and reduce pollution from different sources (such as chemicals, excess nutrients). The proposals should build on research and innovation developed in the frame of related projects in the current and previous EU framework programmes, such as Horizon2020, including Research Infrastructures and the Strategic Research and Innovation Agenda for the Black Sea (SRIA), LIFE and national and regional programmes in the Danube river basin as well as the activities of Water4All Partnership and Sustainable Blue Economy Partnership and the Common Maritime Agenda for the Black Sea, in particular in the framework of land-sea interactions.

The projects funded under this topic will:

- build links with other Mission activities and other relevant activities within the lighthouse and its area to maximize synergies, as well as with the European Blue Parks, other Mission lighthouses and their activities;
- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the Danube river basin lighthouse support facility and platform, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouse area as well as with the Blue Parks technical support platform;
- support the Ocean and water knowledge system, in particular by contributing to biodiversity monitoring, modelling and knowledge creation and data.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

HORIZON-MISS-2021-OCEAN-02-03: Atlantic and Arctic basin lighthouse - restoration of marine and coastal ecosystems and increased climate resilience

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 8.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 17.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>The following additional eligibility criteria apply:</p> <p>In addition to the standard eligibility conditions, the consortium must involve and include partners from at least three countries of the Atlantic and Arctic sea basin in which demonstration activities will be taking place.</p> <p>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p> <p>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).</p>
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 5 to 7 by the end of the project – see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The financial support to third parties may only be awarded to local and/or regional authorities from an ‘associated region’. The maximum amount to be granted to each “associated region” is EUR 100,000, to showcase the feasibility, replicability and scale up of the solutions developed in the “associated region”²⁴⁷ within the project. Each “associated region” must</p>

²⁴⁷ ‘Associated regions’ are understood as areas with similar ecosystems (e.g. neighbouring regions and/or regions in a different river basin) and/or less-developed regions, to build capacity to implement the innovative solutions to restore freshwater ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project

	benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once.
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Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Implementable blueprints for making communities climate-proof and weather-resilient, in particular by adapting to extreme weather events in coastal areas and sea level rise and other climate change impacts;
- Technological, logistical, social and economic innovation for the restoration of marine, coastal and river ecosystems;
- Blueprints for implementing such innovation through basin-scale cooperation in the Atlantic and Arctic, including through transition arrangements that create socially and economically sustainable propositions for local stakeholders;
- Contribute to the implementation of the European Green Deal, the EU Adaptation Strategy²⁴⁸, the EU Biodiversity Strategy, as well as the Galway Statement, the Belém Statement, the OSPAR Convention²⁴⁹ in connection with the implementation of EU marine environment, biodiversity and Arctic policies, the Atlantic Action Plan 2.0 with the aim to work for the benefit of all communities of stakeholders around the Atlantic and the Arctic and the Arctic Action Plan enhancing collaborative efforts to address the challenges in the Arctic;
- Contribute to better informed citizens and decision makers, for a better governance.

Scope: Proposals are expected to focus on marine ecosystem restoration at a large scale through:

- reduction of pressures (e.g. from fishing, pollution, extraction, barriers, and other human activities);
- application of ecosystem-based management, nature-based and building with nature restoration measures boosting resilience to climate change (e.g. sea level rise, floods, loss of permafrost in the Arctic) and mitigating its impacts;
- other effective locally adapted restoration measures and appropriate combinations of all the above.

The proposals should focus on demonstration activities for the restoration of marine and coastal ecosystems through nature-based solutions that boost coastal resilience, such as oyster reefs, kelp forests, wetlands and salt marshes. The proposals are also expected to explore

consortium. An “associated region” must benefit from the Financial Support to Third Parties provided under this topic only once.

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COM/2021/82 final

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different pressures and climate change adaptation needs in a systemic way, such as the soil erosion and its impact on coastal areas resulting in marine ecosystem pressures.

In addition, combination of nature-based restoration measures with sustainable and circular technological solutions, as well as sustainable aquaculture practices may be considered.

Proposals may involve coastal communities particularly vulnerable to the risks of extreme weather events and sea level rise, including islands and the EU Outermost Regions that urgently need restoration measures to adapt to climate change thus ensuring their population safety and climate proof and weather resilient infrastructure.

The proposals are expected to involve local actors and communities in active and passive marine ecosystem restoration and protection and holistic socio-ecological management of restored and valuable ecosystems, including where appropriate European volunteer/solidarity corps and citizens science activities in the restoration activities. Citizen engagement is a pillar concept for the Mission. Communities need to undergo significant changes in order to become climate-proof, and measures need to be co-owned in order to be best accepted. The involvement of local authorities and local communities will be required in order to ensure that the solutions designed are best suited, co-created and with the necessary ownership. Activities should, therefore, promote the involvement of local communities in order to hear from them the impact of intended actions, and to co-create measures that meet the Mission's aims while taking local communities' needs and values on board.

Proposals must:

- Carry out demonstration activities in 3 different countries of the Atlantic and Arctic basin, involving and including in the consortium partners from these three countries;
- Identify areas and locations where the solutions are replicable and draw up an action plan and roadmap to replicate and scale up the ecosystem and biodiversity restoration solutions and actions.

To address the impact-driven approach of the Mission and the nature of Innovation Actions, proposals are expected to work with and engage at least 5 'associated regions' to showcase the feasibility, replicability and scale up of the solutions developed within the projects in other areas. 'Associated regions' are understood as areas with ecosystems that can benefit from the demonstration activities (e.g. neighbouring regions and/or regions in a different sea basin) and/or less-developed regions, with the need to build capacity to implement the innovative solutions to restore marine ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An "associated region" must benefit from the Financial Support to Third Parties provided under this topic only once. The partners will proactively reach out to the associated regions to enable them to follow closely the project and its demonstration activities. The projects should continuously share their outcomes and knowledge with those 'associated regions' and provide them with technical assistance to build capacity and to implement freshwater ecosystem restoration solutions in their territory that contribute to

achieving the Mission objectives. The technical assistance to the 'associated regions' should include the provision of technical advisory services necessary to the prepare roadmaps, plans and projects to restore maecosystems in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions.

The maximum amount of Financial Support to Third Parties is EUR 100,000 per 'associated region' for the entire duration of the action. Proposals should outline the selection process of the third parties to which financial support would be granted based on principles of transparency, objectivity and fairness.

The proposals should build on research and innovation developed in the frame of related projects in the current and previous EU framework programmes, such as Horizon 2020 (e.g. the ongoing projects and activities which are part of the All-Atlantic Ocean Research Alliance²⁵⁰), LIFE and national and regional programmes in the Atlantic/Arctic basins as well as the activities of the Sustainable Blue Economy Partnership and the Atlantic Action Plan 2.0. Projects may benefit from the expertise and knowledge of the Joint Research Centre, especially in the areas of large scale monitoring and assessment set-up, technical input on harmonised methodologies and making links with relevant policy frameworks.

The projects funded under this topic will address all following issues:

- build links with other Mission activities and other relevant activities within the lighthouse and its area to maximize synergies, as well as with the European Blue Parks, other Mission lighthouses;
- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the Danube river basin lighthouse support facility and platform, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouse area as well as with the Blue Parks technical support platform;
- support the Ocean and water knowledge system, in particular by contributing to biodiversity monitoring, modelling and knowledge creation and data.

Projects funded under this topic are strongly encouraged to participate in networking and joint activities with other projects funded under other topics in the Mission Ocean, seas and waters as well as in other relevant Missions, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. Of particular importance in this context is topic HORIZON-MISS-2021-CLIMA-02-04: "Large scale demonstrators of climate resilience creating cross-border value". For this purpose, proposals should provide for dedicated activities and earmark appropriate resources.

Similarly, projects funded under this topic would benefit from networking and exchanges of information with the projects funded under Cluster 6 following topics: HORIZON-CL6-2021-

²⁵⁰ <https://allatlanticocean.org/whoweare>

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BIODIV-01-10 (Demonstration of measures and management for coastal and marine ecosystems restoration and resilience in simplified socio-ecological systems); HORIZON-CL6-2021-BIODIV-01-12 (Improved science based maritime spatial planning and identification of marine protected areas).

Proposals are expected to show how their activities and results will achieve the Mission's objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the 'development and piloting' phase and 2030 for the 'deployment and upscaling phase'.

HORIZON-MISS-2021-OCEAN-02-04: Danube river basin lighthouse – coordination activities

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	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).
<i>Award criteria</i>	The criteria are described in General Annex D. The following exceptions apply: The following additions to the general award criteria apply: The capacity of the proposed approach to systematically link up, coordinate and network with projects under future Work programme topics to ensure effective project portfolio management within the area of the Mission lighthouse throughout the lifetime of the Mission. This is necessary to ensure effective coordination within the Mission lighthouse as a part of the portfolio management of the Mission.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Grants awarded under this topic will be linked to the following action(s): HORIZON-MISS-2021-OCEAN-02-02: Danube river basin lighthouse

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	– restoration of freshwater ecosystems.
<i>Evaluation and award procedure</i>	The evaluation committee will be composed partially by representatives of EU institutions.

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

- Structuring effect to consolidate and engage a wide community of relevant stakeholders across the entire Danube river basin, including its delta, able to ensure an effective governance structure for the achievement of the Mission objectives;
- An effective governance structure ensuring coherence and alignment of policies, initiatives and actions at EU, national and local level;
- Well-coordinated activities underpinned by a consistent monitoring framework to assess the implementation and achievement of the Mission objectives;
- Effective provision of technical services, governance and business models to support and guarantee a sustainable socio-economic development of the entire Danube river basin, including its delta;
- Well-functioning basin scale innovation ecosystem attractive to investors and businesses;
- Increased awareness about the Mission and involvement of citizens in its implementation in the Danube river basin and beyond.

Scope: The Mission Ocean, seas and water WP part under Horizon Europe, defines “lighthouses” as “*hubs and platforms supporting the development and deployment of transformative innovative solutions in all forms – technological, social, business, governance, ensuring fast progress towards the achievement of Mission objectives and important impact on society in the river and sea basins through science and technology*”. The Mission lighthouse should adhere to the lighthouse implementation charter, ensuring its political commitment to the implementation of the lighthouse.

Proposals under this topic will bring together complementary public and/or private organisations and networks, and integrate heterogeneous expertise to support the rolling out of a “lighthouse” within the Danube river basin, including its delta, and provide a broad portfolio of services ensuring the development and deployment of innovative solutions addressing the objectives of the Mission Ocean, seas and waters in the lighthouse area.

Building on and bringing together existing governance structures and networks and relevant existing activities, proposals are expected to address all following activities:

- *Danube river basin lighthouse governance and networking*: liaise with the Mission secretariat²⁵¹ to ensure a coherent and timely implementation of the Mission in the lighthouse area; contribute to the implementation of the lighthouse charter ²⁵², consisting in a political commitment of MSs/ACs, regions and, whenever relevant, of third countries and other stakeholders, for instance through workshops and other gatherings, networking and provide support actions initiated or carried out by the European Commission services to establish the lighthouse implementation charters; set-up and support an effective and participatory governance structure for the Danube river (including its delta) basin lighthouse involving key players (public and private entities, including SMEs, civil society organisations as well as citizen representatives/citizen assemblies and local communities) at basin level and ensure cooperation and networking of stakeholders for achieving the three objectives²⁵³ of the Mission Ocean, seas and waters; provide networking opportunities and exchanges of good practices within the Danube river basin and with other HE Missions and HE Partnerships; liaise and network with other Mission lighthouses to ensure exchanges of good practices and sharing of innovative solutions (cross-fertilisation); liaise with relevant projects implemented by other Missions in the lighthouse area and ensure exchanges of good practices; support the alignment of Regional Smart Specialisation Strategies and Next Generation EU initiatives and projects with the Mission objectives and explore synergies between the Mission and Smart Specialisation strategies and Next Generation EU initiatives and projects;
- *Communication, monitoring and contribution to overall Mission implementation*: design and carry out at basin scale communication actions to promote Mission Ocean, seas and waters and its activities targeting different stakeholders and the general public, both at basin scale and at the regional/local level including in the ‘associated regions’ ²⁵⁴; contribute to monitoring of Mission implementation in the lighthouse area (including a liaison with projects under Mission lighthouse topic HORIZON-MISS-2021-OCEAN-02-02: Danube river basin lighthouse – restoration of fresh and transitional water ecosystems) and provide relevant information and data to the Mission Implementation Platform (see Other actions, Public Procurements, topic Mission Ocean, seas and waters implementation support platform – overall Mission coordination and monitoring; European Blue parks technical assistance; citizen engagement; communication); carry out quantitative and qualitative analysis and studies in relation to the Mission and other relevant activities implemented at basin level; liaise with the Mission Implementation

²⁵¹ Mission secretariat consisting of European Commission staff, is located within the European Commission services and is managed by the Mission Manager, for details on Mission governance see Commission Decision of 24.6.2021 (2021) 4472 final.

²⁵² Lighthouse implementation charter is a political commitment of Member States/Associated Countries and regions to implement the lighthouse objectives.

²⁵³ Mission Ocean, seas and waters objectives: 1) Protect and restore marine and freshwater ecosystems and biodiversity; 2) Prevent and eliminate pollution of our oceans, seas and waters; 3) Sustainable, carbon-neutral and circular Blue economy.

²⁵⁴ For the concept and role of “associated region” please see topic HORIZON-MISS-2021-OCEAN-02-02: Danube river basin lighthouse – restoration of freshwater ecosystems

Platform to ensure coherent and timely implementation of the Mission in the lighthouse area;

- *Develop and foster Danube river basin innovation ecosystem*: identify R&I needs at basin level; liaise with the ocean and water knowledge system and foster sharing of observation data, information and computing toolboxes; disseminate and raise awareness about suitable innovative solutions to address these needs, (at least 2 dissemination activities per year at a basin level); organise demonstration and testing activities for the innovative solutions (at least 2 activities per year implemented within the basin area); support access to finance and mobilise suitable investors, through e.g.: pitching events, networks of investors, venture capital funds, local Entrepreneurial Discovery processes, etc.; support knowledge and technology transfer, including through training and skill development (at least 2 activities per year at a basin level); support cooperation of lighthouse projects with ‘associated regions’²⁵⁵;
- *Support mission implementation with technical expertise and know-how*: develop a coherent catalogue of services providing (on-site or remote) technical expertise and know-how for testing, validating, scaling-up, reproducing, customising and deploying innovative solutions under the lighthouse objective, ensuring interoperability with the Ocean and water knowledge system; develop, make publicly available and curate a catalogue of projects and initiatives funded at EU, national and regional level and to the extent possible, include also privately funded initiatives and projects;

Proposals should include an outreach plan to actively advertise its activities and services to the citizens and local communities and to targeted stakeholders, including to relevant industries and SMEs.

Proposals are expected to build on and integrate all relevant existing governance structures, networks and capacities within the Danube river basin and its delta, such as organisations involved in the Macroregional strategy for the Danube region and/or in the Strategic Research and Innovation Agenda for the Black Sea (Black Sea SRIA); the International Commission for the protection of the Danube river; European Research Infrastructures²⁵⁶, with a view of ensuring comprehensive and inclusive lighthouse governance.

Due to the transboundary nature of waters, basin-scale coordination and cooperation across regions, is required for solutions to be effectively implemented and to resolve shared problems.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

²⁵⁵ For the concept and role of “associated region” please see topic HORIZON-MISS-2021-OCEAN-02-02: Danube river basin lighthouse – restoration of freshwater ecosystems.

²⁵⁶ See https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/our-digital-future/european-research-infrastructures_en

HORIZON-MISS-2021-OCEAN-02-05: Atlantic and Arctic basins lighthouse – coordination activities

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	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).
<i>Award criteria</i>	The criteria are described in General Annex D. The following exceptions apply: The following additions to the general award criteria apply: The capacity of the proposed approach to systematically link up, coordinate and network with projects under future Work programme topics to ensure effective project portfolio management within the area of the Mission lighthouse throughout the lifetime of the Mission. This is necessary to ensure effective coordination within the Mission lighthouse as a part of the portfolio management of the Mission.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Grants awarded under this topic will be linked to the following action(s): HORIZON-MISS-2021-OCEAN-02-03: Atlantic and Arctic basin lighthouse - restoration of marine and coastal ecosystems and increased climate resilience
<i>Evaluation and award procedure</i>	The evaluation committee will be composed partially by representatives of EU institutions.

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

- Structuring effect to consolidate and engage a wide community of relevant stakeholders across the Atlantic and Arctic sea basins able to ensure an effective governance structure for the achievement of the Mission objectives;
- An effective governance structure ensuring coherence and alignment of policies, initiatives and actions at EU, national and local level;
- Well-coordinated activities underpinned by a consistent monitoring framework to assess the implementation and achievement of the Mission objectives;
- Effective provision of technical services, governance and business models to support and guarantee a sustainable socio-economic development of the Atlantic and Arctic seas basins;
- Well-functioning basin scale innovation ecosystem attractive to investors and businesses;
- Increased awareness about the Mission and involvement of citizens in its implementation in the Atlantic and Arctic seas basins and beyond.

Scope: The Mission Ocean, seas and water WP part under Horizon Europe, defines “lighthouses” as “*hubs and platforms supporting the development and deployment of transformative innovative solutions in all forms – technological, social, business, governance, ensuring fast progress towards the achievement of Mission objectives and important impact on society in the river and sea basins through science and technology*”. The Mission lighthouse should adhere to the lighthouse implementation charter, ensuring its political commitment to the implementation of the lighthouse.

Proposals under this topic will bring together complementary public and/or private organisations and networks, and integrate heterogeneous expertise to support the rolling out of a “lighthouse” within Atlantic and Arctic seas basins and provide a broad portfolio of services ensuring the development and deployment of innovative solutions addressing the objectives of the Mission Ocean, seas and waters in the lighthouse area.

Building on and bringing together existing governance structures and networks and relevant existing activities, proposals are expected to address all following activities:

- *Atlantic and Arctic seas basins lighthouse governance and networking*: liaise with the Mission secretariat²⁵⁷ to ensure a coherent and timely implementation of the Mission in the lighthouse area; contribute to the implementation of the lighthouse charter²⁵⁸, for instance through workshops and other gatherings, networking and provide support actions initiated or carried out by the European Commission services to establish the

²⁵⁷ Mission secretariat consisting of European Commission staff, is located within the European Commission services and is managed by the Mission Manager, for details on Mission governance see Commission Decision C(2021) 4472 final of 24.06.2021.

²⁵⁸ Lighthouse implementation charter is a political commitment of Member States/Associated Countries and regions to implement the lighthouse objectives.

lighthouse implementation charters; set-up and support and effective and participatory governance structure for the Atlantic and Arctic seas basins lighthouse involving key players (public and private entities, including SMEs, civil society organisations as well as citizen representatives/citizen assemblies and local communities) at basin level and ensure cooperation and networking of stakeholders for achieving the three objectives²⁵⁹ of the Mission Ocean, seas and waters; provide networking opportunities and exchanges of good practices within the Atlantic and Arctic seas basins and with other HE Missions and HE Partnerships; liaise and network with other Mission lighthouses to ensure exchanges of good practices and sharing of innovative solutions (cross-fertilisation); liaise with relevant projects implemented by other Missions in the lighthouse area and ensure exchanges of good practices; support the alignment of Regional Smart Specialisation Strategies and Next Generation EU initiatives and projects with the Mission objectives and explore synergies between the Mission and Smart Specialisation strategies and Next Generation EU initiatives and projects;

- *Communication, monitoring and contribution to overall Mission implementation*: design and carry out at basin scale communication actions to promote Mission Ocean, seas and waters and its activities targeting different stakeholders and the general public, both at basin scale and at the regional/local level including in the ‘associated regions’²⁶⁰; contribute to monitoring of Mission implementation in the lighthouse area (including a liaison with projects under Mission lighthouse topic HORIZON-MISS-2021-OCEAN-02-02: Danube river basin lighthouse – restoration of freshwater ecosystems) and provide relevant information and data to the Mission Implementation Platform (see Other actions, Public Procurements, topic Mission Ocean, seas and waters implementation support platform – overall Mission coordination and monitoring; European Blue parks technical assistance; citizen engagement; communication); carry out quantitative and qualitative analysis and studies in relation to the Mission and other relevant activities implemented at basin level; liaise with the Mission Implementation Platform to ensure coherent and timely implementation of the Mission in the lighthouse area;
- *Develop and foster Atlantic and Arctic seas basins innovation ecosystem*: identify R&I needs at basin level; liaise with the ocean and water knowledge system and foster sharing of observation data, information and computing toolboxes; disseminate and raise awareness about suitable innovative solutions to address these needs, (at least 2 dissemination activities per year at a basin level); organise demonstration and testing activities for the innovative solutions (at least 2 activities per year implemented within the basin area); support access to finance and mobilise suitable investors, through e.g.: pitching events, networks of investors, venture capital funds, local Entrepreneurial Discovery processes, etc.; support knowledge and technology transfer, including through

²⁵⁹ Mission Ocean, seas and waters objectives: 1) Protect and restore marine and freshwater ecosystems and biodiversity; 2) Prevent and eliminate pollution of our oceans, seas and waters; 3) Sustainable, carbon-neutral and circular Blue economy.

²⁶⁰ For the concept and role of “associated region” please see topic HORIZON-MISS-2021-OCEAN-02-03: Atlantic and Arctic basin lighthouse - restoration of marine ecosystems.

training and skill development (at least 2 activities per year at a basin level); support cooperation of lighthouse projects with ‘associated regions²⁶¹’;

- *Support mission implementation with technical expertise and know-how*: develop a coherent catalogue of services providing (on-site or remote) technical expertise and know-how for testing, validating, scaling-up, reproducing, customising and deploying innovative solutions under the lighthouse objective, ensuring interoperability with the Ocean and water knowledge system; develop, make publicly available and curate a catalogue of projects and initiatives funded at EU, national and regional level and to the extent possible, include also privately funded initiatives and projects;

Proposals should include an outreach plan to actively advertise its activities and services to the citizens and local communities and to targeted stakeholders, including to relevant industries and SMEs.

Proposals are expected to build on and integrate all relevant existing governance structures, networks and capacities within the Atlantic and Arctic seas basins, such as organisations involved in All-Atlantic Ocean Research Alliance as set up under the Galway Statement and Belém Statement and all relevant partners working on the actions in the frame of the All-Atlantic Ocean Research Alliance, as relevant, as well as on the efforts under the Atlantic Action Plan 2.0., with a view of ensuring comprehensive and inclusive lighthouse governance.

Due to the transboundary nature of waters, basin-scale coordination and cooperation across regions, is required for solutions to be effectively implemented and to resolve shared problems.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

Call - Prevent and eliminate pollution of our ocean, seas and waters

HORIZON-MISS-2021-OCEAN-03

Conditions for the Call

Indicative budget(s)²⁶²

Topics	Type	Budgets	Expected EU	Number
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²⁶¹ For the concept and role of “associated region” please see topic HORIZON-MISS-2021-OCEAN-02-03: Atlantic and Arctic basin lighthouse - restoration of marine ecosystems.

²⁶² 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 years 2021 and 2022.

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	of Action	(EUR million)	contribution per project (EUR million) ²⁶³	of projects expected to be funded
		2021		
Opening: 22 Dec 2021 Deadline(s): 12 Apr 2022				
HORIZON-MISS-2021-OCEAN-03-01	IA	16.00 ²⁶⁴	Around 8.00	2
HORIZON-MISS-2021-OCEAN-03-02	CSA	3.00 ²⁶⁵	Around 3.00	1
Overall indicative budget		19.00		

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

²⁶³ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

²⁶⁴ Of which EUR 3.81 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.68 million from the 'Digital, Industry and Space' budget and EUR 0.40 million from the 'Civil Security for Society' budget and EUR 9.90 million from the 'Climate, Energy and Mobility' budget and EUR 0.21 million from the 'Culture, creativity and inclusive society' budget.

²⁶⁵ Of which EUR 0.71 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.31 million from the 'Digital, Industry and Space' budget and EUR 0.08 million from the 'Civil Security for Society' budget and EUR 1.86 million from the 'Climate, Energy and Mobility' budget and EUR 0.04 million from the 'Culture, creativity and inclusive society' budget.

Proposals for topics under objective 2 - Prevent and eliminate pollution of our ocean, seas and waters should set out a credible pathway for the Mission Ocean, seas and waters objectives, and contributing more specifically to the following impacts:

- Reduce by at least 50% plastic litter at sea;
- Reduce by at least 30% microplastics released into the environment;
- Reduce beach litter to less than 20 items per 100 meters of coastline
- Provide evidence for new legislation and the implementation of the existing ones;
- Support cooperation among countries, regions and other actors to enable transformative changes for our society and economy needed to achieve the European Green Deal objectives and the Zero Pollution Action Plan.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-OCEAN-03-01: Mediterranean sea basin lighthouse - actions to prevent, minimise and remediate litter and plastic pollution

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 16.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>In addition to the standard eligibility conditions, the consortium must involve and include partners from at least three countries of the Mediterranean sea basin in which demonstration activities will be taking place.</p> <p>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p>
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 5 to 7 by the end of the project – see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Beneficiaries may provide financial support to third parties.</p>

	<p>The support to third parties can only be provided in the form of grants. The financial support to third parties may only be awarded to local and/or regional authorities from an ‘associated region’.</p> <p>The maximum amount to be granted to each “associated region” is EUR 100,000, to showcase the feasibility, replicability and scale up of the solutions developed in the “associated region”²⁶⁶ within the project. Each “associated region” must benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once.</p>
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Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Reduced pollution from litter, plastic and microplastic, in the Mediterranean Sea basin in line with the objectives of the EU Zero Pollution Plan and the Convention for the protection of the Mediterranean sea against pollution;
- Reduce beach litter to less than 20 items per 100 meters of coastline in line with the Marine Strategy Framework Directive (MSFD) requirement;
- Accelerated uptake of innovative solutions to prevent and minimize litter, plastic and microplastic pollution;
- Effective monitoring of marine litter quantities, in line with EU methodologies, such as Single Use Plastics Directive and assessment of the impact of implemented measures;
- Support WFD and MSFD implementation, which provide indicators and mechanism for assessments and measures to achieve Good Environmental Status (GES);
- Empowered citizens taking action against pollution.

Scope: In line with the EU Zero Pollution Action Plan for Air, Water and Soil, proposals should demonstrate scalable breakthrough innovations (technological, business, social and governance) to prevent and minimize marine and freshwater pollution from litter, plastics and microplastics.

Following the zero pollution hierarchy, proposals should focus on demonstrating replicable solutions to prevent and minimise pollution in the Mediterranean Sea including its major river catchment areas and taking into consideration land-sea interactions through measures, such as:

²⁶⁶ ‘Associated regions’ are understood as areas with similar ecosystems (e.g. neighbouring regions and/or regions in a different sea basin) and/or less-developed regions, to build capacity to implement the innovative solutions to restore freshwater ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” must benefit from the Financial Support to Third Parties provided under this topic only once.

- Upstream prevention of litter, plastic and microplastic generation by design;
- Substitutes or alternative less polluting substances and materials (especially alternatives to plastics and microplastics) for the most prevalent litter found in freshwater and at sea;
- Circular design of fishing gear, including improved reparability and durability (while improving selectivity to reduce discard of bycatches and improved energy efficiency) in close cooperation with the business community in the respective industrial ecosystems;
- Solutions for identifying, tracking and recovery of accidental loss of containers and fishing gear;
- Efficient collection (incl. in ports and coastal areas), sorting, recycling and re-use of waste, waste water treatment and adequate port reception facilities.

Proposed solutions for pollution prevention, elimination and remediation shouldn't increase the level of anthropogenic underwater noise.

Proposed solutions should be in line with the EU taxonomy regulation and delegated acts.

Proposals must:

- Carry out demonstration activities in 3 different countries of the Mediterranean sea basin, involving and including in the consortium partners from these three countries;
- Identify areas and locations where the solutions are replicable and draw up an action plan and roadmap to replicate and scale up the pollution solutions and actions.

To address the impact-driven approach of the Mission and the nature of Innovation Actions, proposals are expected to work with and engage at least 5 'associated regions' to showcase the feasibility, replicability and scale up of the solutions developed within the projects in other areas. 'Associated regions' are understood as areas with ecosystems that can benefit from the demonstration activities (e.g. neighbouring regions and/or regions in a different sea basin) and/or less-developed regions, with the need to build capacity to implement the innovative solutions to to prevent, eliminate and remediate pollution to prevent, eliminate and remediate pollution in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions.

The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An "associated region" must benefit from the Financial Support to Third Parties provided under this topic only once. The partners will proactively reach out to the associated regions to enable them to follow closely the project and its demonstration activities. The projects should continuously share their outcomes and knowledge with those 'associated regions' and provide them with technical assistance to build capacity and to implement freshwater ecosystem restoration solutions in their territory that contribute to achieving the Mission objectives. The technical assistance to the 'associated regions' should include the provision of technical

advisory services necessary to the prepare roadmaps, plans and projects to prevent, eliminate and remediate pollution in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions.

The maximum amount of Financial Support to Third Parties is EUR 100,000 per 'associated region' for the entire duration of the action. Proposals should outline the selection process of the third parties to which financial support would be granted based on principles of transparency, objectivity and fairness.

The proposals should build on research and innovation developed in the frame of related projects in the current and previous EU framework programmes, such as Horizon 2020, including the activities funded under the Green Deal 2020 call, LIFE and national and regional programmes in the Mediterranean sea basin as well as the activities of the Sustainable Blue Economy Partnership²⁶⁷, as the sea basin initiative WestMed²⁶⁸ and the macroregional strategy EUSAIR²⁶⁹, with thematic networks, as well as with the BlueMed Pilot Action on Healthy Plastic Free Mediterranean Sea²⁷⁰, the implementation of the Union for the Mediterranean Ministerial Declaration on Sustainable Blue Economy as well as projects and actions funded under the PRIMA Partnership²⁷¹. Projects may benefit from the expertise and knowledge of the Joint Research Centre, especially in the areas of large scale monitoring and assessment set-up, technical input on harmonised methodologies and making links with relevant policy frameworks.

The proposals will demonstrate novel methods and social innovation practices resulting in holistic socio-ecological governance and management plans that address the transfer of innovative solutions into the market and economic value/supply chains, by creating commercially viable and investable propositions. The proposals need to build in capacity to reach local/regional and national systems of multi-stakeholders and to enhance their interconnections at basin scale. Multi stakeholder engagements will require active participation from academia to research performing organisations, from citizens to civil society, from young innovators to start-ups, industry, SMEs and other businesses. Activities focused on citizen engagement should also be gender-responsive and include groups at risk of social exclusion to promote a wider uptake of the developed solutions, where relevant.

The projects funded under this topic will address all following issues:

- build links with other Mission activities and other relevant activities within the lighthouse and its area to maximize synergies, as well as with the European Blue Parks, other Mission lighthouses;
- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the Mediterranean sea basin

²⁶⁷ <https://www.jpi-oceans.eu/climate-neutral-sustainable-and-productive-blue-economy>

²⁶⁸ <https://www.westmed-initiative.eu/?lang=fr>

²⁶⁹ <https://www.adriatic-ionic.eu/>

²⁷⁰ <http://www.blumed-initiative.eu/>

²⁷¹ [Home - PRIMA \(prima-med.org\)](https://www.prima-med.org/).

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lighthouse support facility and platform, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouse area as well as with the Blue Parks technical support platform;

- support the Ocean and water knowledge system, in particular by contributing to monitoring, modelling and knowledge creation and data.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

HORIZON-MISS-2021-OCEAN-03-02: Mediterranean sea basin lighthouse – coordination activities

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Award criteria</i>	The criteria are described in General Annex D. The following exceptions apply: The following additions to the general award criteria apply: The capacity of the proposed approach to systematically link up, coordinate and network with projects under future Work programme topics to ensure effective project portfolio management within the area of the Mission lighthouse throughout the lifetime of the Mission. This is necessary to ensure effective coordination within the Mission lighthouse as a part of the portfolio management of the Mission.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Grants awarded under this topic will be linked to the following action(s): HORIZON-MISS-2021-OCEAN-03-01: Mediterranean sea basin lighthouse - actions to prevent, minimise and remediate litter and plastic pollution
<i>Evaluation and award procedure</i>	The evaluation committee will be composed partially by representatives of EU institutions.

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

- Structuring effect to consolidate and engage a wide community of relevant stakeholders across the Mediterranean sea basin able to ensure an effective governance structure for the achievement of the Mission objectives;
- An effective governance structure ensuring coherence and alignment of policies, initiatives and actions at EU, national and local level;
- Well-coordinated activities underpinned by a consistent monitoring framework to assess the implementation and achievement of the Mission objectives;
- Effective provision of technical services, governance and business models to support and guarantee a sustainable socio-economic development of the Mediterranean sea basin;
- Well-functioning basin scale innovation ecosystem attractive to investors and businesses;
- Increased awareness about the Mission and involvement of citizens in its implementation in the Mediterranean sea basin and beyond.

Scope: The Mission Ocean, seas and water WP part under Horizon Europe, defines “lighthouses” as “*hubs and platforms supporting the development and deployment of transformative innovative solutions in all forms – technological, social, business, governance, ensuring fast progress towards the achievement of Mission objectives and important impact on society in the river and sea basins through science and technology*”. The Mission lighthouse should adhere to the lighthouse implementation charter, ensuring its political commitment to the implementation of the lighthouse.

Proposals under this topic will bring together complementary public and/or private organisations and networks, and integrate heterogeneous expertise to support the rolling out of a “lighthouse” within Mediterranean sea basin and provide a broad portfolio of services ensuring the development and deployment of innovative solutions addressing the objectives of the Mission Ocean, seas and waters in the lighthouse area.

Building on and bringing together existing governance structures and networks and relevant existing activities, proposals are expected to address all following activities:

- *Mediterranean sea basin lighthouse governance and networking*: liaise with the Mission secretariat²⁷² to ensure a coherent and timely implementation of the Mission in the lighthouse area; contribute to the implementation of lighthouse charter, consisting in a political commitment of MSs/ACs, regions and, whenever relevant, of third countries and other stakeholders, for instance through workshops and other gatherings, networking

²⁷² Mission secretariat consisting of European Commission staff, is located within the European Commission services and is managed by the Mission Manager, for details on Mission governance see Commission Decision C(2021) 4472 final of 24.06.2021.

and provide support actions initiated or carried out by the European Commission services to establish the lighthouse implementation charters; set-up and support and effective and participatory governance structure Mediterranean sea basin lighthouse involving key players (public and private entities, including SMEs, civil society organisations as well as citizen representatives/citizen assemblies and local communities) at basin level and ensure cooperation and networking of stakeholders for achieving the three objectives²⁷³ of the Mission Ocean, seas and waters; provide networking opportunities and exchanges of good practices within Mediterranean sea basin and with other HE Missions and HE Partnerships; liaise and network with other Mission lighthouses to ensure exchanges of good practices and sharing of innovative solutions (cross-fertilisation); liaise with relevant projects implemented by other Missions in the lighthouse area and ensure exchanges of good practices; support the alignment of Regional Smart Specialisation Strategies and Next Generation EU initiatives and projects with the Mission objectives and explore synergies between the Mission and Smart Specialisation strategies and Next Generation EU initiatives and projects;

- *Communication, monitoring and contribution to overall Mission implementation*: design and carry out at basin scale communication actions to promote Mission Ocean, seas and waters and its activities targeting different stakeholders and the general public, both at basin scale and at the regional/local level including in the ‘associated regions’²⁷⁴; contribute to monitoring of Mission implementation in the lighthouse area (including a liaison with projects under Mission lighthouse topic HORIZON-MISS-2021-OCEAN-03-01: Mediterranean sea basin lighthouse - actions to prevent, minimise and remediate litter and plastic pollution and provide relevant information and data to the Mission Implementation Platform (see Other actions, Public Procurements, topic Mission Ocean, seas and waters implementation support platform – overall Mission coordination and monitoring; European Blue parks technical assistance; citizen engagement; communication); carry out quantitative and qualitative analysis and studies in relation to the Mission and other relevant activities implemented at basin level; liaise with the Mission Implementation Platform to ensure coherent and timely implementation of the Mission in the lighthouse area;
- *Develop and foster Mediterranean sea basin innovation ecosystem*: identify R&I needs at basin level; liaise with the ocean and water knowledge system and foster sharing of observation data, information and computing toolboxes; disseminate and raise awareness about suitable innovative solutions to address these needs, (at least 2 dissemination activities per year at a basin level); organise demonstration and testing activities for the innovative solutions (at least 2 activities per year implemented within the basin area);

²⁷³ Mission Ocean, seas and waters objectives: 1) Protect and restore marine and freshwater ecosystems and biodiversity; 2) Prevent and eliminate pollution of our oceans, seas and waters; 3) Sustainable, carbon-neutral and circular Blue economy.

²⁷⁴ For the concept and role of “associated region” please see topic HORIZON-MISS-2021-OCEAN-03-01: Mediterranean sea basin lighthouse - actions to prevent, minimise and remediate litter and plastic pollution

support access to finance and mobilise suitable investors, through e.g.: pitching events, networks of investors, venture capital funds, local Entrepreneurial Discovery processes, etc.; support knowledge and technology transfer, including through training and skill development (at least 2 activities per year at a basin level); support cooperation of lighthouse projects with ‘associated regions’²⁷⁵;

- *Support mission implementation with technical expertise and know-how*: develop a coherent catalogue of services providing (on-site or remote) technical expertise and know-how for testing, validating, scaling-up, reproducing, customising and deploying innovative solutions under the lighthouse objective, ensuring interoperability with the Ocean and water knowledge system; develop, make publicly available and curate a catalogue of projects and initiatives funded at EU, national and regional level and to the extent possible, include also privately funded initiatives and projects.

Proposals should include an outreach plan to actively advertise its activities and services to the citizens and local communities and to targeted stakeholders, including to relevant industries and SMEs.

Proposals are expected to build on and integrate all relevant existing governance structures, networks and capacities within the Mediterranean sea basin, such as the Union for Mediterranean ²⁷⁶, the BlueMed initiative ²⁷⁷, the UNEP-MAP ²⁷⁸, the macroregional strategy EUSAIR ²⁷⁹ with a view of ensuring comprehensive and inclusive lighthouse governance.

Due to the transboundary nature of waters, basin-scale coordination and cooperation across regions, is required for solutions to be effectively implemented and to resolve shared problems.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

Call - Sustainable, carbon-neutral and circular Blue economy

HORIZON-MISS-2021-OCEAN-04

Conditions for the Call

Indicative budget(s)²⁸⁰

²⁷⁵ For the concept and role of “associated region” please see topic HORIZON-MISS-2021-OCEAN-03-01: Mediterranean sea basin lighthouse - actions to prevent, minimise and remediate litter and plastic pollution

²⁷⁶ <https://ufmsecretariat.org/>

²⁷⁷ <http://www.bluedmed-initiative.eu/>

²⁷⁸ <https://www.unep.org/uneppmap>

²⁷⁹ <https://www.adriatic-ionician.eu/>

²⁸⁰ 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.

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Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ²⁸¹	Number of projects expected to be funded
		2021		
Opening: 22 Dec 2021 Deadline(s): 12 Apr 2022				
HORIZON-MISS-2021-OCEAN-04-01	IA	16.00 ²⁸²	Around 8.00	2
HORIZON-MISS-2021-OCEAN-04-02	CSA	3.00 ²⁸³	Around 3.00	1
Overall indicative budget		19.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.

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 years 2021 and 2022.

²⁸¹ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

²⁸² Of which EUR 3.81 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.68 million from the 'Digital, Industry and Space' budget and EUR 0.40 million from the 'Civil Security for Society' budget and EUR 9.90 million from the 'Climate, Energy and Mobility' budget and EUR 0.21 million from the 'Culture, creativity and inclusive society' budget.

²⁸³ Of which EUR 0.71 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.31 million from the 'Digital, Industry and Space' budget and EUR 0.08 million from the 'Civil Security for Society' budget and EUR 1.86 million from the 'Climate, Energy and Mobility' budget and EUR 0.04 million from the 'Culture, creativity and inclusive society' budget.

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<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.
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Proposals for topics under objective 3 - Sustainable, carbon-neutral and circular Blue economy should set out a credible pathway for the Mission Ocean, seas and waters objectives, and contributing more specifically to the following impacts:

- Eliminate greenhouse gas emissions from maritime economic activities in the EU and sequester those emissions that cannot be avoided (net zero maritime emissions);
- Develop zero-carbon and low-impact aquaculture, and promote circular, low-carbon multi-purpose use of marine and water space, thus contributing to the EU Circular Economy Action Plan;
- Provide evidence for new legislation and the implementation of the existing ones legislation and policies;
- Support international cooperation among countries, regions and other actors to enable global transformative changes for our society and economy needed to achieve the European Green Deal's climate and the Sustainable Blue economy Strategy objectives.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-OCEAN-04-01: Lighthouse in the Baltic and the North Sea basins - Low impact marine aquaculture and multi-purpose use of marine space

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 16.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: In addition to the standard eligibility conditions, the consortium must involve and include partners from at least three countries of the Baltic and North sea basin in which demonstration activities will be taking place.
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 5 to 7 by the end of the project – see General Annex B.

<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Beneficiaries may provide financial support to third parties.</p> <p>The support to third parties can only be provided in the form of grants.</p> <p>The financial support to third parties may only be awarded to local and/or regional authorities from an ‘associated region’. The maximum amount to be granted to each “associated region” is EUR 100,000, to showcase the feasibility, replicability and scale up of the solutions developed in the “associated region”²⁸⁴ within the project. Each “associated region” must benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once.</p>
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Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Optimal and carbon-neutral use of marine space in these two European marine areas with high concentration of maritime activities;
- Increased sustainable and environmentally sound aquaculture production, particularly of algae and other low-trophic level aquatic organisms;
- Ensure safety of farmed seafood and increase consumers’ trust;
- Data-based systems enabling a market-wide monitoring and data analysis service for aquaculture;
- Increase share of renewable energy consumption along the full value chain of aquaculture and minimise its dependence on fossil fuel;
- Enhanced knowledge to minimise the carbon footprint and environmental impact of aquaculture;
- Advance professional skills and competences of those working and being trained to work within the blue economy.

Scope: Proposals will show the way to profitable and sustainable seafood farming away from the densely populated coasts of the Baltic Sea and the North Sea. Such farming will not depend on fossil fuels; a focus should be on low trophic level species; increased production will not lead to increased pressure on the ecosystem, therefore will not compromise the achievement of Good Environmental Status. Aquaculture farms will also share space with

²⁸⁴ ‘Associated regions’ are understood as areas with similar ecosystems (e.g. neighbouring regions and/or regions in a different sea basin) and/or less-developed regions, with the view to build capacity to implement the innovative solutions to restore freshwater ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” must benefit from the Financial Support to Third Parties provided under this topic only once.

other offshore economic activities in a synergistic way. Proposals should demonstrate solutions for increasing circularity by the production of low-emission, zero- or low-carbon and toxic-free farming of aquatic organisms in an optimally used marine space. They should test and demonstrate novel aquaculture methods and techniques, spanning from engineering and robotics to breeding, and from spatial planning to a holistic governance of multiple maritime activities. They should include viable concepts for market access and commercial operation, and outreach to consumers and investors, to avoid that innovative solutions stop operating once grant funding stops. Proposals should also explore options for creating eco-friendly and sustainable artificial reefs in or near the wind energy and aquaculture premises, offering suitable habitats and shelter for fish and other biota. Proposals should also work on approaches for efficient and cost-effective monitoring of both the inputs of the aquaculture industry (such as water quality) and its outputs (such as emissions, including the reporting requirements under the United Nations Framework Convention on Climate Change). In particular, proposals should focus specifically on developing data-based management systems that offer services, including risk analysis, to individual aquaculture producers for monitoring and minimizing diseases and alien species, managing inputs, optimizing sustainable production and demand management.

Proposals should include case studies in promising sites both in the Baltic Sea and in the North Sea. At least one case study in each proposal should include a commercially viable pilot farm for seaweeds within wind farms. Additionally, at least one case study in each proposal should include a commercially viable pilot farm for molluscs within wind farms. Additional pilots for farms of other marine organisms are not excluded but are not a requirement, including use of Integrated Multi-Trophic Aquaculture (IMTA). Proposed solutions should be in line with the EU taxonomy regulation and delegated acts.

Proposals must:

- Carry out demonstration activities in 3 different countries of the Baltic and North Sea basin, involving and including in the consortium partners from these three countries;
- Identify areas and locations where the solutions are replicable and draw up an action plan and roadmap to replicate and scale up the pollution solutions and actions.

To address the impact-driven approach of the Mission and the nature of Innovation Actions, proposals are expected to work with and engage at least 5 ‘associated regions’ to showcase the feasibility, replicability and scale up of the solutions developed within the projects in other areas. ‘Associated regions’ are understood as areas with ecosystems that can benefit from the demonstration activities (e.g. neighbouring regions and/or regions in a different sea basin) and/or less-developed regions, with the need to build capacity to implement the innovative solutions for low-impact marine aquaculture and multi-purpose use of marine space in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” must benefit from the Financial Support to Third Parties provided

under this topic only once. The partners will proactively reach out to the associated regions to enable them to follow closely the project and its demonstration activities. The projects should continuously share their outcomes and knowledge with those 'associated regions' and provide them with technical assistance to build capacity and to implement solutions for low-impact marine aquaculture and multi-purpose use of marine space in their territory that contribute to achieving the Mission objectives. The technical assistance to the 'associated regions' should include the provision of technical advisory services necessary to the prepare roadmaps, plans and projects for low-impact marine aquaculture and multi-purpose use of marine space in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions.

The maximum amount of Financial Support to Third Parties is EUR 100,000 per 'associated region' for the entire duration of the action. Proposals should outline the selection process of the third parties to which financial support would be granted based on principles of transparency, objectivity and fairness.

The proposals should build on research and innovation developed in the frame of related projects in the current and previous EU framework programmes, such as Horizon 2020, LIFE, EMFF and its continuation the European Maritime, Fisheries and Aquaculture Fund, and other funding streams as well as national and regional programmes in the Baltic and North sea basins and the activities of the Sustainable Blue Economy Partnership. The proposals will demonstrate novel methods and social innovation practices resulting in holistic socio-ecological governance and management plans. The proposals need to build in capacity to reach local/regional and national systems of multi-stakeholders and to enhance their interconnections at basin scale. Multi stakeholder engagements will require active participation from academia to research performing organisations, from citizens to civil society, from young innovators to start-ups, SMEs and other businesses. Activities focused on citizen engagement should also be gender-responsive and include groups at risk of social exclusion to promote a wider uptake of the developed solutions, where relevant.

The projects funded under this topic will:

- build links with other Mission activities and other relevant activities within the lighthouse and its area to maximize synergies, as well as with the other Mission lighthouses;
- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the Baltic and North sea basin lighthouse support facility and platform, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouse area;
- support the Ocean and water knowledge system, in particular by contributing to monitoring, modelling and knowledge creation and data.

A strong communication component and an active involvement of stakeholders, including from the aquaculture and energy industry, fishers, consumers and NGOs, in a co-creation

approach is essential for the uptake of the produced outputs. Training and education activities should be included. Market analysis and commercialisation strategies (customer identification, distribution, branding etc.) will be a strong asset.

The outcomes should address the European Green Deal²⁸⁵ objectives, the Farm to Fork Strategy for a fair, healthy and environmentally friendly food system²⁸⁶, the EU Bioeconomy Strategy²⁸⁷, the Communication on a new approach for a Sustainable Blue Economy²⁸⁸ and the Guidelines for sustainable and competitive EU aquaculture²⁸⁹, the Marine Strategy Framework Directive²⁹⁰ and the Maritime Spatial Planning Directive²⁹¹.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

HORIZON-MISS-2021-OCEAN-04-02: Baltic and North Sea basin lighthouse – coordination activities

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Award criteria</i>	The criteria are described in General Annex D. The following exceptions apply: The following additions to the general award criteria apply: The capacity of the proposed approach to systematically link up, coordinate and network with projects under future Work programme topics to ensure effective project portfolio management within the area of the Mission lighthouse throughout the lifetime of the Mission. This is necessary to ensure effective coordination within the Mission lighthouse as a part of the portfolio management of the Mission.
<i>Legal and financial</i>	The rules are described in General Annex G. The following exceptions

²⁸⁵ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

²⁸⁶ https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en

²⁸⁷ https://ec.europa.eu/info/research-and-innovation/research-area/environment/bioeconomy/bioeconomy-strategy_en

²⁸⁸ COM/2021/240 final

²⁸⁹ COM/2021/236 final

²⁹⁰ https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm

²⁹¹ https://ec.europa.eu/oceans-and-fisheries/ocean/blue-economy/maritime-spatial-planning_en

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<i>set-up of the Grant Agreements</i>	<p>apply:</p> <p>Grants awarded under this topic will be linked to the following action(s):</p> <p>HORIZON-MISS-2021-OCEAN-04-01: Lighthouse in the Baltic and the North Sea basins – Low-impact marine aquaculture and multi-purpose use of marine space.</p>
<i>Evaluation and award procedure</i>	<p>The evaluation committee will be composed partially by representatives of EU institutions.</p>

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

- Structuring effect to consolidate and engage a wide community of relevant stakeholders across the Baltic and North sea basins able to ensure an effective governance structure for the achievement of the Mission objectives;
- An effective governance structure ensuring coherence and alignment of policies, initiatives and actions at EU, national and local level;
- Well-coordinated activities underpinned by a consistent monitoring framework to assess the implementation and achievement of the Mission objectives;
- Effective provision of technical services, governance and business models to support and guarantee a sustainable socio-economic development of the Baltic and North sea basins;
- Well-functioning basin scale innovation ecosystem attractive to investors and businesses;
- Increased awareness about the Mission and involvement of citizens in its implementation in the Baltic and North sea basins and beyond.

Scope: The Mission Ocean, seas and water WP part under Horizon Europe, defines “lighthouses” as “*hubs and platforms supporting the development and deployment of transformative innovative solutions in all forms – technological, social, business, governance, ensuring fast progress towards the achievement of Mission objectives and important impact on society in the river and sea basins through science and technology*”. The Mission lighthouse should adhere to the lighthouse implementation charter, ensuring its political commitment to the implementation of the lighthouse.

Proposals under this topic will bring together complementary public and/or private organisations and networks, and integrate heterogeneous expertise to support the rolling out of a “lighthouse” within Baltic and North sea basins and provide a broad portfolio of services ensuring the development and deployment of innovative solutions addressing the objectives of the Mission Ocean, seas and waters in the lighthouse area.

Building on and bringing together existing governance structures and networks and relevant existing activities, proposals are expected to address all following activities:

- *Baltic and North sea basins lighthouse governance and networking*: liaise with the Mission secretariat²⁹² to ensure a coherent and timely implementation of the Mission in the lighthouse area; contribute to the implementation of the lighthouse charter, consisting in a political commitment of MSs/ACs, regions and, whenever relevant, of third countries and other stakeholders, for instance through workshops and other gatherings, networking and provide support actions initiated or carried out by the European Commission services to establish the lighthouse implementation charters; set-up and support and effective and participatory governance structure for the Baltic and North Sea basins lighthouse involving key players (public and private entities, including SMEs, civil society organisations as well as citizen representatives/citizen assemblies and local communities) at basin level and ensure cooperation and networking of stakeholders for achieving the three objectives²⁹³ of the Mission Ocean, seas and waters; provide networking opportunities and exchanges of good practices within the Baltic and North sea basins and with other HE Missions and HE Partnerships; liaise and network with other Mission lighthouses to ensure exchanges of good practices and sharing of innovative solutions (cross-fertilisation); liaise with relevant projects implemented by other Missions in the lighthouse area and ensure exchanges of good practices; support the alignment of Regional Smart Specialisation Strategies and Next Generation EU initiatives and projects with the Mission objectives and explore synergies between the Mission and Smart Specialisation strategies and Next Generation EU initiatives and projects;
- *Communication, monitoring and contribution to overall Mission implementation*: design and carry out at basin scale communication actions to promote Mission Ocean, seas and waters and its activities targeting different stakeholders and the general public, both at basin scale and at the regional/local level including in the ‘associated regions’²⁹⁴; contribute to monitoring of Mission implementation in the lighthouse area (including a liaison with projects under Mission lighthouse topic HORIZON-MISS-2021-OCEAN-04-01: Lighthouse in the Baltic and the North Sea basins – Low-impact marine aquaculture and multi-purpose use of marine space) and provide relevant information and data to the Mission Implementation Platform (see Other actions, Public procurements, topic Mission Ocean, seas and waters implementation support platform – overall Mission coordination and monitoring; European Blue parks technical assistance; citizen engagement; communication); carry out quantitative and qualitative analysis and

²⁹² Mission secretariat consisting of European Commission staff, is located within the European Commission services and is managed by the Mission Manager, for details on Mission governance see Commission Decision C(2021) 4472 final of 24.06.2021

²⁹³ Mission Ocean, seas and waters objectives: 1) Protect and restore marine and freshwater ecosystems and biodiversity; 2) Prevent and eliminate pollution of our oceans, seas and waters; 3) Sustainable, carbon-neutral and circular Blue economy.

²⁹⁴ For the concept and role of “associated region” please see topic HORIZON-MISS-2021-OCEAN-04-01: Lighthouse in the Baltic and the North Sea basins – Low-impact marine aquaculture and multi-purpose use of marine space.

studies in relation to the Mission and other relevant activities implemented at basin level; liaise with the Mission Implementation Platform to ensure coherent and timely implementation of the Mission in the lighthouse area;

- *Develop and foster Baltic and North sea basins innovation ecosystem*: identify R&I needs at basin level; liaise with the ocean and water knowledge system and foster sharing of observation data, information and computing toolboxes; disseminate and raise awareness about suitable innovative solutions to address these needs, (at least 2 dissemination activities per year at a basin level); organise demonstration and testing activities for the innovative solutions (at least 2 activities per year implemented within the basin area); support access to finance and mobilise suitable investors, through e.g.: pitching events, networks of investors, venture capital funds, local Entrepreneurial Discovery processes, etc.; support knowledge and technology transfer, including through training and skill development (at least 2 activities per year at a basin level); support cooperation of lighthouse projects with ‘associated regions²⁹⁵’;
- *Support mission implementation with technical expertise and know-how*: develop a coherent catalogue of services providing (on-site or remote) technical expertise and know-how for testing, validating, scaling-up, reproducing, customising and deploying innovative solutions under the lighthouse objective, ensuring interoperability with the Ocean and water knowledge system; develop, make publicly available and curate a catalogue of projects and initiatives funded at EU, national and regional level and to the extent possible, include also privately funded initiatives and projects;

Proposals should include an outreach plan to actively advertise its activities and services to the citizens and local communities and to targeted stakeholders, including to relevant industries and SMEs.

Proposals are expected to build on and integrate all relevant existing governance structures, networks and capacities within the Baltic and North sea basins, such as organisations involved in HELCOM, OSPAR, BONUS, BANOS, EU Macroregional Strategy for the Baltic sea, Arctic and Baltic Ocean Monitoring and Forecasting Centre²⁹⁶, with a view of ensuring comprehensive and inclusive lighthouse governance.

Due to the transboundary nature of waters, basin-scale coordination and cooperation across regions, is required for solutions to be effectively implemented and to resolve shared problems.

²⁹⁵ For the concept and role of “associated region” please see topic HORIZON-MISS-2021-OCEAN-04-01: Lighthouse in the Baltic and the North Sea basins – Low-impact marine aquaculture and multi-purpose use of marine space.

²⁹⁶ [OSPAR Commission | Protecting and conserving the North-East Atlantic and its resources](#), [HELCOM, About us - Bonus EEIG \(bonusportal.org\)](#), [BANOS CSA - Bonus EEIG](#), [EU Strategy for the Baltic Sea Region - Regional Policy - European Commission \(europa.eu\)](#), [Arctic – Monitoring Forecasting Centre \(ARCMFC\) | CMEMS \(copernicus.eu\)](#).

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Proposals are expected to show how their activities and results will achieve the Mission's objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the 'development and piloting' phase and 2030 for the 'deployment and upscaling phase'.

Call - Mission Enabling activities: Digital knowledge system, public mobilisation and engagement, dynamic investment ecosystem

HORIZON-MISS-2021-OCEAN-05

Conditions for the Call

Indicative budget(s)²⁹⁷

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ²⁹⁸	Number of projects expected to be funded
		2021		
Opening: 22 Dec 2021 Deadline(s): 12 Apr 2022				
HORIZON-MISS-2021-OCEAN-05-01	IA	7.00 ²⁹⁹	Around 7.00	1
HORIZON-MISS-2021-OCEAN-05-02	RIA	1.00 ³⁰⁰	Around 1.00	1
HORIZON-MISS-2021-OCEAN-05-03	CSA	1.00 ³⁰¹	Around 1.00	1
Overall indicative budget		9.00		

²⁹⁷ 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 years 2021 and 2022.

²⁹⁸ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

²⁹⁹ Of which EUR 1.67 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.73 million from the 'Digital, Industry and Space' budget and EUR 0.18 million from the 'Civil Security for Society' budget and EUR 4.33 million from the 'Climate, Energy and Mobility' budget and EUR 0.09 million from the 'Culture, creativity and inclusive society' budget.

³⁰⁰ Of which EUR 0.24 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.10 million from the 'Digital, Industry and Space' budget and EUR 0.62 million from the 'Climate, Energy and Mobility' budget and EUR 0.03 million from the 'Civil Security for Society' budget and EUR 0.01 million from the 'Culture, creativity and inclusive society' budget.

³⁰¹ Of which EUR 0.24 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.10 million from the 'Digital, Industry and Space' budget and EUR 0.03 million from the 'Civil Security for Society' budget and EUR 0.62 million from the 'Climate, Energy and Mobility' budget and EUR 0.01 million from the 'Culture, creativity and inclusive society' budget.

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

Proposals for topics under enabling activities should set out a credible pathway for the achievement of the objectives of the Mission Ocean, seas and waters, and contribute more specifically to all following impacts:

- Boost the R&I capacities and knowledge in the marine and freshwater domains including a better understanding of social and economic implications;
- Increase observation and monitoring capacity, integrate data and modelling;
- Increase citizen participation and engagement in the transformations needed to achieve the European Green Deal objectives;
- Enhance cooperation at international level to address global challenges to the ocean, seas and waters;
- Enhance competitiveness of the European sustainable Blue economy sectors and contribute through investments, smart specialization approach and interregional partnerships into novel solutions underpinning their transformation towards sustainability, circularity and climate-neutrality;
- Provide evidence for policy-making;
- Support cooperation among countries, regions and other actors to enable transformative changes for our society and economy needed to achieve the European Green Deal objectives.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-OCEAN-05-01: Underlying models for the European Digital Twin Ocean

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 7.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>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).</p> <p>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p>
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 6 to 8 by the end of the project – see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Grants awarded under this topic will be linked to the following action(s):</p> <ul style="list-style-type: none"> • LC-GD-9-3-2020 (Iliad, action number 101037643) • HORIZON-MISS-2021-OCEAN-05-01: Underlying models for the European Digital Twin Ocean • HORIZON-INFRA-2022-EOSC-01-03: FAIR and open data sharing in support of healthy oceans, seas, coastal and inland waters <p>Grants awarded under this topic will be linked to the following action(s):</p> <p>EU Public Infrastructure for the European Digital Twin Ocean - under Other Actions "Grants to identified beneficiaries"</p>

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

- A suite of models, including at least a high-resolution global ocean circulation model and coastal models at the land-sea interface ready for configuration and simulation;
- Interoperable standards and APIs so that the twin models can be interfaced with Copernicus models (coupling, forcing, boundary conditions, ...) or external models (hybrid twins) and run in conjunction;
- Enhanced on-demand ocean forecasting and ocean climate prediction capacities;
- Scientific toolboxes to be used in a (co-)working virtual environment;
- Improved capability to support EU legislation on the marine environment;
- Capacity to support the three priorities of the Mission (biodiversity, zero pollution, zero carbon) and supporting the lighthouses;
- A sustainable and integrated set of models and services that contribute to and benefit from developments in the Digital Europe Programme, contributing to Destination Earth;
- Significant contribution to the UN Decade of Ocean Science for Sustainable Development.

The outputs of the project should rely on the state of art of science in ocean modelling and digital tools, existing assets at EU level (e.g. from EuroGOOS, Copernicus, EMODnet, Regional Sea Conventions, etc.) and EU and international data management standards.

Scope: The objective is to prepare the next generation of EU digital ocean models (Twin Ocean) complementary to the Copernicus marine service. They should be integrated into the architecture of the European Digital Twin Ocean, a public infrastructure (linked action with topic “EU Public Infrastructure for the European Digital Twin”: EU Public Infrastructure for the European Digital Twin Ocean, included under Other actions) to ensure access to required input and validation data (e.g. from EMODnet, EuroGOOS etc.), high performance and distributed cloud computing facilities. It will support the development of the Mission lighthouses and will be aligned with developments of Destination Earth under the Digital Europe programme. Projects may benefit from the experience and knowledge of the Joint Research Centre in the areas of marine ecosystem modelling at European scale that is supporting impact assessments by dedicated scenario simulations linked with policy frameworks.

The project should address all activities and tasks as described below, in cooperation and complementarity with the linked action³⁰² and other relevant actions:

³⁰² linked action with topic “EU Public Infrastructure for the European Digital Twin Ocean”, included under Other actions of this Call

1. Ocean twin: The project should develop the reference models suite for the European Digital Twin Ocean and should include:

- the preparation and development of model and data assimilation schemes, enabling simulation and development of what-if scenarios based on, but not be limited to, a global high-resolution kilometric ocean physics model from the IMMERSE project³⁰³, that complement the Copernicus forecasting capacities and support on-demand simulation services;
- a suite of configurable coastal models to reach the local scale, as part of the twin ocean suite or the toolkit (see below) in line with state-of-art science proposed in the UN Decade of Ocean Science.

The project should ensure that these models can be used coupled with biogeochemistry, marine ecosystem models (including higher trophic layers) and other integrated models of the marine environment/human activities, etc., used already by policymakers and their scientific advisors. It should be based on state-of-art science, bringing significant innovation to existing EU programmes modelling capacities in support to policy making and implementation (MSFD, Habitats Directive, Common Fisheries Policy, etc.).

2. Developer's toolkit: the ocean twin should be complemented with a toolkit to favour its exploitation including by additional models or software following specified quality standards. It should include:

- a scientific software library with open and free, easy-to-use software, models, AI algorithms (e.g.: addressing coastal circulation, particle tracking, aquaculture cultivation and emissions, ecosystems, hydrodynamics, etc.) that can be enriched progressively;
- a virtual development environment, dedicated to scientific validation where groups of users can assess their results, develop validation and product quality campaigns for their models and explore what-if scenarios;
- tools to retrieve data and products in suitable form for producing indicators for EU reporting (e.g.: Application Programming Interfaces for MSFD³⁰⁴, Habitats, Birds directives reporting).

3. Use: The Ocean twin models suite should enable the development of what-if scenarios and simulations to support the Mission Ocean lighthouses. Therefore, it should be demonstrated and validated end-to-end with beta-testers on one what-if scenario in line with the Mission priorities and representative of the complexity of lighthouses.

For all of the above, the proposal should favour access to public-oriented models and algorithms free of licensing restrictions. The necessary service pre-operations, should be put in place including at least an online scientific helpdesk (cascading to Copernicus Marine

³⁰³ <https://immerse-ocean.eu/>

³⁰⁴ Marine Strategy Framework Directive

Service and EMODnet if needed). The project should set up the required scientific governance and technical coordination to link closely with the project related to the twin architecture (topic “EU Public Infrastructure for the European Digital Twin”, linked action, included under Other actions), Copernicus and EMODnet for the implementation, with the other components of the Destination Earth initiative, with the EC/ES Joint Earth System initiative and with the Mission lighthouses to develop fit-for-purpose solutions in the frame of the Mission as well as with projects funded under the Green Deal call in 2020 topic LC-GD-9-3-2020 Towards a digital twin of the ocean. The Mission Implementation Support Platform will support and facilitate synergies between the lighthouses and the European Digital Twin ocean developments and ensure appropriate communication.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

HORIZON-MISS-2021-OCEAN-05-02: The relation of young generations with the sea and water: values, expectations, and engagement

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 1.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 1.00 million.
<i>Type of Action</i>	Research and Innovation Actions

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

- Provide input and evidence-based outcomes for shaping future initiatives, policies and strategies that address societal changes, future needs and expectations of young generations with regard to the sustainability of aquatic ecosystems and enhance ocean literacy among them;
- Better understanding of the connection of young generations with the ocean, seas and waters, ultimately leading to new products and services, thus supporting the innovative potential of marine/maritime related sectors;
- Provide insights and help sketch social interaction blueprints for novel participatory approaches and networking opportunities, aiming to bring the younger generation closer to the sea and water and create or fortify their emotional link with it;
- Contribute to the objectives of the UN Decade of Ocean Science for Sustainable Development.

Scope: A forward-looking perspective (foresight study) on cultural and emotional relations of tomorrow’s generations with the sea and freshwater, based on surveys, testimonies, contributions, observations of and evidence-gathering from this specific social group, would contribute towards shaping transformative marine/maritime policies, guiding future initiatives in this field and allowing innovative solutions for aquatic ecosystems, addressing the future expectations of the youth for them, to surface. The study should be gender and geo-sensitive and consider socio-economic differences and inequalities between certain social groups in its analysis.

Proposals under this topic will address both aspects below:

- Provide an analysis by exploring a future being shaped by changes in our lifestyles and behaviours, climate and environmental concerns and the emergence of new socio-economic values and needs, to better understand the cultural and emotional relation of the next generations with the marine environment and freshwaters;
- identify expectations and develop future perspectives, highlighting their implications for future strategies and policies, socio-economic activities, including education, and future investments; consider different youth variables such as gender, age, ethnicity, education, socio-cultural and geographical aspects, etc.

Proposals should contribute to stimulate thinking and relevant action through the production of an evidence-based study and help reshape and recalibrate initiatives already in the field and future related policies and strategies; interaction with all relevant main marine and freshwater research and innovation stakeholders (public authorities, companies, universities, research facilities, citizens, etc.) and networks or initiatives on the ground, through whose input visions and strategies can emerge and converge, is sought.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

HORIZON-MISS-2021-OCEAN-05-03: Piloting citizen science in marine and freshwater domains

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 1.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 1.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Evaluation and</i>	The evaluation committee will be composed partially by representatives

<i>award procedure</i>

of EU institutions.

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

- Up scaled and continued excellent citizens science initiatives particularly targeting young people in all EU Member States and Associated Countries;
- Increased citizen awareness about the challenges faced by the ocean and waters;
- Mobilised and empowered citizens to take actions to improve the monitoring of the health of the ocean and waters and to act against pollution;
- Promoted digital applications and testing kits enabling citizens to collect data and observations;
- Promoted (digital) data collection and participatory research involving citizens for the monitoring and restoration of ocean and waters;
- Standardised protocols, standardised testing procedures for citizen reporting, and locally-relevant programmes;
- Contribution made to a special data layer for data provided by citizens, including real-time recordings of discharges and levels of pollutants and litter for different sites, to be harmonised and made publicly available through EMODnet and hence the European Digital Twin Ocean, and aligned with the Destination Earth initiative of the Digital Europe programme.

Scope: Proposals should connect EU citizens and local communities with the ocean, seas and waters, facilitate broad ownership and education and co-design the transitions within the communities that will allow the European Green Deal targets to be reached.

Proposals should also help to create a stronger emotional connection between society and aquatic ecosystems and collective responsibility, as well as elicit interest in taking action. To change hearts as well as minds, proposals should develop communication actions to inspire awe and wonder, and connect with the things people deeply value. Actions should seek to address the emotional connection, rather than simply attempting to ‘plug’ the knowledge gap.

Proposals should empower and activate citizens, in particular young people, to take action, promote the practice of social innovation and ocean and water citizen stewardship, where appropriate and possible involving the voluntary European Solidarity Corps³⁰⁵. They should leverage social innovation throughout the co-design, co-development, co-implementation, and co-monitoring of solutions for sustainable use of the ocean and waters. To promote better public understanding and engagement, the project will support education and training activities, and launch regular citizen science campaigns together with the Member States and

³⁰⁵

See [European Solidarity Corps | European Commission \(europa.eu\)](https://european-council.europa.eu/media/en/press-communications/infographic/infographic_european_solidarity_corps_2021-2022.pdf).

Associated countries, building on and enhancing the EU's work to date on ocean literacy. To create stronger public connection and engagement with the ocean and waters, the Mission will draw on the power of arts, media and culture.

Proposals should identify and pilot best practices in citizen science to restore our ocean and waters and how to upscale them across the Member States and Associated Countries. The data collected should support the monitoring requirements under the Water Framework Directive³⁰⁶ and Marine Strategy Framework Directive³⁰⁷ and follow their specific monitoring guidelines. Collected data should be made accessible across Member States and Associated Countries.

Activities should include the development of standardised protocols and standardised testing procedures for citizen reporting, as well as locally relevant programmes to demonstrate their application.

The projects should feed data and knowledge to the Digital Twin Ocean and EMODnet³⁰⁸ and be designed and predispose a data layer fed by citizens' observations to allow for a transfer of scientific findings to policy making at the EU, national and sub-national level.

Proposals should contribute to an increasing understanding about the following issues:

- Effectiveness of citizen science for participatory research and innovation;
- Impact of citizen science campaigns on citizens' behaviour and knowledge and their relation with the ocean and waters;
- potential contributions of specific stakeholders, such as fishermen, sailors, recreational divers, etc.

Differences in gendered behaviour around ecologically conscious and sustainable practices should equally be taken into account and addressed, where appropriate.

Proposals should build on activities implemented by the EU sea basin strategies Atlantic Action Plan 2.0, WestMed Initiative and the Common Maritime Agenda for the Black Sea and respective priorities on Ocean literacy, including those promoted by the Blue Schools initiative. They should create links with macro regional strategies and in particular with their pillars dealing with aquatic environments.

Projects funded under this topic are strongly encouraged to participate in networking and joint activities with other projects funded under other topics in the Mission Ocean, seas and waters as well as in other relevant Missions, as appropriate. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. Of particular importance in this context is topic HORIZON-MISS-2021-CLIMA-02-05: "Local

³⁰⁶ https://ec.europa.eu/environment/water/water-framework/index_en.html

³⁰⁷ https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm

³⁰⁸ <https://emodnet.ec.europa.eu/en>

engagement of citizens in the co-creation of societal transformational change for climate resilience”.

To this extent, proposals should provide for dedicated activities and earmark appropriate resources.

Call - Actions for the implementation of the Mission Restore our ocean and waters by 2030

HORIZON-MISS-2022-OCEAN-01

Conditions for the Call

Indicative budget(s)³⁰⁹

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ³¹⁰	Number of projects expected to be funded
		2022		
Opening: 12 May 2022 Deadline(s): 27 Sep 2022				
HORIZON-MISS-2022-OCEAN-01-01	IA	17.00 ³¹¹	Around 8.50	2
HORIZON-MISS-2022-OCEAN-01-02	IA	17.00 ³¹²	Around 8.50	2
HORIZON-MISS-2022-OCEAN-01-03	IA	17.00 ³¹³	Around 8.50	2

³⁰⁹ 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 years 2021 and 2022.

³¹⁰ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

³¹¹ Of which EUR 3.12 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.31 million from the 'Digital, Industry and Space' budget and EUR 0.36 million from the 'Civil Security for Society' budget and EUR 10.83 million from the 'Climate, Energy and Mobility' budget and EUR 0.38 million from the 'Culture, creativity and inclusive society' budget.

³¹² Of which EUR 3.12 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.31 million from the 'Digital, Industry and Space' budget and EUR 10.83 million from the 'Climate, Energy and Mobility' budget and EUR 0.36 million from the 'Civil Security for Society' budget and EUR 0.38 million from the 'Culture, creativity and inclusive society' budget.

³¹³ Of which EUR 3.12 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.31 million from the 'Digital, Industry and Space' budget and EUR 0.36 million from the 'Civil Security for Society' budget and EUR 10.83 million from the 'Climate, Energy and Mobility' budget and EUR 0.38 million from the 'Culture, creativity and inclusive society' budget.

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HORIZON-MISS-2022-OCEAN-01-04	IA	10.00 ³¹⁴	Around 10.00	1
HORIZON-MISS-2022-OCEAN-01-05	IA	10.00 ³¹⁵	Around 2.50	4
HORIZON-MISS-2022-OCEAN-01-06	IA	17.00 ³¹⁶	Around 8.50	2
HORIZON-MISS-2022-OCEAN-01-07	IA	10.00 ³¹⁷	Around 10.00	1
HORIZON-MISS-2022-OCEAN-01-08	CSA	3.00 ³¹⁸	Around 3.00	1
HORIZON-MISS-2022-OCEAN-01-09	CSA	2.00 ³¹⁹	Around 2.00	1
HORIZON-MISS-2022-OCEAN-01-10	CSA	3.00 ³²⁰	Around 1.00	3
Overall indicative budget		106.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and</i>	The criteria are described in General Annex

³¹⁴ Of which EUR 1.84 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.36 million from the 'Digital, Industry and Space' budget and EUR 0.21 million from the 'Civil Security for Society' budget and EUR 6.37 million from the 'Climate, Energy and Mobility' budget and EUR 0.22 million from the 'Culture, creativity and inclusive society' budget.

³¹⁵ Of which EUR 1.84 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.36 million from the 'Digital, Industry and Space' budget and EUR 0.21 million from the 'Civil Security for Society' budget and EUR 6.37 million from the 'Climate, Energy and Mobility' budget and EUR 0.22 million from the 'Culture, creativity and inclusive society' budget.

³¹⁶ Of which EUR 3.12 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.31 million from the 'Digital, Industry and Space' budget and EUR 0.36 million from the 'Civil Security for Society' budget and EUR 10.83 million from the 'Climate, Energy and Mobility' budget and EUR 0.38 million from the 'Culture, creativity and inclusive society' budget.

³¹⁷ Of which EUR 1.84 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.36 million from the 'Digital, Industry and Space' budget and EUR 0.21 million from the 'Civil Security for Society' budget and EUR 6.37 million from the 'Climate, Energy and Mobility' budget and EUR 0.22 million from the 'Culture, creativity and inclusive society' budget.

³¹⁸ Of which EUR 0.55 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.41 million from the 'Digital, Industry and Space' budget and EUR 0.06 million from the 'Civil Security for Society' budget and EUR 1.91 million from the 'Climate, Energy and Mobility' budget and EUR 0.07 million from the 'Culture, creativity and inclusive society' budget.

³¹⁹ Of which EUR 0.37 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.27 million from the 'Digital, Industry and Space' budget and EUR 0.04 million from the 'Civil Security for Society' budget and EUR 1.27 million from the 'Climate, Energy and Mobility' budget and EUR 0.04 million from the 'Culture, creativity and inclusive society' budget.

³²⁰ Of which EUR 0.55 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.41 million from the 'Digital, Industry and Space' budget and EUR 0.06 million from the 'Civil Security for Society' budget and EUR 1.91 million from the 'Climate, Energy and Mobility' budget and EUR 0.07 million from the 'Culture, creativity and inclusive society' budget.

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<i>exclusion</i>	C.
<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Objective 1 - Protect and restore marine and freshwater ecosystems and biodiversity

Proposals under this heading are expected to show how their activities and results will achieve the Mission objective 1, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’. In line with the conclusions of the informal European summit of 10 March 2022, the participation of researchers of Ukrainian nationality who have received a temporary protection status in the European Union is encouraged.

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-OCEAN-01-01: European Blue Parks – Protection and restoration solutions for degraded coastal and marine habitats

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 8.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 17.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	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).
<i>Technology</i>	Activities are expected to achieve TRL 5 to 7 by the end of the project –

<i>Readiness Level</i>	see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Beneficiaries will be subject to the following additional obligations regarding open science practices: If projects collect in-situ data and marine observations, beneficiaries must make them openly available through the European Marine Observation and Data network (EMODnet), based on FAIR (findable, accessible, interoperable, reusable) principles

Expected Outcome: In support of the implementation of the European Green Deal and the Biodiversity Strategy, project results are expected to contribute to all of the following expected outcomes:

- Protected, restored and sustainably used and managed marine biodiversity, blue natural capital, marine and coastal ecosystems;
- Reinforced ecosystem services from restored and protected marine areas;
- Seabed protection and restoration solutions, including to preserve seabed carbon sequestration capacity;
- Socio-economic transition processes through innovative solutions for ecosystem-based management of marine protected areas;
- Enhanced resilience of coastal and marine ecosystems;
- A blueprint for the extension of marine protected areas and/or for the shift of their status from “protected” to “strictly protected”;
- A blue print for the identification of ecological corridors as part of a blue Trans-European Nature Network, and a strategy to build such a network;
- Contribution to the Mission’s Digital Ocean and Water Knowledge system through marine observations and open data and knowledge sharing ;
- Reinforced EU leadership in international efforts to combat biodiversity loss, in line with the EU key priorities and international commitments, including through the protection, conservation, restoration and sustainable use of marine ecosystems and biodiversity.

Scope: Proposals under this topic will address the degradation of coastal and marine habitats, including degraded seabed habitats and will develop and demonstrate protection and restoration solutions to upgrade and enhance the EU's blue natural capital.

Innovation actions have to show the potential to be up-scaled and reproduced at European level and beyond.

Proposals are expected to duly address the connection between marine ecosystems, including seabed habitats, and their biodiversity. Nevertheless, in exceptional cases, proposals may address either specific vulnerable species or habitats that are under strong pressures or that have the most potential to capture and store carbon. Proposals should be site-specific and the scale and range of the sites for demonstration activities has to be ecologically relevant and impactful and show a significant replication potential.

When identifying and restoring degraded areas, particular attention needs to be paid to ensuring that ecosystem services these areas can provide, are resilient to climate change.

The proposals should also address the creation and long term maintenance of adequate conditions for habitats and/or for the movement of species and more generally, for increasing nature's capacity to adapt to climate change.

The proposed innovation actions for the Blue Parks will seek the most effective and efficient protection and restoration measures, tailored to the specific biogeographical area or marine region. Activities leading to the creation of protected areas should concentrate on areas of high biodiversity value or potential³²¹ and be consistent with the EU Guidance to Member States on the designation of additional protected or strictly protected areas³²².

Proposals must cover a wide range of ecosystem functions and services using a coherent and systemic approach and avoid the risk of trade-offs of focusing on one or very few ecosystem services at the expense of others. In this respect, seabed protection and restoration should be integrated, including preservation of seabed carbon sequestration capacity.

The involvement of national and local authorities and coastal communities will be required in order to ensure that the solutions designed are best suited, co-created and with the necessary ownership for their successful implementation. Citizen engagement is a pillar concept for the Mission and a key element in relation to conservation and restoration actions. Activities should, therefore, use innovative co-creation management practices and awareness-raising actions to promote a proactive involvement of local communities including land and sea use planners, Marine Protected Area managers, and other stakeholders, in order to allowing for co-creation of solutions. Awareness raising actions to inspire and generate co-ownership for protection of local habitat and biodiversity should be included as well as partnerships and coalitions with existing initiatives. Proposals could include blue reforestation activities with suitable aquatic plants in degraded habitats. Citizen engagement related activities should also be gender-responsive and socially inclusive.

Proposals are expected to contribute to the implementation of the existing legislation, notably in relation to Marine Protected Areas, identifying limiting factors and gaps as well as recommendations addressing environmental or anthropogenic pressures.

Proposals should build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the Blue Parks technical

³²¹ For example, significant areas of carbon-rich ecosystems should be strictly protected.

³²²

support platform for reporting, monitoring and coordination of all relevant implementation activities. In this regard, projects should cooperate closely with projects funded under Mission Ocean topic HORIZON-MISS-2021-OCEAN-02-01: European Blue Parks.

Proposals will build upon existing knowledge systems and upon the Mission Digital and Water Knowledge system for access to data, monitoring and forecasts and knowledge dissemination. . The proposals should also build on research and innovation developed in the frame of related projects in the current and previous EU framework programmes, such as but not limited to Horizon 2020, LIFE, EMFF/EMFAF and national and regional programmes as well as the activities of the Sustainable Blue Economy Partnership and the Biodiversa+ Partnership³²³.

Projects funded under this topic would benefit from cooperation, networking and exchanges of information with the projects funded under other Cluster 6 topics: HORIZON-CL6-2021-BIODIV-01-12 (Improved science based maritime spatial planning and identification of marine protected areas), HORIZON-CL6-2021-BIODIV-01-10 (Demonstration of measures and management for coastal and marine ecosystems restoration and resilience in simplified socio-ecological systems); 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-CLIMATE-01-02: Understanding the oceanic carbon cycle as well as with activities supported under the H2020 Green Deal call, notably LC-GD-7-1- 2020 Restoring biodiversity and ecosystem services.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

HORIZON-MISS-2022-OCEAN-01-02: Danube river basin lighthouse – Protection and restoration of wetlands, flood plains, coastal wetlands and salt marshes and their biodiversity

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 8.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 17.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility</i>	The conditions are described in General Annex B. The following

³²³

[BiodivERs A: European Biodiversity Partnership: Biodiversa+.](#)

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<i>conditions</i>	<p>exceptions apply:</p> <p>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).</p> <p>The following additional eligibility criteria apply: In addition to the standard eligibility conditions, the consortium must involve and include entities from at least three Member States and/or Associated Countries of the Danube river basin in which demonstration activities will be taking place.</p>
<i>Technology Readiness Level</i>	<p>Activities are expected to achieve TRL 5 to 7 by the end of the project – see General Annex B.</p>
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Beneficiaries will be subject to the following additional obligations regarding open science practices: If projects collect in-situ data and marine observations, beneficiaries must make them openly available through the European Marine Observation and Data network (EMODnet), based on FAIR (findable, accessible, interoperable, reusable) principles</p> <p>Beneficiaries may provide financial support to third parties. Support to third parties can only be provided in the form of grants. Financial support to third parties may only be awarded to local and/or regional authorities from an ‘associated region’. The maximum amount to be granted to each “associated region” is EUR 100,000, to showcase the feasibility, replicability and scale up of the solutions developed within the project in the “associated region”³²⁴. Each “associated region” shall benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once.</p>

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

- Contribute to the European Green Deal, the EU Biodiversity Strategy, the EU Zero Pollution Action Plan and the Water Framework Directive as well as other EU instruments and policies that concern freshwater ecosystem protection;

³²⁴ ‘Associated regions’ are understood as areas with similar ecosystems (e.g. neighbouring regions and/or regions in a different river basin) and/or less-developed regions, with the view to build capacity to implement the innovative solutions to restore freshwater ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” shall benefit from the Financial Support to Third Parties provided under this topic only once.

- Contribute to the implementation of the protection and restoration of wetlands, flood plains and coastal wetlands and salt marshes under the 1971 Ramsar Convention on Wetlands of International Importance³²⁵;
- Reverse the deterioration of the state of wetlands, flood plains coastal wetlands and salt marches in the Danube river basin and in the adjacent Black Sea area, including by developing solutions to restore lateral connectivity of rivers with their associated floodplains and wetlands;
- Improve protection of local communities and ecosystems from extreme events (flood, droughts, storms) in the Danube river basin and its delta, in particular with nature based solutions linked to wetlands, flood plains, coastal wetlands and salt marshes;
- Improved monitoring of carbon sequestration capacity of wetlands and coastal wetlands and salt marshes and about the impacts of the changing climate system and different management methods on the capacity of these ecosystems to sequester carbon;
- Support the scaling up of wetlands, flood plains and coastal wetlands and salt marshes ecosystems and biodiversity restoration in the ‘associated regions’;
- Increased share of local revenue and business activities from the restored and protected wetlands, flood plains, coastal wetlands and salt marshes ecosystems in the overall local economic activities.

Scope: : Wetlands are ecosystems that are flooded by water, either permanently, for years or decades or seasonally (for weeks or months).

In the Danube river basin area and the Danube river delta more than 70% of its wetlands, flood plains, coastal wetlands such as salt marshes have been lost and/or disconnected³²⁶ and the remaining wetlands are under pressure from human activities, such as discharges of sewage and waste water, drainage for agricultural use and pollution. Yet, wetlands are among the most productive ecosystems and they are important hotspots of biodiversity. They provide key ecosystem services, such as water retention and purification, serve as a buffer in case of floods and droughts, remove excess nutrients and reduce of eutrophication as well as contribute to the management of riverine sediments. They have also a potential as carbon sinks reducing the input of greenhouse gas emissions in the future.

The proposals will focus on demonstration of active and passive restoration of wetlands, flood plains, coastal wetlands such as salt marshes including in the transitional waters of the Danube river delta at a large scale. The demonstration activities will combine measures to restore and protect wetlands, flood plains or coastal wetlands such as salt marshes, measures to re-connect wetlands, improvement of protection of communities against floods using nature based solutions involving wetlands, flood plains, coastal wetlands (e.g.: salt marshes) and

³²⁵ 1971 Ramsar Convention on Wetlands of International Importance especially as Waterfowl habitat. [scan_certified_e.pdf\(ramsar.org\)](https://www.ramsar.org/), see also [The Convention on Wetlands and its mission | Ramsar](#).

³²⁶ See [Wetlands | ICPDR - International Commission for the Protection of the Danube River](#), Gómez-Baggethun et al. (2019).

mitigation of impacts of droughts on these ecosystems and on connected riverine ecosystems, together with reduction of impacts of pollution, in particular from adjacent agricultural and industrial activities and urban pollution in particular from discharges of waste waters. The demonstration activities should entail a holistic approach of returning the ecosystem to the conditions prior to its disturbance, including where appropriate, re-introduction of species, restoration of lateral connectivity to a river, removal of pressures as well as a long term protection and monitoring.

Proposals must:

- Carry out demonstration activities in 3 different Member States and/or Associated Countries of the Danube river basin, involving and including in the consortium entities from these three countries;
- Identify areas and locations where the solutions are replicable and draw up an action plan and roadmap to replicate and scale up the ecosystem and biodiversity restoration solutions and actions.

The projects will include monitoring of carbon sequestration capacity of the wetlands, coastal wetlands such as salt marshes covered by the projects and of the impacts of changes in the climate system on this capacity as well as assessment of the impact of different ecosystem management methods and human activities in these ecosystems on their carbon sequestration capacity. The projects will also include monitoring of the resilience of the habitats targeted (e.g.: extreme events such as floods, droughts, storms) and improved delivery of a range of ecosystem services.

To address the impact-driven approach of the Mission and the nature of Innovation Actions, proposals are expected to work with and engage at least 5 ‘associated regions’ to showcase the feasibility, replicability and scale up of the solutions developed within the projects in other areas. ‘Associated regions’ are understood as areas with ecosystems that can benefit from the demonstration activities (e.g. neighboring regions and/or regions in a different sea basin) and/or less-developed regions, with the need to build capacity to implement the innovative solutions to restore freshwater ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” shall benefit from the Financial Support to Third Parties provided under this topic only once. The involvement of “associated regions” that have not yet participated in Mission projects is encouraged. The partners will proactively reach out to the associated regions to enable them to follow closely the project and its demonstration activities. The projects should continuously share their outcomes and knowledge with those ‘associated regions’ and provide them with technical assistance to build capacity and to implement wetlands, flood plains coastal wetlands such as salt marshes restoration and protection solutions in their territory that contribute to achieving the Mission objectives.

The technical assistance to the ‘associated regions’ should include the provision of technical advisory services necessary to the prepare roadmaps, plans and projects to restore and protect

wetlands, flood plains and/or coastal wetlands such as salt marshes, including a reduction of human pressures on these ecosystems and pollution in the associated regions restoring the continuity, natural free-flow and hydro morphology of the river by addressing possible barriers and showing the feasibility of implementing innovative solutions. The projects should support data and knowledge sharing through and as well benefit from the Ocean and Water Knowledge System to foster cross-regions, pan-European approaches.

The maximum amount of Financial Support to Third Parties is EUR 100,000 per 'associated region' for the entire duration of the action. Proposals should outline the selection process of the third parties to which financial support would be granted based on principles of transparency, objectivity and fairness.

The proposals are expected to integrate actions to support the social and economic transitions towards sustainable, inclusive and long term management of the restored and protected ecosystems, including natural, social, economic and cultural elements and business models for generating revenue from the restored and protected ecosystems and involve for that purpose local business communities, in particular SMEs, investors and other business stakeholders.

Training and communication activities towards stakeholders, including regional and local authorities from the 'associated regions' should be included in each proposal. Local actors, including where appropriate, the European Volunteer Corps and Mission Citizen Assemblies, should be involved in the demonstration of ecosystem restoration and protection activities and any actions for social and economic transitions towards sustainable inclusive and long term management of the restored ecosystems, like citizen science.

The proposal should consider actions to prevent and reduce pollution from different sources (such as chemicals, excess nutrients, industrial and urban waste waters). The proposals should build on research and innovation developed in the frame of related projects in the current and previous EU framework programmes, such as but not limited to Horizon2020 and Horizon Europe (e.g.: Alfawetlands; WetHorizons; Rewet; AMBER, MERLIN and WaterLands large-scale projects from the H2020 Green Deal topic LC-GD-7-1- 2020 Restoring biodiversity and ecosystem services) and with project funded under the Cluster 6 topic HORIZON-CL6-2021-BIODIV-01-09: Assessing and Consolidating Recent Advances on Freshwater Ecosystem Restoration, including Research Infrastructures and the Strategic Research and Innovation Agenda for the Black Sea (SRIA), LIFE, Interreg projects (such as Danube Flood Plain³²⁷), Danube Regional Project (wetlands)³²⁸, actions on the protection and restoration of wetlands and flood plains carried out by the International Commission for the Protection of the Danube river³²⁹ and national and regional programmes in the Danube river basin as well as the activities of Water4All Partnership and Sustainable Blue Economy Partnership and the Common Maritime Agenda for the Black Sea, in particular in the framework of restoration and management of wetlands, flood plains and coastal wetlands such as salt marshes and their sustainable management.

³²⁷ [Interreg Danube \(interreg-danube.eu\)](https://interreg-danube.eu)

³²⁸ [THE DANUBE REGION \(undp-drp.org\)](https://undp-drp.org/)

³²⁹ [Wetlands | ICPDR - International Commission for the Protection of the Danube River](https://www.icpdr.org/)

The projects funded under this topic will:

- build links with other Mission activities and other relevant activities within the lighthouse and its area to maximize synergies, as well as with the European Blue Parks, other Mission lighthouses and their activities;
- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the Danube river basin lighthouse support facility and platform, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouse area as well as with the Blue Parks technical support platform;
- support the Ocean and water knowledge system, in particular by contributing to biodiversity monitoring, modelling and knowledge creation and data.
- contribute to the possible extension of the LULUCF Regulation³³⁰ to marine and freshwater ecosystems.

Proposals are expected to show how their activities and results will support the European Green Deal and how they will achieve the Mission's objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the 'development and piloting' phase and 2030 for the 'deployment and upscaling phase'.

Objective 2 - Prevent and eliminate pollution of our ocean, seas and waters

In line with the conclusions of the informal European summit of 10 March 2022, the participation of researchers of Ukrainian nationality who have received a temporary protection status in the European Union is encouraged.

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-OCEAN-01-03: Mediterranean sea basin lighthouse - Actions to prevent, minimise and remediate chemical pollution

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 8.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 17.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility</i>	The conditions are described in General Annex B. The following

³³⁰ [EUR-Lex - 32018R0841 - EN - EUR-Lex \(europa.eu\)](https://eur-lex.europa.eu/eli/reg/2018/841/oj)

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<i>conditions</i>	<p>exceptions apply:</p> <p>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).</p> <p>The following additional eligibility criteria apply: In addition to the standard eligibility conditions, the consortium must involve and include entities from at least three Member States and/or Associated countries of the Mediterranean sea basin in which demonstration activities will be taking place.</p>
<i>Technology Readiness Level</i>	<p>Activities are expected to achieve TRL 5 to 7 by the end of the project – see General Annex B.</p>
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Beneficiaries will be subject to the following additional obligations regarding open science practices: If projects collect in-situ data and marine observations, beneficiaries must make them openly available through the European Marine Observation and Data network (EMODnet), based on FAIR (findable, accessible, interoperable, reusable) principles</p> <p>Beneficiaries may provide financial support to third parties. Support to third parties can only be provided in the form of grants. Financial support to third parties may only be awarded to local and/or regional authorities from an ‘associated region’. The maximum amount to be granted to each “associated region” is EUR 100,000, to showcase the feasibility, replicability and scale up of the solutions developed within the project in the “associated region”³³¹. Each “associated region” shall benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once.</p>

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

- Innovative, reproducible solutions to reduce and remediate pollution from chemicals (such as mercury, persistent organic pollutants, plant protection products (pesticides, biocides), per- and polyfluorinated alkyl substances - PFAFs, antifoulants as well as

³³¹ ‘Associated regions’ are understood as areas with similar ecosystems (e.g. neighbouring regions and/or regions in a different river basin) and/or less-developed regions, with the view to build capacity to implement the innovative solutions to restore freshwater ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” shall benefit from the Financial Support to Third Parties provided under this topic only once.

other chemical pollutants)³³² in the Mediterranean Sea basin in line with the target of reduction by at least 50% of the use and risk of chemical pesticides and to the objectives of the EU Zero Pollution Action Plan and the Convention for the protection of the Mediterranean sea against pollution and the Chemical Strategy for Sustainability;

- Accelerated uptake of innovative solutions to prevent and minimize chemical pollution;
- Effective monitoring of chemical pollution in line with existing methodologies under the Marine Strategy Framework Directive^[333] and under the Water Framework Directive;
- Support Water Framework Directive and Marine Strategy Framework Directive implementation, which provide indicators and mechanism for assessments and measures to achieve Good Environmental Status (GES) and Good Chemical Status;
- Contribution to the Mission's Digital Ocean and Water Knowledge system through marine observations and open data and knowledge sharing;

Empowered citizens taking action against pollution.

Scope: In line with the EU Zero Pollution Action Plan for Air, Water and Soil, proposals should demonstrate scalable breakthrough innovations (technological, business, social and governance) to prevent and minimize marine and freshwater pollution from chemical pollutants. Following the zero pollution hierarchy, proposals should focus on demonstrating replicable solutions to prevent and minimise pollution in the Mediterranean Sea including its major river catchment areas and taking into consideration land-sea interactions through measures, such as:

- Upstream prevention of pollution from chemicals;
- Substitutes or alternative less polluting substances and materials for the most prevalent chemical pollutants found in freshwater and at sea.

Proposed solutions for pollution prevention, elimination and remediation should not increase the level of anthropogenic underwater noise and air emissions.

Proposed solutions should be in line with the EU taxonomy regulation and delegated acts.

Proposals must:

- Carry out demonstration activities in 3 different Member States and/or Associated Countries of the Mediterranean sea basin, involving and including in the consortium entities from these three countries;
- Identify areas and locations where the solutions are replicable and draw up an action plan and roadmap to replicate and scale up the pollution solutions and actions.

³³² See for instance [Chemicals in European waters — European Environment Agency \(europa.eu\)](#).
³³³ add reference

To address the impact-driven approach of the Mission and the nature of Innovation Actions, proposals are expected to work with and engage at least 5 ‘associated regions’ to showcase the feasibility, replicability and scale up of the solutions developed within the projects in other areas. ‘Associated regions’ are understood as areas with ecosystems that can benefit from the demonstration activities (e.g. neighbouring regions and/or regions in a different sea basin) and/or less-developed regions, with the need to build capacity to implement the innovative solutions to prevent, eliminate and remediate pollution to prevent, eliminate and remediate pollution in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions.

The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” shall benefit from the Financial Support to Third Parties provided under this topic only once. The involvement of “associated regions” that have not yet participated in Mission projects is encouraged. The partners will proactively reach out to the associated regions to enable them to follow closely the project and its demonstration activities. The projects should continuously share their outcomes and knowledge with those ‘associated regions’ and provide them with technical assistance to build capacity and to implement in their territory that contribute to achieving the Mission objectives. The technical assistance to the ‘associated regions’ should include the provision of technical advisory services necessary to the prepare roadmaps, plans and projects to prevent, eliminate and remediate pollution from chemicals in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions.

The maximum amount of Financial Support to Third Parties is EUR 100,000 per ‘associated region’ for the entire duration of the action. Proposals should outline the selection process of third parties to which financial support would be granted based on principles of transparency, objectivity and fairness.

Proposals should build on research and innovation developed in the frame of related projects in the current and previous EU framework programmes, such as but not limited to Horizon 2020, including the activities funded under the Green Deal 2020 call, LIFE and national and regional programmes in the Mediterranean sea basin as well as on the future focus and activities of the Sustainable Blue Economy Partnership³³⁴, the sea basin initiative WestMed³³⁵ and the macroregional strategy EUSAIR³³⁶, with thematic networks, the implementation of the Union for the Mediterranean Ministerial Declaration on Sustainable Blue Economy as well as projects and actions funded under the PRIMA Partnership³³⁷.

Proposals will demonstrate novel methods and social innovation practices resulting in holistic socio-ecological governance and management plans that address the transfer of innovative solutions into the market and economic value/supply chains, by creating commercially viable

³³⁴ <https://www.jpi-oceans.eu/climate-neutral-sustainable-and-productive-blue-economy>

³³⁵ <https://www.westmed-initiative.eu/?lang=fr>

³³⁶ <https://www.adriatic-ionician.eu/>

³³⁷ [Home - PRIMA \(prima-med.org\)](https://www.prima-med.org/).

and investable propositions. The proposals need to build in capacity to reach local/regional and national systems of multi-stakeholders and to enhance their interconnections at basin scale. Multi stakeholder engagements will require active participation from academia to research performing organisations, from citizens to civil society, from young innovators to start-ups, industry, SMEs and other businesses. Activities focused on citizen engagement should also be gender-responsive and include groups at risk of social exclusion to promote a wider uptake of the developed solutions, where relevant.

Projects funded under this topic will address all following issues:

- build links with other Mission activities and other relevant activities and partnerships within the lighthouse and its area to maximize synergies, as well as with the European Blue Parks, other Mission lighthouses;
- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the Mediterranean sea basin lighthouse support facility and platform, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouse area as well as with the Blue Parks technical support platform;
- support the Ocean and water knowledge system, in particular by contributing to monitoring, modelling and knowledge creation and data.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

HORIZON-MISS-2022-OCEAN-01-04: Prevent and eliminate litter, plastics and microplastics: Innovative solutions for waste-free European rivers

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 10.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: Five innovative solutions must be identified and tested in real conditions.

<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 7 to 8 by the end of the project – see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Beneficiaries will be subject to the following additional obligations regarding open science practices: If projects collect in-situ data and marine observations, beneficiaries must make them openly available through the European Marine Observation and Data network (EMODnet), based on FAIR (findable, accessible, interoperable, reusable) principles</p> <p>Beneficiaries may provide financial support to third parties. Support to third parties can only be provided in the form of grants. Financial support to third parties may only be awarded to local and/or regional authorities from an ‘associated region’. The maximum amount to be granted to each “associated region” is EUR 100,000, to showcase the feasibility, replicability and scale up of the solutions developed within the project in the “associated region”³³⁸. Each “associated region” shall benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once.</p>

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

- Reduced pollution from litter, plastics and microplastics in European rivers;
- Accelerated uptake of innovative solutions to prevent and minimize pollution of rivers by litter, plastics and microplastics;
- Effective monitoring of litter, plastics and microplastics in freshwaters to implement the Water Framework Directive and Marine Strategy Framework Directive;
- Reduction by at least 50% plastic litter at sea and by at least 30% microplastics released into the environment;
- Contribution to the Mission’s Digital Ocean and Water Knowledge system through marine observations and open data and knowledge sharing.

Scope: In line with the EU Towards Zero Pollution Action Plan for Air, Water and Soil, proposals should demonstrate scalable breakthrough innovations (technological, business,

³³⁸ ‘Associated regions’ are understood as areas with similar ecosystems (e.g. neighbouring regions and/or regions in a different river basin) and/or less-developed regions, with the view to build capacity to implement the innovative solutions to restore freshwater ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” shall benefit from the Financial Support to Third Parties provided under this topic only once.

social and governance) to prevent and minimize pollution from litter, plastics and microplastics in European rivers.

Following the zero pollution hierarchy, proposals under this topic are expected to identify a set of innovative, cost-effective and sustainable solutions to be tested, validated and demonstrated to prevent and minimise pollution from litter, plastics and microplastics in major European rivers that flow out into the European seas and in their catchment areas, taking into consideration land-river interactions through measures, such as:

- Upstream prevention of pollution from litter, plastics and microplastics;
- Substitutes or alternative less polluting substances and materials for the most prevalent litter, plastics and microplastics found in rivers;
- Solutions to prevent or eliminate litter, plastics and microplastics from rivers.

The project will select and test at least five innovative and cost-effective solutions developed under EU, national, regional programmes or privately funded, for preventing and/or eliminating litter, plastics and microplastics from rivers for their effectiveness in preventing and eliminating this pollution in European rivers and for their scalability in other areas. The five solutions will include both solutions preventing as well as solutions eliminating litter, plastics and microplastics from rivers. At least 2 solutions should focus on elimination of microplastics from rivers.

Selected solutions for pollution prevention, elimination and remediation should not increase the level of anthropogenic underwater noise and air pollution. The selected solutions should be in line with the EU taxonomy regulation and delegated acts.

To address the impact-driven approach of the Mission and the nature of Innovation Actions, proposals are expected to work with and engage at least 5 ‘associated regions’ to showcase the feasibility, replicability and scale up of the solutions developed within the projects in other areas. ‘Associated regions’ are understood as areas with ecosystems that can benefit from the demonstration activities (e.g. neighbouring regions and/or regions in a different sea basin) and/or less-developed regions, with the need to build capacity to implement the innovative solutions for waste-free rivers in the associated regions, addressing possible barriers and showing the feasibility of implementing innovative solutions.

Proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” shall benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once. The involvement of “associated regions” that have not yet participated in Mission projects is encouraged. The partners will proactively reach out to the associated regions to enable them to follow closely the project and its demonstration activities. The projects should continuously share their outcomes and knowledge with those ‘associated regions’ and provide them with technical assistance to build capacity and to implement in their territory that contribute to achieving the Mission objectives. The technical assistance to the ‘associated regions’ should include the provision of technical advisory

services necessary to the prepare roadmaps, plans and projects for waste-free rivers in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions.

The maximum amount of Financial Support to Third Parties is EUR 100,000 per 'associated region' for the entire duration of the action. Proposals should outline the selection process of the third parties to which financial support would be granted based on principles of transparency, objectivity and fairness.

'Associated regions' are understood as areas with ecosystems that can benefit from the scale up activities (e.g. neighbouring regions and/or regions in a different sea basin) and/or less-developed regions, with the need to build capacity to implement the innovative solutions to prevent, eliminate and remediate pollution in the associated regions addressing possible barriers and showing the feasibility of implementing innovative solutions.

The project funded under this topic will address all following issues:

- build links with other Mission activities and other relevant activities within the lighthouse and its area to maximize synergies, as well as with the European Blue Parks, other Mission lighthouses;
- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the Mediterranean sea basin lighthouse support facility and platform, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouse area as well as with the Blue Parks technical support platform;
- support the Ocean and water knowledge system, in particular by contributing to monitoring, modelling and knowledge creation and data.

Proposals should build on research and innovation developed in the frame of related projects in the current and previous EU framework programmes, such as but not limited to Horizon 2020, including the activities funded under the Green Deal 2020 call, LIFE and national and regional programmes on European rivers, as well as the activities of the European Rivers Network.

Proposals are expected to show how their activities and results will achieve the Mission's objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the 'development and piloting' phase and 2030 for the 'deployment and upscaling phase'.

HORIZON-MISS-2022-OCEAN-01-05: Marine litter and pollution – Smart and low environmental impact fishing gears

Specific conditions	
<i>Expected EU contribution per</i>	The Commission estimates that an EU contribution of around EUR 2.50 million would allow these outcomes to be addressed appropriately.

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<i>project</i>	Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 10.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: Three innovative solutions must be identified and tested in real conditions.
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 7 to 8 by the end of the project – see General Annex B.

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

- Portfolios of solutions for low-environmental impact fishing gears and minimised end-of life waste, including through recycling and reuse;
- Reduced marine pollution caused by waste from fishing activities, in line with among others the Single Use Plastic Directive and the Port Reception Facilities Directive;
- Preserved marine fauna and reduction of accidental catches (mainly of Endangered, Threatened and Protected (ETP) species), including the harmful effects of ghost fishing gears;
- Improved and preserved marine habitats, including seabed, and reduced negative effects of abandoned, lost or otherwise discarded fishing gears;
- Improved mapping, tracking and recovery of abandoned, lost or otherwise discarded fishing gears.
- Contributed to the implementation of EU legislation, e.g.: the Directive on the reduction of the impact of certain plastic products on the environment (Directive 2019/904)³¹;
- Increased users' choices and responsible user behaviours.

Scope: Proposals under this topic are expected to identify a set of suitable innovative smart and sustainable solutions to be tested, validated and demonstrated in real conditions, to address negative impacts of fishing gears on marine life and habitats and promote long-term sustainability in our ocean and seas.

Interdisciplinary approaches and close cooperation between researchers, fishing industry, fisheries managers and other stakeholders will be fundamental to the development, introduction and acceptance of innovative, smart and sustainable fishing technologies.

Proposals are expected to address one of the following issues:

- **Circular aspects:** design cost-effective and sustainable fishing gears applying a life-cycle approach, using environmentally-friendly materials (e.g. recycled, recyclable, biodegradable, durable, upgradable) and including recycling and reusing opportunities of end-of-life gears and recovered ghost gears;
- **Environmental impacts:** reducing harmful impacts of fishing gears on marine fauna, habitats and seabed: e.g. minimizing pollution including from hazardous chemicals and microplastics; reducing negative effects on sensitive and endangered species by reducing bycatches and ghost fishing and through improving mapping, tracking and recovery of abandoned, lost or otherwise discarded fishing gears. All proposals should also take into account selectivity requirements of the fishing gears. In addition, all proposals should address emission reduction objectives, including energy efficiency and resources consumption in gear manufacturing process and in fishing operations.

Each project will test in real conditions at least three sustainable, cost-effective and innovative solutions developed under EU, national, regional programmes or privately funded, for sustainable and low-impact fishing gears (e.g.: Horizon Europe and Horizon 2020; LIFE, the EU Maritime, Fishery and Aquaculture Fund – EMFAF and its predecessor) as well as outcomes of EU funded projects (e.g.: NetTag³³⁹; Oceanets³⁴⁰, Bluenet³⁴¹, marGnet³⁴², Biogeras³⁴³). These three solutions will either address environmental impacts of fishing gears or the circular aspects of fishing gears and use of sustainable materials.

Awareness raising actions should be included to provide users of fishing gear containing plastic proper information about, for example, the availability of re-usable alternatives and re-use systems, appropriate waste management options available and best practices, as well as about the plastic content in fishing gear.

The projects funded under this topic will address all following issues:

- build links with other Mission activities and other relevant activities within the lighthouse and its area to maximize synergies, as well as with the European Blue Parks, other Mission lighthouses;
- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the sea and river basin lighthouse support facilities and platforms, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouse area as well as with the Blue Parks technical support platform;

³³⁹ https://cinea.ec.europa.eu/featured-projects/nettag_en

³⁴⁰ <https://oceanets.eu/>

³⁴¹ <https://www.bluenetproject.eu/>

³⁴² <https://www.margnet.eu/>

³⁴³ <https://biogears.eu/>

- support the Ocean and water knowledge system, in particular by contributing to monitoring, modelling and knowledge creation and data.

SMEs, early-stage business and scale-ups involved in Mission projects entailing innovative, scalable and sustainable business ventures from traditional and emerging blue economy sectors are invited to join the BlueInvest community and benefit from the BlueInvest Fund³⁴⁴.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

Objective 3 - Sustainable, carbon-neutral and circular Blue economy

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’. In line with the conclusions of the informal European summit of 10 March 2022, the participation of researchers of Ukrainian nationality who have received a temporary protection status in the European Union is encouraged.

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-OCEAN-01-06: Lighthouse in the Baltic and the North Sea basins – bringing sustainable algae-based products and solutions to the market

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 8.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 17.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>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).</p> <p>The following additional eligibility criteria apply: In addition to the</p>

³⁴⁴ BlueInvest provides equity from the European Maritime, Aquaculture and Fisheries Fund, matching guarantees from InvestEU, capital from the European Invest Fund and its parent the European Investment Bank to venture capital or impact funds who will crowd in other investments. See: <https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1451>

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	standard eligibility conditions, the consortium must involve and include entities from at least three Member States and/or Associated Countries of the Baltic and North sea basin.
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 7 to 8 by the end of the project – see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Beneficiaries will be subject to the following additional obligations regarding open science practices: If projects collect in-situ data and marine observations, beneficiaries must make them openly available through the European Marine Observation and Data network (EMODnet), based on FAIR (findable, accessible, interoperable, reusable) principles

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

- Increased market presence and further development of sustainable algae-based solutions and products for various uses and needs (e.g. human consumption, animal feed, pharmaceutical applications, waste-water treatment, innovative, circular and sustainable textiles applications or applications for agriculture);
- Enhanced knowledge base on algae-based solutions and products expected to reach European markets in the short to medium term;
- Enhanced public awareness and understanding of consumer acceptance issues of new algae based products:
- Identified and reduced market-entry barriers and barriers to uptake and scale up innovative and sustainable algae-based solutions and products
- Expansion and integration of innovative and circular industrial ecosystems and industrial clusters³⁴⁵ by bringing innovative and sustainable algae-based solutions and products to the market, integrating and linking up actors throughout the value chain to explore synergies.

Scope: Proposals are expected to show the way for innovative and sustainable algae-based solutions and products for uses such as human consumption, animal feed, pharmaceutical applications, waste water treatment, innovative, circular and sustainable textiles applications or applications for agriculture to the market. Algae-based products and solutions for energy applications are excluded from the scope of the topic.

The projects will address all following issues:

³⁴⁵ Industrial clusters defined as per [Homepage | European Cluster Collaboration Platform](#)

- Develop and demonstrate innovative and sustainable algae-based applications and assess their sustainability and circularity along the whole value chain;
- Identify technological, regulatory, economic and other barriers to bring algae-based products or solutions into the market and propose measures to overcome them, including where suitable through the use of regulatory sandboxes;
- Develop and test commercialisation strategy for algae-based innovative products or solutions for applications for human consumption, animal feed, pharmaceutical applications, water treatment, innovative, circular and sustainable textiles applications and for agriculture;
- Address cost-efficiency and cost reduction for algae transformation and processing;
- Bring together relevant actors and fora³⁴⁶ to establish an integrated, dynamic and circular industrial ecosystem around innovative algae-based products or solutions, involving when relevant, cluster organisations of industrial clusters/ecosystems and/or smart specialisation regions³⁴⁷.

Interdisciplinary approaches and close cooperation between researchers, academia, algae aquaculture industry, and industries developing innovative and sustainable algae-based solutions and products, as well with users and consumers of those products and solutions will be fundamental to the development, introduction and acceptance of these products in the market.

Proposals should build on research and innovation projects' results in the current and previous EU framework programmes, such as but not limited to Horizon 2020, LIFE, EMFF and its continuation the European Maritime, Fisheries and Aquaculture Fund, the Knowledge Innovation Community on food, and other EU funding streams as well as national, regional and cross-border programmes in the Baltic and North sea basins and the activities of the Sustainable Blue Economy Partnership.

Proposals need to build in capacity to reach local/regional and national systems of multi-stakeholders and to enhance their interconnections at basin scale. Multi stakeholder engagements will require active participation from academia to research performing organisations, from citizens to civil society, from young innovators to start-ups, SMEs and other businesses.

Projects funded under this topic will:

- build links with other Mission activities and other relevant activities within the lighthouse and its area to maximize synergies, as well as with the other Mission lighthouses;

³⁴⁶

Such as the Blue Bioeconomy Forum.

³⁴⁷

<https://clustercollaboration.eu/> and <https://s3platform.jrc.ec.europa.eu/>

- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the Baltic and North sea basin lighthouse support facility and platform, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouse area;
- support the Ocean and water knowledge system, in particular by contributing to monitoring, modelling and knowledge creation and data

A strong communication component and an active involvement of stakeholders, including from the aquaculture and algae industry, relevant business organisations, consumers and users and NGOs, in a co-creation approach is essential for the uptake of the produced outputs. Training and education activities should be included. Market analysis and commercialisation strategies (customer identification, distribution, branding etc.) will be essential.

The outcomes should address the European Green Deal³⁴⁸ objectives, the Farm to Fork Strategy for a fair, healthy and environmentally friendly food system³⁴⁹, the EU Bioeconomy Strategy³⁵⁰, the Communication on a new approach for a Sustainable Blue Economy³⁵¹ and the Strategic guidelines for a more sustainable and competitive EU aquaculture³⁵², the Marine Strategy Framework Directive³⁵³ and the Maritime Spatial Planning Directive³⁵⁴.

SMEs, early-stage business and scale-ups involved in Mission projects entailing innovative, scalable and sustainable business ventures from traditional and emerging blue economy sectors are invited to join the BlueInvest community and benefit from the BlueInvest Fund³⁵⁵.

Proposals are expected to show how their activities and results will achieve the Mission's objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the 'development and piloting' phase and 2030 for the 'deployment and upscaling phase'.

Mission Enabling activities: Digital Ocean and Water Knowledge System, public mobilisation and engagement, dynamic investment ecosystem

Proposals are expected to show how their activities and results will achieve the Mission's objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the 'development and piloting' phase and 2030 for the 'deployment and upscaling phase'. In line with the conclusions of the informal European summit of 10 March 2022, the participation of

³⁴⁸ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

³⁴⁹ https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en

³⁵⁰ https://ec.europa.eu/info/research-and-innovation/research-area/environment/bioeconomy/bioeconomy-strategy_en

³⁵¹ COM/2021/240 final

³⁵² COM/2021/236 final

³⁵³ https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm

³⁵⁴ https://ec.europa.eu/oceans-and-fisheries/ocean/blue-economy/maritime-spatial-planning_en

³⁵⁵ BlueInvest provides equity from the European Maritime, Aquaculture and Fisheries Fund, matching guarantees from InvestEU, capital from the European Invest Fund and its parent the European Investment Bank to venture capital or impact funds who will crowd in other investments. See: <https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1451>

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researchers of Ukrainian nationality who have received a temporary protection status in the European Union is encouraged.

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-OCEAN-01-07: Integration of biodiversity monitoring data into the Digital Twin Ocean

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 10.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	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).
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 5 to 7 by the end of the project – see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Grants awarded under this topic will be linked to the following action(s): HORIZON-MISS-2021-OCEAN-05-01: Underlying models for the European Digital Twin Ocean HORIZON-MISS-2021-OCEAN-IBA-01 EU Public Infrastructure for the European Digital Twin Ocean HORIZON-INFRA-2022-EOSC-01-03: FAIR and open data sharing in support of healthy oceans, seas, coastal and inland waters Beneficiaries will be subject to the following additional obligations regarding open science practices: If projects collect in-situ data and marine observations, beneficiaries must make them openly available through the European Marine Observation and Data network (EMODnet), based on FAIR (findable, accessible, interoperable,

	reusable) principles 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.
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Expected Outcome:

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

- Identified relevant “sleeping” or inaccessible biodiversity data and establishment of partnerships with data owners to unlock data on marine life, and human activities that affect it, through the digital ocean twin;
- Harmonised data, protocols and vocabularies, amongst biodiversity monitoring networks and actors, including citizens science programmes, and national authorities monitoring programmes;
- Secured, sustained and reliable data flows from biodiversity monitoring programmes, including research projects, national and international monitoring programmes, into DTO data repositories, from data collectors to data integrators, and their integration/assimilation in existing models;
- Economies of scale and enhanced standardisation through pilot sea-basin scale monitoring for species across the trophic chains (plankton, including microbes, fishes, marine mammals, reptiles and birds, other if considered important);
- Tools to better support assessment of multiple human activities pressures on biodiversity through exploring and assessing different modes of operation, different policies development and their effect on biodiversity;
- Support to the Mission’s Blue Parks and biodiversity actions in the Mission Lighthouses.

Scope: Proposals should expand the collection of ocean datasets related to biodiversity (species, habitats, ecological interactions, human activities, and their impacts), possibly using the cascading grant scheme, putting in place agreements with owners of previously inaccessible or neglected data including biodiversity, fisheries, international programmes (e.g.: ICOS, OBIS, MBON, ARGOS, (marine GEO BON³⁵⁶), Nature Directives and MSFD reports, citizen science, national monitoring programmes, as well as ocean weather data, observations related to blue carbon, etc. Proposals should collect, process or reformat as necessary, and feed existing ocean and future datasets into the DTO infrastructure.

Proposals should address all activities and tasks as described below, in cooperation and complementarity with the linked actions and other relevant actions.

³⁵⁶ <https://geobon.org/tag/marine-biodiversity-observation-network/>

1. Increasing flow of relevant biodiversity data based on literature, evaluations of EU regulations and results of relevant EU projects and studies and data collected by industry for regulatory purposes (Environmental Impact Assessment Directives):

- Identify existing, but restricted or hard to access, data on marine biodiversity and pressures;
- List and assess efforts to define biodiversity monitoring priorities, their effectiveness and their follow-up;
- Assess the impact of missing data on the ability of digital solutions (biodiversity / ecosystem models and applications) to represent reality and forecast future scenarios ;
- Unlock existing identified barriers and opportunities to ensure a sustained access to new sources of biodiversity data and its further integration and use specially in the mission and EU policies implementation;
- Assess innovative cost-effective technologies (e.g. High-throughput DNA sequencing), automatic recognition of electromagnetic or acoustic images) for large scale monitoring of biodiversity changes in key habitats. This is not aiming in developing new technologies or testing sensors, but assessing the potential of cost-effective technologies to provide large scale monitoring, by test casing them and achieving substantial data contributions.

2. Development of the biodiversity digital component and its integration in the DTO architecture:

- Consolidate data standards, near-real time data quality control procedures, communication protocols between data centres for instant data access, create new standards if necessary;
- Place agreements with data owners to Integrate more biodiversity data sources into the DTO architecture and environment with focus on data that presently are not available under FAIR principles identified in point 1.
- Extract and harmonise those data to feed the DTO data repository and allowing the flow of data to continue and remain sustained after the end of the project;
- Develop to the extent possible data models to facilitate their future automatic integration/assimilation, allowing the flow of data to continue and remain sustained after the end of the project;
- Develop and improve the data ingestion and assimilation mechanisms to feed into biodiversity/ecosystem models.

3. Case-studies:

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- Demonstrate the end-to-end approach for biodiversity monitoring based on the digital environment provided by the DTO and the proposed biodiversity data sources by:
- Integrating and assimilating new data sources into existing models and artificial intelligence algorithms, assessing the outcomes, and implementing required quality control. It should help assess the overall easiness, identify levels of improvement, etc. and map the additional biodiversity data needs to be prioritised. The end-to-end approach could address fishing practices to reduce by-catches or habitat damage, adaptation to climate change, species migrations, impact of human activities (e.g.: tourism, transportation, renewable energy, etc.), development and monitoring of marine protected areas, adapting human activities to migrations of cetaceans and birds, etc.
- Develop digital tools and services (e.g. through AI, socio-ecological modelling, etc.) to support policy-making and to be integrated in DTO environment.
- Open calls (cascading grants to data holders (international networks, citizen science networks, universities –under specific conditions- favouring providers from data-poor regions, covering important data gaps) to facilitate sustained and long-term ingestion of locked data (indicate conditions).

4. Define performance indicators to measure the success of the project and define achievable targets regarding increasing biodiversity data flows into the DTO by 2030.

HORIZON-MISS-2022-OCEAN-01-08: Student and school activities for the promotion of education on ‘blue’ sustainability and the protection of marine and freshwater ecosystems

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Beneficiaries will provide financial support to third parties. The support to third parties can only be provided in the form of grants. The financial support to third parties may only be awarded to primary and/or secondary schools recognised under national law of the Member States

	<p>and/or Associated countries and which are already accredited members of the Network of European Blue Schools³⁵⁷ established under the EU4Ocean coalition on ocean literacy³⁵⁸, or which intend to become accredited as members of the Network of European Blue Schools at the moment of submission of the application for grant, on the basis of relevant projects and curriculum development proposed under this topic. The maximum amount to be granted to each primary and/or secondary school is EUR 10,000, to student-led and implemented projects that develop and implement ideas contributing to the achievement of the objectives of Mission ‘Restore our ocean and waters by 2030’³⁵⁹ and at the same time, reinforce and contribute to the work of the EU4Ocean Coalition for Ocean Literacy and its dedicated European Network of Blue Schools Each school shall benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once.</p>
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Expected Outcome:

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

- Increased mobilisation and engagement of children and youth in primary and secondary schools across the EU and in the Associated countries in the implementation of Mission objectives;
- Student and school projects implementing the Mission objectives and engaging and mobilising students, teachers and schools in the pursuit of ocean and water literacy, sustainability and Mission objectives, that at the same time contribute to the growing Network of European Blue Schools established under the EU4Ocean Coalition for Ocean Literacy;
- Increased ocean and water literacy among children and youth, teachers and schools, improved understanding of the value and of ocean and waters and enhanced sense of responsibility among the youth and teachers towards this planet and its boundaries;
- Ramp up accreditation of schools in the Network of European Blue Schools and engagement in their related activities, based on methodologies of Open Schooling, engaging with the community and communicating the results of their projects and in the implementation of Mission objectives and bring the ocean and water into the classroom at the EU- and Associated countries level.

³⁵⁷ <https://webgate.ec.europa.eu/maritimeforum/en/node/5494>: The European network of Blue Schools was developed under the European Maritime and Fisheries Fund and is carrying on under the European Maritime Fisheries and Aquaculture Fund.

³⁵⁸ <https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1482>

³⁵⁹ The objectives of ‘Mission Restore our ocean and waters by 2030’ are set out in the Mission Implementation Plan published by the European Commission at [Final outline implementation plans \(europa.eu\)](#).

Scope: Previous studies and pilot projects indicate that youth and school mobilisation and engagement and ocean and water literacy activities need to be linked with clearly defined goals and be focused on concrete actions and projects. Mission “Restore our ocean and waters by 2030” offers the opportunity to develop and implement projects by the students themselves, with the support and contribution of their schools, teachers and wider community, based on the established principles and practices of ocean literacy and the general framework on education for sustainability. These projects are expected to contribute, beyond being a pre-requisite for accreditation under the Network of European Blue Schools, to the implementation of Mission objectives.

Proposals under this topic will address the following:

- In cooperation with the Network of European Blue Schools established under the EU4Ocean coalition, expand and broaden the ocean and water literacy programmes for primary and secondary schools within the European Union and in the Associated Countries to allow them to become agents for change and sustainability of the ocean, seas and waters;
- Expand the Network of European Blue Schools further to all European Union Member States and to any Associated Countries, coastal or landlocked, and increase links between the established Blue Schools and other primary and secondary schools invite other primary and secondary schools aspiring to become accredited members of the European Network of Blue Schools through the development of common activities (i.e.: twinning projects, etc.) and through the sharing of their experiences;
- Promote the Mission, its objectives and activities in primary and secondary schools in the European Union and Associated Countries; promote methodologies of Open Schooling, engaging with the community and communication of project results, as important aspects of citizens participation and promotion of Mission objectives;
- Develop a pipeline of student and school projects implementing the Mission objectives and engaging and mobilising students, teachers and schools for the Mission and monitoring the progress of their implementation;
- Provide technical assistance and expertise for the proposed projects implementing the Mission objectives and expand ocean and water literacy and education for ocean and water sustainability;
- Highlight the contribution of student and school projects to achieving the Mission objectives through dissemination campaigns;

To address the impact-driven approach of the Mission, should include at least three calls for students and school projects, which will be supported through grants to third parties under this topic. The selection process for these student and school projects will be based on principles of transparency, fairness and objectivity, and will take into account the processes and requirements for schools accreditation as members of the Network of European Blue

Schools. The student and school projects that should benefit from the financial support to third parties under this topic will demonstrate and cover the following elements:

- Demonstrably and measurably contribute to the implementation of the Mission objectives and targets set out in the Mission Implementation Plan, among others through development and implementation of innovative solutions and products contributing to those objectives;
- Entail strong and innovative ocean and water literacy activities aimed at students, teachers and parents of the school(s) concerned and promote methodologies of Open Schooling, engaging with the community and communication of project results;
- Be accredited members of the European network of Blue schools at the time of application for the financial support for third parties under this topic or demonstrate how they intend to meet the pre-requisites to become accredited members of the Network of European Blue Schools in order to receive the European Blue School accreditation by the time of the completion of the project with respect to which they are applying for a financial support to third parties under this topic.
- Entail a proposal for cooperation and/or twinning with other schools, in particular with the Network of European Blue Schools and those aspiring to become accredited members of the Network of European Blue School;
- Entail commitment to a Climate Pact Pledge³⁶⁰ leading to decarbonisation or at least carbon neutrality of the project and of the proposed school activities.

Proposals will develop and ensure:

- transparent, fair and objective selection and evaluation system for the student and school projects, and include, among the assessment criteria, a high degree of circularity, carbon neutrality and positive environmental impact of the project;
- full publication of the projects selected for funding and schools benefiting from the financial support to third parties under this topic, among others by publicising their results in the dedicated Network of European Blue Schools webpage³⁶¹.

The student and school projects benefiting from the Financial Support to Third parties are entitled to receive technical assistance, which entails technical advisory services for the implementation and progress monitoring of the projects. The primary or secondary school which proposed the student or school project shall be the beneficiary of the Financial Support to Third parties which should be used exclusively for the implementation of the school and/or student project. A primary or secondary school shall benefit from the Financial Support to Third Parties provided under this topic only once. The maximum amount of Financial Support to Third Parties is EUR 10,000 per school for the entire duration of the action.

³⁶⁰ See [Pledges \(europa.eu\)](https://european-council.europa.eu/media/en/press-communications/infographic/Pages/pledges.aspx)

³⁶¹ Maritime Forum(europa.eu)

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Projects funded under this topic will:

- build links with other Mission activities and other relevant activities within the Mission lighthouses’ areas and Blue Parks to maximize synergies;
- contribute to the aims and work pursued under the EU4Ocean Coalition and its dedicated Network of European Blue Schools and complement it;
- build links with the Mission implementation monitoring system that will be part of the Mission Implementation Support Platform and with the basin lighthouse support facilities and platforms, for reporting, monitoring and coordination of all relevant implementation activities in the lighthouses’ areas.

Participation of students of Ukrainian nationality who have received a temporary protection status in the European Union is encouraged.

Proposals are expected to show how their activities and results will achieve the Mission’s objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the ‘development and piloting’ phase and 2030 for the ‘deployment and upscaling phase’.

HORIZON-MISS-2022-OCEAN-01-09: Towards a European e-DNA library of marine and freshwater species

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 2.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Grants awarded under this topic will be linked to the following action(s):</p> <p>HORIZON-MISS-2021-OCEAN-05-01: Underlying models for the European Digital Twin Ocean</p> <p>HORIZON-MISS-2021-OCEAN-IBA-01 EU Public Infrastructure for the European Digital Twin Ocean</p> <p>HORIZON-INFRA-2022-EOSC-01-03: FAIR and open data sharing in support of healthy oceans, seas, coastal and inland waters</p>

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

- Contribution to the development of the next generation marine monitoring programmes and mapping initiatives that focus on collecting and analysing environmental DNA-of marine and freshwater species;
- Assessment of all relevant activities, actions and projects that entail collecting and analysing environmental DNA from marine and freshwater species implemented in the European Union and in the Associated countries for their synergies;
- Assessment of the feasibility of creation of an integrated European e-DNA library of all marine and freshwater species that would be based on FAIR principles and publicly available and support marine biodiversity monitoring programmes and mapping initiatives. Compatibility with the European Marine Observation and Data Network (EmodNet) and the future Ocean and Water knowledge system (Digital Twin Ocean) will be part of the assessment;
- Assessment of ongoing international efforts on standards and interoperability of data, methods, techniques, etc.
- Fair and equitable sharing of the benefits from the use of marine genetic resources linked to biodiversity, in line with the EU Biodiversity Strategy 2030;
- Promote synergies and harmonisation between projects and initiatives to collect and analyse DNA of marine and freshwater species for their future successful scale up.

Scope: Genomic techniques represent a major source of innovation in marine monitoring techniques. They offer the potential to provide accurate, real time and cost-efficient monitoring and observation of the marine environment and its biological diversity that can be used for policy making and policy implementation, such as in the case of status assessment requirements.

This topic aims at coordinating and networking ongoing activities at EU level, assessing the needs and requirements for establishing an EU e-DNA repository/library of marine and freshwater species and developing plans for its efficient data curation and storage to ensure the provision of accurate time series, data standards and harmonisation for marine biodiversity monitoring and observation.

Interdisciplinary by nature, proposals should integrate in the consortium relevant scientific expertise (e.g.: in marine monitoring and observation, genomics, blue biotechnology, marine biology and ecology, big data analysis, machine learning methods) as well as European Research Infrastructures and relevant end users, such as environmental agencies, regional

convention programmes, institutes in charge of the implementation of the Marine Strategy Framework Directive³⁶², national and regional authorities.

Use cases are expected to demonstrate the value of establishing an e-DNA library of marine and freshwater species at EU level and their contribution to EU biodiversity strategies.

Proposals are expected to link with the Digital Ocean and Water Knowledge System (Digital Twin ocean) to address how to digitally record and manage EU e-DNA data and meta-data through appropriate standards, formats, data policy that facilitate open data and knowledge sharing for further use for biodiversity monitoring and modelling. Cooperation, networking and exchange of information is also expected with projects funded under Cluster 6 topic HORIZON-CL6-2021-BIODIV-01-03 (Understanding and valuing coastal and marine biodiversity and ecosystems services), in particular its workstream on genomics and taxonomic technologies for the inventory and fast identification of marine species, topic HORIZON-CL6-2021-BIODIV-01-01 (European participation in global biodiversity genomics endeavours aimed at identifying all biodiversity on Earth) as well as any other relevant projects focusing in this area.

HORIZON-MISS-2022-OCEAN-01-10: Towards local community-driven business models: regenerative ocean farming

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 1.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Procedure</i>	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering all three sea basins covered by the Mission 'Restore our ocean and waters by 2030' (Atlantic and Arctic sea basin, Mediterranean sea basin, Baltic and North sea basin), grants will be awarded to applications not only in order of ranking but at least also to one project that is the highest ranked within each sea basin, provided that the applications attain all thresholds.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Beneficiaries will be subject to the following additional obligations

³⁶² MSFD, 2008/56/EC) MSFD

	regarding open science practices: If projects collect in-situ data and marine observations, beneficiaries must make them openly available through the European Marine Observation and Data network (EMODnet), based on FAIR (findable, accessible, interoperable, reusable) principles
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Expected Outcome: Projects are expected to contribute to all of the following expected outcomes:

- Evidence-based business plans for the development of entrepreneurship and successful local community-driven regenerative ocean farming initiatives;
- Job creation and new skills development;
- Provision of new ecosystem services from marine and coastal ecosystems;
- Preserved local marine and coastal ecosystems, biodiversity and genetic diversity;
- Increased resilience of coastal and marine areas to climate change and generation of positive climate change mitigation effects;
- Improved marine and coastal habitats, biodiversity and enhanced conservation capacity;
- Increased knowledge on impact of regenerative ocean farming on local marine and coastal environment conditions.

Scope: This topic aims at supporting the development of sustainable locally-led initiatives for regenerative ocean farming, accelerating their uptake, anticipating and planning necessary future investments. Activities will focus on assessing the technical and operational feasibility as well as the economic viability of site-specific community-driven regenerative ocean farming initiatives.

The “community-driven” approach under this topic puts strong emphasis on skills and capacity of coastal communities and relevant actors to manage the natural resources they depend upon in a sustainable way, as well as on the establishment of partnerships and cooperation to build local expertise and enhance knowledge that will support the community. This, in turn, will contribute to preserve and protect marine and coastal habitats, build climate change resilience, develop livelihood opportunities and stimulate investments.

Activities under this topic will, therefore, contribute to the achievement of Mission Objective 3 “Making the blue economy sustainable, carbon neutral and circular” by fostering technological, socio-economic and human-centric transformations in “blue” sectors in Europe whilst protecting and preserving blue natural capital (Mission Objective 1).

Regenerative ocean farming is a form of mariculture that involves restoration and regeneration³⁶³ of seaweed forest habitats and/or other marine habitats in nearshore or offshore ocean environment, following sustainable mariculture principles such as marine permaculture, with zero feeds and fertilisers inputs in the system, with the effect of sequestration of carbon and nutrients and restoration of coastal and marine ecosystems.

Regenerative ocean farming may include seaweed and/or combinations of seaweed, shellfish and/or other low trophic organisms.

Proposals will address all key issues concerning the technical, organisational, financial, environmental and socio-economic feasibility of new community-driven regenerative ocean farming initiatives in at least three sites, each located in a different Mission sea basin³⁶⁴ and will:

- demonstrate the technical and operational feasibility of site-specific regenerative ocean farming, with a focus on innovation and on sustainable and low impact harvesting methods and technologies;
- demonstrate the social and economic viability and relevance of regenerative ocean farming for related local communities;
- identify challenges and barriers, including legislative, regulatory and standard related issues, to the implementation of regenerative ocean farming and propose possible solutions;
- assess the site-specific socio-economic impact of community-driven regenerative ocean farming;
- assess market potential along the value chain and identify possible end-users/applications;
- assess the capacity of related ecosystem services to generate socio-economic value;
- develop and implement training and skill development actions involving local communities.

In addition to environmental and climate-related impact, sustainability issues (e.g.: resources and energy use) should be integrated in the plans of the regenerative ocean farming initiatives. The integration of the gender dimension is to be considered.

³⁶³ Regeneration is understood as the ability of an ecosystem – specifically, the environment and its living population – to renew and recover from damage, among others through photosynthesis which results in increased plant biomass in the ecosystem.
Mission Ocean and Waters sea basins are: 1) Atlantic and Arctic sea basin; 2) Mediterranean sea basin; 3) Baltic and North Sea basin

³⁶⁴ Regeneration is understood as the ability of an ecosystem – specifically, the environment and its living population – to renew and recover from damage, among others through photosynthesis which results in increased plant biomass in the ecosystem.
Mission Ocean and Waters sea basins are: 1) Atlantic and Arctic sea basin; 2) Mediterranean sea basin; 3) Baltic and North Sea basin

Projects should actively involve local stakeholders along the value chain, such as fishermen, SMEs and start-ups and relevant commercial actors, marine planners, coastal area inhabitants, local governments, indigenous groups, NGOs. Close cooperation with research organisations and academia is expected to provide sound scientific evidence as well as the implementation of open innovation approaches.

Activities to build consensus and engagement should be included with the view to, ultimately, create strategic partnering opportunities for developing sustainable and scalable business models and ventures showing the potential to boost the wellbeing of coastal areas and their communities.

For each site, activities will deliver thorough technical, organisational and financial plans underpinning the development of community-driven regenerative ocean farming initiatives.

The project should build on the experience and results of previous projects financed through Horizon 2020, Horizon Europe, LIFE, INTERREG³⁶⁵ and other EU and national programmes, for instance GENIALG³⁶⁶, as well as where appropriate on the activities and action of Fisheries Local Action groups³⁶⁷.

Actions to raise interest of philanthropic organisations are encouraged.

SMEs, early-stage business and scale-ups involved in Mission projects entailing innovative, scalable and sustainable business ventures from traditional and emerging blue economy sectors are invited to join the BlueInvest community and benefit from the BlueInvest Fund³⁶⁸.

Proposals are expected to show how their activities and results will achieve the Mission's objectives, in line with the timeframe of the Mission phases, i.e.: by 2025 for the 'development and piloting' phase and 2030 for the 'deployment and upscaling phase'.

Other Actions not subject to calls for proposals

Grants to identified beneficiaries

1. EU Public Infrastructure for the European Digital Twin Ocean

This grant will be awarded without a call for proposals according to Article 195(f) of the Financial Regulation and Article 20 of the Horizon Europe Framework Programme and Rules for Participation. The general conditions, including admissibility conditions, eligibility

³⁶⁵ <https://www.submariner-network.eu/grass> showing how macroalgae can be grown sustainably in Baltic (includes map); <https://www.interreg2seas.eu/en/ValgOrize> grows and tests algae to see how it tastes <https://genialgproject.eu/>

³⁶⁶ <https://www.submariner-network.eu/grass> showing how macroalgae can be grown sustainably in Baltic (includes map); <https://www.interreg2seas.eu/en/ValgOrize> grows and tests algae to see how it tastes <https://genialgproject.eu/>

³⁶⁷ <https://emodnet.ec.europa.eu/en/map-week-%E2%80%93-fisheries-local-action-groups-flags>

³⁶⁸ BlueInvest provides equity from the European Maritime, Aquaculture and Fisheries Fund, matching guarantees from InvestEU, capital from the European Invest Fund and its parent the European Investment Bank to venture capital or impact funds who will crowd in other investments. See: <https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1451>

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.

The objective is to integrate existing EU ocean observing and monitoring programmes, such as Copernicus Marine Service (CMEMS)³⁶⁹ and EMODnet³⁷⁰, into a single digital framework, with a view to providing public access and use to the widest possible range of ocean observation datasets, data products and services and prepare a co-working environment for knowledge creation. This should form the digital backbone of the European Digital Twin Ocean (DTO), a public infrastructure be aligned within the Destination Earth initiative of the Digital Europe Programme to host existing and new sources of data and modelling capacities for oceans and freshwater. It will support the development of the Mission lighthouses while preparing a robust infrastructure that can be scaled up to an overarching knowledge system.

The action's results are expected to lead to:

- a sustainable digital architecture that integrates Copernicus and EMODnet services into a European Digital Twin Ocean to be aligned with the Destination Earth initiative of the Digital Europe Programme, which enables the Mission's objectives through: seamless navigation and use of ocean data and data products; facilities to upload, configure and run integrated models; interoperability with other programmes, providing additional models and data (including international programmes, industry, citizen data, etc); and users' profiles management, including their assets (data, models), and configuration for scenario development and assessment;
- support to implementation of EU legislation and international commitments;
- a (co-)working virtual environment to use data and hosted models, targeting to start with the 3 objectives of the Mission (biodiversity, zero pollution, zero carbon) and supporting the lighthouses;
- the architecture for the oceanic component of Destination Earth Developments built under the Digital Europe programme;
- significant contribution to the UN Decade of Ocean Science for Sustainable Development.

The outputs of the action should rely on state of art science for preparing and running models' configurations, organising an ocean data lake compliant with EU and international data management standards based on innovative digital tools.

The action will be a linked action with the actions funded under topics European Green Deal Call [LC-GD-9-3-2020](#) (Iliad project³⁷¹); HORIZON-MISS-2021-OCEAN-01-07: Underlying

³⁶⁹ <https://marine.copernicus.eu/>

³⁷⁰ <https://emodnet.ec.europa.eu/>

³⁷¹ Iliad project, action number 101037643

models for the European Digital Twin Ocean; and HORIZON-INFRA-2022-EOSC-01-03: FAIR and open data sharing in support of healthy oceans, seas, coastal and inland waters.

The following tasks (from 1 to 4) should be addressed:

1. System architecture: the action should design, develop and pre-operationally validate an integrated and robust digital framework and new infrastructure and services, based at least on Copernicus and EMODnet, addressing at least all the following items:

- a platform providing users with access to all services that can be smoothly and seamlessly integrated under the europa.eu domain and standards REGULATION (EU) 2019/517 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 March 2019 on the implementation and functioning of the .eu top-level domain name and amending and repealing Regulation (EC) No 733/2002 and repealing Commission Regulation (EC) No 874/2004

Consolidated text: Regulation (EC) No 733/2002 of the European Parliament and of the Council of 22 April 2002 on the implementation of the .eu Top Level Domain , <http://data.europa.eu/eli/reg/2002/733/2008-12-11>, (current version 19/10/2019) Commission Regulation (EC) No 874/2004 of 28 April 2004 laying down public policy rules concerning the implementation and functions of the .eu Top Level Domain and the principles governing registration, <http://data.europa.eu/eli/reg/2004/874/oj>, (Current consolidated version: 16/04/2015)

- an ocean data lake linking all existing data with the capacity to exploit them with innovative digital technologies;
- a DTO engine to configure, schedule and run suites of algorithms and models, including through a European cloud and high performance computing capacities (HPC);
- a co-working environment where users can register, navigate seamlessly across datasets, access, use and develop digital knowledge services.

2. Improved accessibility of data. The action should address all issues that follow:

- provide access to all data, data products, and model outputs through: the ability to search, view and use data and model outputs according to the FAIR³⁷² principles through the platform; application programming interfaces allowing efficient access through Machine-to-Machine communication and applications of Artificial Intelligence, big data analysis and High-Performance Computing techniques;
- use accepted European or international standards;
- work with EMODnet ingestion services to prepare the infrastructure to incorporate data, taking into consideration the need to translate to European standards from: EU biodiversity repositories (e.g.: geographical nodes of OBIS); EU freshwater data

³⁷² Findable, accessible, interoperable, reusable.

repositories; (assess the need for developing new standards; and Major non European repositories of interest for the Mission;

- shift data access from shopping basket to instant access, particularly for large volumes;
- speed up access to data;
- prepare Application Programming Interfaces to deliver data for EU reporting (e.g. the European Environment Agency's Reportnet).

3. DTO engine: Improved accessibility to ocean models and software:

The project should develop a working environment to prepare configurations of runs on-demand: with combination of models or software, necessary input data, assimilation schemes or ensemble configurations, for the purpose of what-if scenarios (capacity to run nested, coupled models, ensemble configurations etc.) that includes all the following aspects:

- protocols and interfaces to access and use to hybrid (cloud + HPC) facilities;
- optimized data transfers, computing time and costs on cloud and HPC between Copernicus, EMODnet architectures and external IaaS infrastructures used for cloud and HPC;
- ability to draw on users' own data and data from Copernicus and EMODnet;
- standards and APIs, to host and run external ocean models using external data sources ready-to-configure and be run in the DTO engine;
- compatibility with ongoing developments within Copernicus and this Mission;
- protocols and interfaces compatible with the developments and technologies under Destination Earth, Copernicus DIAS, EOSC, GEANT or initiatives such as GAIA-X or EuroHPC.

4. A Co-working virtual environment where users can meet, discover and exploit data, software and models easily; this environment should be both easy to use for non-experts with innovative user experience, as well as efficient for scientific experts with additional functionalities if so-needed, such as:

- manage users in terms of characteristics, specific allocated assets, online support possibly cascading to Copernicus and EMODnet for expertise;
- ensure that users can create sessions of work to develop what-if scenarios / simulations based on the DTO engine and data available in the system; and share it with restricted access with identified collaborators;
- scientific standard tools to visualize and exploit results of algorithms, software or models applied on data by the users, for the purpose of scientific validation and assessment of what-if scenarios;

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- socializing tools to facilitate co-design, co-working practices and knowledge sharing, to facilitate the uptake of the future architecture by the lighthouses.

For the above, the necessary service pre-operations should be put in place. The action should be compliant with Copernicus, EMODnet best practices, and with INSPIRE, FAIR and OGC standards. The action should set up the required scientific governance and technical coordination to link closely with Copernicus and EMODnet daily for the implementation, with the other components of the Destination Earth initiative and with the EC/ESA joint Earth System science initiative.

Form of Funding: Grants not subject to calls for proposals;

Type of Action: Grant awarded without call for proposals according to Financial Regulation Article 195 (f), Innovation Actions;

Indicative budget: EUR 3.00 million;

Legal and financial set-up of the grant agreement: Subcontracting is not restricted to a limited part of the action.

Indicative timetable: Q1/2022

Legal Entities:

- MERCATOR OCEAN, 2 avenue de l'Aérodrome de Montaudran, 31 400 Toulouse, France;
- Vlaams Instituut voor de Zee, Wandelaarkaai 7, 8400 Oostende, Belgium

These two legal entities, namely Mercator Ocean International (MOI), implementing the Copernicus Marine Service, and the Flanders Marine Institute (VLIZ), key implementing entity of EMODnet have been identified because of the high level of technical expertise needed and because they are already implementing the two infrastructures expected to be integrated for the Digital twin development. These two legal entities are expected to closely cooperate with one another and form a consortium to implement this action.

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant awarded without call for proposals according to Financial Regulation Article 195 (f)

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: Q1/2022

Indicative budget: EUR 3.00 million from the 2021 budget³⁷³

2. Europeanisation of Plastic Pirates Citizen Science Initiative

This grant will be awarded without a call for proposals according to Article 195(f) of the Financial Regulation and Article 20 of the Horizon Europe Framework Programme and Rules for Participation. 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.

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

- Tried and tested EU wide approaches to using citizen science to understand and monitor plastic pollution in European rivers, coasts and seas.
- Increased capacity to collect, organise and verify (imperfect) data in research hubs for transnational cooperation.
- Tested replicable best practice models for linking excellent science and citizen engagement for the Mission's objective of restoring our ocean, seas and waters.
- Pan European cooperation with citizens and in particular young people on plastics in the aquatic and marine environment.
- Citizens engaged and empowered for the challenges posed by the twin green and digital transition, and increased society participation in the European Research Area.

The action should support the scale and rollout of the *Plastic Pirates – Go Europe!*³⁷⁴ initiative launched by the Trio-Presidency of Germany, Portugal and Slovenia into a pan-European citizen science initiative. The action should thus respond to the Council's call "on the Commission and Member States to further develop and implement the 'plastic pirates' citizen science campaign as the ERA pilot action to foster 'interaction' within the ERA in order to raise awareness among citizens, in particular young citizens, on the impact and benefits of R&I in their daily lives [as well as] encouraging cooperation with the proposed Mission on Healthy Oceans, Seas, Coastal and Inland Water".³⁷⁵

The action should implement a federated approach that allows the participation of all Member States. The action should support a synchronised and coordinated litter sampling and collection campaign across the EU during 2022, accompanied by corresponding

³⁷³ Of which EUR 0.71 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.31 million from the 'Digital, Industry and Space' budget, EUR 1.86 million from the 'Climate, Energy and Mobility' budget, EUR 0.08 million from the 'Civil Security for Society' budget, EUR 0.04 million from the 'Culture, creativity and inclusive society' budget.

³⁷⁴ <https://www.plastic-pirates.eu>

³⁷⁵ Council conclusions 13567/20 on the New European Research Area: <https://data.consilium.europa.eu/doc/document/ST-13567-2020-INIT/en/pdf>

communication and media activities at local, national and EU levels. The available resources should be used to support the collection campaign across the EU at local level as well as for the accompanying communication measures.

Citizen science is a rapidly emerging mode of research and innovation that shows huge promise in terms of collecting new qualities and quantities of data, harnessing collective intelligence, improving science-society literacy, and improving the relationship between science and society.

Citizen science initiatives can reach a more complete potential if implemented on a transnational level, collecting vast amounts of cross-country data in a harmonised and standardised manner. The action should therefore apply standardised approaches to sampling, data collection and storage with open access of data in line with the FAIR³⁷⁶ principles, which extends the existing data collected by the Plastic Pirates initiative across Europe, linking freshwater and marine. It should contribute to a more comprehensive assessment and monitoring of the sources, pathways and hotspots of plastic litter in Europe's rivers, coasts and seas. The action should thereby support excellent science and support the implementation and monitoring of EU policy objectives such as the Zero Pollution Action Plan for Water, Air and Soil, the Marine Strategy Framework Directive and Water Framework Directive. The action should connect to existing European data portals such as EMOD-Net and feed into the development of European Digital Twin Ocean to ensure long-term availability and relevance of the data collected for research and policy.

The action should increase transnational cooperation in citizen science and develop a mechanism for working with local partners in each EU Member State and Associated Country adapting and translating the already existing outreach and educational material for schools in local languages and ensure a European-wide coordinated approach to data collection, sampling and validation.

Legal entity/entities:

Deutsches Zentrum fuer Luft- und Raumfahrt e.V. (DLR)

Linder Hoehe

51147 Cologne

The Deutsches Zentrum fuer Luft- und Raumfahrt e.V. has been identified, due to its high level of expertise, network and administrative powers. DLR Project Management Agency already coordinated the following European campaign "Plastic Pirates – Go Europe!" which was developed by the Trio-Presidency of Germany, Portugal and Slovenia. Within this campaign, DLR already acted as the "neutral" secretariat coordinating all actors from the Trio-Presidency states. Likewise, DLR already coordinated the predecessor national campaign in Germany – called „*Plastikpiraten – Das Meer beginnt hier!*“ on behalf of the German

³⁷⁶ FAIR founding principles for data producers and publishers - Findability, Accessibility, Interoperability, and Reusability

Federal Ministry of Education and Research (BMBF), which has been successfully running since 2016. Due to its experience in the predecessor campaigns, BMBF mandated DLR to support the European rollout the Plastic Pirates. DLR has ready-to-use information material for teachers and students (e.g. developed and annually updated material and practical guidelines for field trips and teaching, in English and German), which will allow an immediate start of the sampling.

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant awarded without call for proposals according to Financial Regulation Article 195 (f)

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: Q12022

Indicative budget: EUR 2.00 million from the 2021 budget³⁷⁷

Procurement actions

1. Mission Ocean and Waters events

The objective is to organise Mission Ocean and Waters conference and other relevant events that will bring together key stakeholders and Mission partners, including Member States, regions, research bodies and academia, civil society and organisations and promote the Mission activities and projects among key Mission partners, stakeholders and citizens.

The action's results are expected to lead to:

- Increased knowledge and awareness of the Mission and its activities among Member States, regions and communities and key Mission partners and general public;
- Increased support and acceleration of the implementation of Mission activities, such as Mission lighthouses;
- Provide cooperation and networking opportunities among key Mission partners, Member States authorities, regions and communities for the implementation of the Mission;
- Support ocean and water literacy, citizen science and public and stakeholder mobilisation and engagement with regard to Mission activities.

Form of Funding: Procurement

³⁷⁷ Of which EUR 0.48 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.21 million from the 'Digital, Industry and Space' budget, EUR 0.05 million from the 'Civil Security for Society' budget, EUR 1.24 million from the 'Climate, Energy and Mobility' budget, EUR 0.03 million from the 'Culture, creativity and inclusive society' budget.

Type of Action: Public procurement

Indicative timetable: Q3-Q4/2022

Indicative budget: EUR 0.52 million from the 2022 budget³⁷⁸

2. Mission ocean, seas and waters implementation support platform – overall Mission coordination and monitoring; European Blue parks technical assistance; citizen engagement; communication

Public procurement for the Mission implementation support platform, which will provide a one-stop-shop to assist with the overall Mission implementation, including knowledge, science to policy advice, financial advice and technical assistance, assisting with capacity building, support to outreach, scale up and dissemination of information, knowledge and innovations at all levels. The Mission Implementation Support Platform will in particular provide access to knowledge to all citizens, as well as support and technical assistance to Mission Partners that will implement the Mission. The Mission Implementation Support Platform will set up the Mission implementation monitoring and reporting framework, integrate monitoring and reporting from Mission activities and ensure quantitative and qualitative analysis, and focus in particular on planning and tracking progress towards achievement of the Mission's objectives.

The Mission Implementation Support Platform will support and integrate citizen engagement and communication and dissemination activities for the Mission overall, in cooperation and coordination with the Mission lighthouse platforms. The platform will be expected to set up a process to allow actions and solutions from partners and other actors contributing to Mission objectives to integrate in the Mission (e.g. through Mission label or pledging platform) and to integrate this process in the Mission lighthouses, in cooperation with the lighthouse platforms.

The platform will foster and coordinate across the actions and lighthouses, the collection of observations, data, knowledge and digital solutions into the ocean and water digital system. The latter will ensure for the Platform data dissemination, digital knowledge development and technical assistance.

The Platform will build, organize and assist a group of private and public investors and donors designed to facilitate and design investable propositions and trigger investments across the Mission's activities.

The Platform will also cooperate with regions across the EU and participating countries, and with relevant organisations of regions, local authorities and stakeholders, including those sponsored by the EU, in order to prepare and effect the transfer of approaches and results from the Mission's lighthouses.

³⁷⁸ Of which EUR 0.10 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.07 million from the 'Digital, Industry and Space' budget, EUR 0.01 million from the 'Civil Security for Society' budget, EUR 0.33 million from the 'Climate, Energy and Mobility' budget, EUR 0.01 million from the 'Culture, creativity and inclusive society' budget.

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The Mission Implementation Support Platform will comprise the European Blue Parks platform, a technical and scientific assistance mechanism for local and regional initiatives implementing the Blue Parks (more effective marine protected areas, new areas under ‘strict protection’ and the creation of new marine protected areas or their extension), such as:

- guidance for biodiversity assessment and monitoring
- advice on ‘blue carbon sequestration’ and climate mitigation potential of passive and active ecosystem restoration
- technical and scientific assistance in designing, setting up and governance of local and regional protection initiatives, identification of sustainable economic opportunities and access to sustainable finance
- technical and financial assistance and expertise for the design and implementation of innovative and sustainable business models and business plans
- advice on and support building a community of engaged and sustainable investors and socio-economic actors benefiting from ecosystem services with view to their contribution and a pipeline of conservation investment opportunities
- support to networking and knowledge transfer between projects and areas within Blue Parks
- education, outreach and citizen engagement;
- ensure monitoring of implementation of the Blue Parks and quantitative and qualitative analysis.

It will provide expertise for the scientific basis for the expansion of networks of marine protected areas, including studies, mapping and assessments of EU marine biodiversity and of coherence of networks of marine protected areas. It will support the decisions over active and passive restoration in marine protected areas and effective management of marine protected areas through innovative approaches to assessing and managing most important pressures. The platform will support the creation and integration into the Ocean and water digital knowledge system of data, monitoring and forecasts as well as knowledge dissemination that supports the Blue Parks and cross-fertilization among the actions of the Mission.

The Blue Parks platform is expected to closely collaborate with and build on the activities of the EU Knowledge Centres and Observatories such as the JRC knowledge centres for biodiversity and for territorial policies.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: 1st Quarter 2022 – 2nd Quarter 2024

Indicative budget: EUR 5.34 million from the 2021 budget³⁷⁹

3. Studies in support to the implementation of the Mission

The implementation of the Mission requires support studies that will ascertain in detail the status quo of the implementation of the Mission objectives in particular in the following areas:

- Restoration of the continuity of the ecological flow of European rivers, with the view of reaching the target of 25,000 km of free flowing rivers by 2030, as set out in the European Biodiversity Strategy;
- Data and model availability on European rivers and other freshwater ecosystems with a view to including freshwater systems in Digital Twin Ocean;
- The state of knowledge of extent, nature, functioning and type of European wetlands and how their greenhouse gas emissions and sequestration due to their management, destruction and regeneration are reported to UNFCCC;
- State of development and implementation of nature based solutions for coastal protection, bioremediation and carbon sequestration in Europe.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q3-Q4/2022

Indicative budget: EUR 0.88 million from the 2022 budget³⁸⁰

4. Studies fostering cross programme synergies and links in support of the implementation of the Mission

The implementation of the Mission requires support studies foster links between different EU and national programmes and determine synergies between these programs to ensure effective implementation of Mission objectives and actions, in particular:

- Conduct portfolio analysis of projects funded from different EU, national and regional programmes with a view to their contribution to Mission objectives and in support of key Mission actions and activities;
- Flagging system for Mission relevant projects;

³⁷⁹ Of which EUR 1.27 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.56 million from the 'Digital, Industry and Space' budget, EUR 0.13 million from the 'Civil Security for Society' budget, EUR 3.31 million from the 'Climate, Energy and Mobility' budget, EUR 0.07 million from the 'Culture, creativity and inclusive society' budget.

³⁸⁰ Of which EUR 0.16 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.12 million from the 'Digital, Industry and Space' budget, EUR 0.56 million from the 'Climate, Energy and Mobility' budget, EUR 0.02 million from the 'Civil Security for Society' budget, EUR 0.02 million from the 'Culture, creativity and inclusive society' budget.

- Identify key synergies among projects funded from different EU, national and regional programmes that contribute to Mission objectives and have a potential to support of key Mission actions and activities;
- Accelerate access to public, private and blended finance for activities and projects contributing to Mission objectives.
- Develop strategies at national and local level for dissemination and exploitation of project results portfolios.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q3-Q4/2022

Indicative budget: EUR 0.38 million from the 2022 budget³⁸¹

Other budget implementation instruments

1. Individual experts assisting the Commission for evaluation of Mission 'Restore our ocean and waters by 2030'

This action will support the use of appointed independent experts for the analysis, monitoring and evaluation of actions implemented as a part of the Mission 'Restore our ocean and waters by 2030', contributing to and complementing the Horizon Europe programme level monitoring framework and evaluation efforts, in particular the key impact pathways and joint evaluation studies. Their work could also contribute to prospective analyses for the implementation of this Mission.

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. This amount is considered to be proportionate to the specific tasks to be assigned to the experts, including the number of meetings to be attended and possible preparatory work.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative timetable: Q3-Q4/2022 (6 months)

Indicative budget: EUR 0.12 million from the 2022 budget³⁸²

³⁸¹ Of which EUR 0.07 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.05 million from the 'Digital, Industry and Space' budget, EUR 0.24 million from the 'Climate, Energy and Mobility' budget, EUR 0.01 million from the 'Civil Security for Society' budget, EUR 0.01 million from the 'Culture, creativity and inclusive society' budget.

³⁸² Of which EUR 0.02 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.02 million from the 'Digital, Industry and Space' budget, EUR 0.00 million

Mission: Climate neutral and smart cities

This part of the Horizon Europe Work Programme 2021-2022 is dedicated to the implementation of the Climate-Neutral and Smart Cities Mission, hereafter referred to as the Cities Mission. In line with the provisions under the implementation plan of the Cities Mission that specifies its goals and objectives³⁸³, actions envisaged by the topics of this Work Programme will provide a strong and direct support to cities³⁸⁴ that will commit to climate neutrality³⁸⁵ and enable them to roll out their climate action plans and achieve climate neutrality by 2030, in synergy with significant progress towards zero pollution. In turn, the cities benefitting from these actions will act as experimentation and innovation hubs for other cities to become climate-neutral by 2050.

Climate neutrality for cities is associated with important co-benefits and urban qualities such as reduced air and noise pollution, improved health and well-being, reduced urban environmental footprints, enhanced urban greening and improved water management. It is also associated with policy coherence across sectors and with participatory and inclusive decision-making. Therefore, in addition to a significant contribution to the objective of the European Green Deal³⁸⁶ to make Europe climate-neutral by 2050, the actions funded will also contribute to the UN Agenda 2030³⁸⁷, the EU Zero Pollution Action Plan³⁸⁸, the Fit for 55 strategy³⁸⁹, the Biodiversity Strategy for 2030³⁹⁰, the EU Strategy on adaptation to climate change³⁹¹ and the New European Bauhaus initiative³⁹². In the process, they will support cities in their twin green and digital transitions.

from the 'Civil Security for Society' budget, EUR 0.08 million from the 'Climate, Energy and Mobility' budget, EUR 0.00 million from the 'Culture, creativity and inclusive society' budget.

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https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/cities_mission_implementation_plan.pdf

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The Cities Mission targets entities whose local authorities or their mandated representatives represent one city defined as a Local Administrative Unit (LAU), or a “greater city” or metropolitan region, taking account of Functional Urban Areas (FUA) where relevant. Entities of more than 50 000 inhabitants may apply. To maximise the impact in terms of overall greenhouse gas reduction, applications are encouraged in particular from cities where the majority of the population lives in an urban centre of at least 100 000 inhabitants.

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Climate neutrality is defined by the Intergovernmental Panel on Climate Change (IPCC) as a “concept of a state in which human activities result in no net effect on the climate system. Achieving such a state would require balancing of residual emissions with emission (carbon dioxide) removal as well as accounting for regional or local biogeophysical effects of human activities that, for example, affect surface albedo or local climate.” For the purpose of the Cities Mission, climate neutrality for a city should be assessed based on: (1) scope 1 GHG emissions, i.e. emissions within the geographic boundary from buildings, industry, transport, waste treatment, agriculture and forestry and from other activities, and (2) scope 2 GHG emissions, i.e. indirect emissions due to consumption of grid-supplied electricity within the geographic boundary and indirect emissions due to consumption of grid-supplied heat or cold within the geographic boundary.

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https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

387

<https://sdgs.un.org/2030agenda>

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https://ec.europa.eu/environment/strategy/zero-pollution-action-plan_en

389

https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3541

390

https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en

391

https://ec.europa.eu/clima/policies/adaptation/what_en

392

https://europa.eu/new-european-bauhaus/index_en

Topics under the call “Supporting the transition towards climate neutrality within cities” aim to strengthen the operational capacity of the Mission Platform³⁹³ that provides its services to cities participating in the Cities Mission, to support the setup of national mission networks and to foster collaborative local governance models. Topics under the call “Research and Innovation actions to support the implementation of the Climate-Neutral and Smart Cities Mission” will provide support to innovative approaches to integrated urban planning and design, to large-scale demonstrations of Positive Clean Energy Districts, to activities that strengthen the innovation and inclusiveness potential of public transport and urban mobility, and to the setup of a platform to coordinate the international dimension of the Mission. Overall, the actions funded under the Work Programme will also foster the engagement of citizens and urban stakeholders as well as the mainstreaming of social innovation and of user-friendly and secure digital services.

Proposals should demonstrate, as appropriate to their scope and size, how they internalise the principles of the Cities Mission, notably: (1) the contribution of the action to an overarching strategy aiming at climate neutrality for cities, (2) the place of the action within a holistic and cross-sectoral approach to climate neutrality, and (3) diversity in terms of geographical location and size of cities.

Applicants are encouraged to show how their proposals take into account and build upon existing programmes and/or the results of previous R&I projects. While addressing the particular challenge of a topic and ensuring the doing no harm principles, proposals should also contribute as relevant to the following cross-cutting priorities: (1) zero pollution, (2) sustainable digitisation and green ICT, (3) interoperability and shared standards, and (4) affordability, social inclusiveness and accessibility³⁹⁴ to leave no one behind. Due attention should be paid to solutions addressing housing affordability, mobility poverty and other distributional impacts of the transition, notably on households in vulnerable situations.

Proposals should emphasise systemic approaches by integrating, for instance, energy and mobility systems, carbon-free energy vectors and storage at district level, sustainable and carbon-free/low-emission built environment, diffusion of electrical, alternative fuels based, carbon neutral and efficient mobility and of vehicle-to-grid technology. Strong contribution to the implementation of the Cities Mission is expected from relevant Horizon Europe partnerships³⁹⁵ such as the European Partnership for People-centric Sustainable Built Environment (Built4People), the European Partnership towards Zero-emission Road Transport (2Zero) as well as the European Partnerships on Connected, Cooperative and Automated Mobility (CCAM) and on Driving Urban Transitions to a sustainable future (DUT). The European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities (KICs), with their experience in delivering holistic, transformative,

³⁹³ Being set up through the project selected under the Horizon 2020 NetZeroCities - Accelerating cities' transition to net zero emissions by 2030, Grant Agreement n. 101036519 selected under the Green Deal call topic LC-GD-1-2-2020 “Towards Climate-Neutral and Socially Innovative Cities”.

³⁹⁴ Including for persons with disabilities and older persons and ensuring access to essential services for all, in line with the European Pillar of Social Rights

³⁹⁵ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en

citizen-driven and systemic solutions and innovations to specific global challenges, will also contribute to the Cities Mission in particular EIT Climate-KIC, EIT InnoEnergy and EIT Urban Mobility.

Proposals should set out a credible pathway to contributing to the main objectives of the Cities Mission, and more specifically to the following impacts:

- Capacity building among European cities, in particular the 100 cities under the Cities Mission, to design and roll out their Climate City Contracts³⁹⁶ and reach climate neutrality by 2030;
- Sector integration, cross-sectorial collaboration and synergies, supported by digital solutions, new value chains for increased energy and resource efficiency, better performing grids, resilience in cities and surroundings/ urban areas, communities and infrastructures, and enhanced competitiveness of the European industry;
- Deployment of inclusive, replicable deep renovation, renewable energy, demand response, heating & cooling as well as system integration solutions including for different building types; establishment of participatory system integration projects, renewable & citizens' energy communities and intensified city-business collaboration in related energy transition planning and implementation, prevention and reduction of energy poverty;
- Deployment and increased modal share of inclusive, clean, shared and alternative mobility modes and services in urban and peri-urban areas while internalizing the negative externalities of transport such as traffic congestion, air and noise pollution, road collisions and accidents, as well as contribution to avoid mobility-poverty;
- Establishment of innovative and inclusive local and/or regional governance models and institutional partnerships and frameworks to increase the innovation capacity of local/regional administrations and foster integrated cross-sectorial planning approaches and accelerate the take-up of innovative smart solutions in key areas such as energy, transport, spatial planning, environment, industry and SMEs, digitisation and (big) data handling;
- Development of new co-creation and co-management methods and approaches based on co-creation that ensure a better engagement of citizens and stakeholders, longer-term planning certainty and a better integration of their needs within the community's strategies and plans;

³⁹⁶ The concept of Climate City Contract (CCC) was proposed by the Mission Board for Climate-Neutral and Smart Cities (https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/climate-neutral-and-smart-cities_en#documents). The CCC is meant to enable the city authorities to develop clear plans for climate neutrality by 2030 and to signal their firm commitment to mainstream these commitments into their overall city planning processes. The CCC will include an investment plan to scale up and deploy innovative solutions for delivering on the commitments.

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- Establishment/development of interoperable, scalable and replicable digital innovative solutions across the Mission's cities, using shared standards and data models, open Application Programming Interfaces (APIs), and open source software where relevant;
- Contribute to the availability of relevant data in the European common Data spaces for Mobility, Green Deal and Energy to enable further reuse of information to support the wider community;
- Increased synergies and complementarities with all the relevant EU policies, programmes and initiatives linked to cities, in particular the DIGITAL programme and the Covenant of Mayors for Climate and Energy.

The following call(s) in this work programme contribute to this mission:

Call	Budgets (EUR million)		Deadline(s)
	2021	2022	
HORIZON-MISS-2021-CIT-01	4.00		14 Sep 2021
HORIZON-MISS-2021-CIT-02	117.00		26 Apr 2022
HORIZON-MISS-2022-CIT-01		42.00	06 Sep 2022
Overall indicative budget	121.00	42.00	

Call - Supporting the transition towards climate neutrality within cities

HORIZON-MISS-2021-CIT-01

Conditions for the Call

Indicative budget(s)³⁹⁷

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ³⁹⁸	Number of projects expected to be funded
		2021		
Opening: 22 Jun 2021 Deadline(s): 14 Sep 2021				
HORIZON-MISS-2021-CIT-01-01	CSA	2.00 ³⁹⁹	Around 2.00	1
HORIZON-MISS-2021-CIT-01-02	CSA	2.00 ⁴⁰⁰	Around 2.00	1
Overall indicative budget		4.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.

³⁹⁷ 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 years 2021 and 2022.

³⁹⁸ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

³⁹⁹ Of which EUR 2.00 million from the 'Climate, Energy and Mobility' budget.

⁴⁰⁰ Of which EUR 2.00 million from the 'Climate, Energy and Mobility' budget.

*Horizon Europe - Work Programme 2021-2022
Missions*

<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-CIT-01-01: Supporting national, regional and local authorities across Europe to prepare for the transition towards climate neutrality within cities

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 2.00 million.
<i>Type of Action</i>	Coordination and Support Actions

Expected Outcome:

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

- National, regional and local authorities in EU Member States and countries associated to Horizon Europe are well prepared for the transition towards climate neutrality within cities by national capacity and knowledge building in close co-operation with the Preparatory action ‘Coordination of complementary actions for missions’.
- Accelerated systemic transition to climate-neutrality for European cities by preparing local authorities to meet the overarching objectives of the European Green Deal⁴⁰¹ and the specific targets established by the Sustainable and Smart Mobility Strategy⁴⁰², the upcoming New EU Strategy on Adaptation to Climate Change⁴⁰³, the Renovation Wave

⁴⁰¹ COM(2019) 640 final: The European Green Deal <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019DC0640&from=EN>

⁴⁰² COM(2020) 789 final: Sustainable and Smart Mobility Strategy – putting European transport on track for the future_ <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0789&from=EN>

⁴⁰³ <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12381-EU-Strategy-on>

for Europe Strategy⁴⁰⁴, the European Climate Pact⁴⁰⁵ and the 2030 Climate Target plan⁴⁰⁶.

- Enhanced synergies and common action points with the Urban Agenda for the EU⁴⁰⁷ in the areas of better regulation, funding and knowledge through interactions with the Urban Agenda Thematic Partnerships⁴⁰⁸ as well as the European Urban Initiative⁴⁰⁹.
- Identification of country-specific challenges and opportunities in terms of regulatory framework, funding and financing, urban morphology and governance structures promoting exchange of best-practices.
- Enhanced synergies with R&I national/international communities and partnerships (such as the proposed 'Driving Urban Transitions to a Sustainable Future' Horizon Europe Partnership), including the City Science Initiative network promoting evidence-based policy making.
- Define user requirements, while disseminate and promote the use of self-assessment toolkits and mappings adapted to national, regional and local challenges and opportunities.

Scope: Cities are at the forefront of the transition towards greater sustainability. An increasing number of European cities are active pursuing the transition towards climate-neutrality, aligning with the objectives set by the European Green Deal Strategy. Furthermore, the Sustainable and Smart Mobility Strategy, calls for having at least 100 climate neutral cities in Europe by 2030. The Communication on the European Climate Pact calls for a large engagement of all relevant actors to build a greener Europe and support the achievement of the Agenda 2030 on Sustainable Development Goals⁴¹⁰, bringing together regions, local communities, civil society, industry, social partners and schools.

While willing to commit to start the path towards climate neutrality, cities are also being confronted with national, regional and local specificities, which create both challenges and opportunities. Member States and Associated countries are characterized by inherent diversities and needs when addressing legislations and regulations, funding and financing

⁴⁰⁴ COM(2020) 662 final: A Renovation Wave for Europe - greening our buildings, creating jobs, improving lives_ https://ec.europa.eu/energy/sites/ener/files/eu_renovation_wave_strategy.pdf

⁴⁰⁵ COM(2020) 788 final: European Climate Pact <https://europa.eu/climate-pact/system/files/2020-12/20201209%20European%20Climate%20Pact%20Communication.pdf>

⁴⁰⁶ COM(2020) 562 final: Stepping up Europe's 2030 climate ambition <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0562&from=EN>

⁴⁰⁷ <https://ec.europa.eu/futurium/en/urban-agenda>

⁴⁰⁸ [https://ec.europa.eu/info/eu-regional-and-urban-development/topics/cities-and-urban-development/urban-agenda-](https://ec.europa.eu/info/eu-regional-and-urban-development/topics/cities-and-urban-development/urban-agenda-eu_en#:~:text=The%20urban%20agenda%20for%20the%20EU%20addresses%20problems%20facing%20cities,pass%20better%20laws)

⁴⁰⁹ [eu_en#:~:text=The%20urban%20agenda%20for%20the%20EU%20addresses%20problems%20facing%20cities,pass%20better%20laws](https://ec.europa.eu/info/eu-regional-and-urban-development/topics/cities-and-urban-development/urban-agenda-eu_en#:~:text=The%20urban%20agenda%20for%20the%20EU%20addresses%20problems%20facing%20cities,pass%20better%20laws)

⁴⁰⁹ https://ec.europa.eu/regional_policy/sources/docgener/brochure/explanatory_memo_eui_post_2020_en.pdf

⁴¹⁰ A/RES/70/1: Transforming our world: the 2030 Agenda for Sustainable Development_ https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

needs and opportunities, as well as geographical, climatic and socio-cultural peculiarities. The uniqueness of the European cities requires tailored national support, translating the European objectives into the local ambitions while keeping citizens needs at the core.

Specific national networks for these cities will support translating and tailoring the goals of the European Green Deal Strategy and all relevant initiatives launched within this framework to the local specificities in close collaboration with national and local authorities, stakeholders and citizens.

The proposal should:

- In coordination with the ‘Missions Core Network’⁴¹¹, support the set-up of dedicated national networks for supporting cities in their transition towards climate neutrality in the form of multi-stakeholders national platforms, promoting collaboration, cross-learning and training, exchange and replication of best practices between the European, national, regional and local level.
- Mobilize and support a large number of urban authorities in engaging in climate-neutrality transitions in line with the overarching objectives of the European Green Deal, the Sustainable and Smart Mobility Strategy, the upcoming New EU Strategy on Adaptation to Climate Change, the Renovation Wave for Europe Strategy, the European Climate Pact and 2030 Climate Target plan;
- Disseminate and promote the use of supporting material for cities developed by the Direct Action grant Scientific and technical services by the Joint Research Centre – Mission on ‘Climate-neutral and smart cities’, included under Other Actions in Annex 12 of the Horizon Europe Work Programme 2021-2022 and other relevant initiatives (e.g. relevant material developed by the one-stop-shop to be established under the Horizon 2020 topic LC-GD-1-2-2020 on ‘Towards Climate-Neutral and Socially Innovative Cities’⁴¹²).
- Identify country-specific challenges, best-practices and opportunities concerning at least:
 - Regulatory Framework: including interaction between national, regional and local legislations/regulations relevant for the transition to climate neutrality at city level.
 - Funding and financing: through direct/indirect application of National Energy and Climate Plans (NECPs)⁴¹³, Cohesion Policy Funds and Recovery and Resilience Facility provisions.

⁴¹¹ As described by the Horizon Europe Missions Work Programme 2021 call: HORIZON-MISS-2021-COOR-01 - Coordination of complementary actions for missions

⁴¹² <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/lc-gd-1-2-2020>

⁴¹³ https://ec.europa.eu/info/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

- o Urban morphology: through the mapping of geographical, climatic and socio-cultural contexts.
- o Governance structures: through analyses of citizens' and stakeholders' roles in decision-making processes, existing living labs and hubs for innovative participative governance.

In order to support cities in evidence-based policy making for climate-neutrality, such investigation could benefit from the experience of the Joint Research Centre and relevant initiatives as the Community of Practice on Cities⁴¹⁴ and the City Science Officers Initiative network⁴¹⁵. The results should aim at supporting local authorities' capacity building through dedicated activities such as: trainings, webinars and peer-exchange.

Applicants must take into account and assure that national hubs build on planned or ongoing national, regional or local activities aimed at achieving climate-neutrality in cities. The action should substantially raise the capacities and extend capabilities of existing national networks and hubs.

HORIZON-MISS-2021-CIT-01-02: Collaborative local governance models to accelerate the emblematic transformation of urban environment and contribute to the New European Bauhaus initiative and the objectives of the European Green Deal

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 2.00 million.
<i>Type of Action</i>	Coordination and Support Actions

Expected Outcome: The action aims at contributing to the objectives and impacts as set-out in the mission introduction, specifically focusing on the renovation of urban spaces combining sustainability, accessibility and aesthetics in a human-centred way. The action will also provide the ground for reflecting the values and principles promoted by the New European Bauhaus initiative⁴¹⁶ into climate-neutral urban quality transformations, identifying co-creative governance models where citizens and stakeholders' needs and expectations are at the centre. The New European Bauhaus was launched in the frame of the Renovation Wave

⁴¹⁴ The Community of Practice-CITIES (CoP-CITIES) is an initiative of the European Commission (co-led by the JRC and DG REGIO). It is open to external stakeholders such as cities and networks of cities, international and intergovernmental organisations and research bodies. <https://ec.europa.eu/jrc/communities/en/community/cop-cities>

⁴¹⁵ The initiative aims to develop and implement and Urban Science Academy to better connect universities-cities and businesses. It is currently framed in the context of the Community of Practice on Cities. <https://ec.europa.eu/jrc/communities/en/community/city-science-initiative>

⁴¹⁶ https://europa.eu/new-european-bauhaus/index_en

for Europe Strategy⁴¹⁷ to act as design lab, accelerator and network at the same time to support the effort of making the Green Deal a cultural, human centred and positive, “tangible” experience.

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

- Accelerate the transition to full climate-neutrality for all European cities aligning with the objective of the European Green Deal, while contributing to the New European Bauhaus initiative;
- Contribute to the objectives of the Renovation Wave for Europe Strategy, the upcoming New EU Strategy on Adaptation to Climate Change⁴¹⁸, the European Climate Pact⁴¹⁹, the 2030 Climate Target plan⁴²⁰, the Davos Declaration ‘Towards a European vision of high-quality Baukultur’⁴²¹ as well as of the objectives of having 100 climate neutral cities by 2030 as targeted by the Sustainable and Smart Mobility Strategy⁴²²;
- Increase awareness among local authorities and citizens on the New European Bauhaus⁴²³ and the benefits of a climate-neutral urban transition as an opportunity to re-think and co-create qualitative, sustainable, inclusive and aesthetical urban spaces.
- Support for local authorities and citizens’ in identifying emblematic projects to transform the quality, sustainability, inclusivity and aesthetics of public landscapes, building upon existing initiatives at national level.

Scope: In order to contribute to the European Green Deal objectives of climate-neutrality, sustainability, prosperity and inclusiveness, cities will have to undergo a rapid and radical transformation and come up with creative, sustainable and collaborative solutions. Urban areas are characterized by diversity of resources, services, communities, interests and needs, which converge into public spaces design and management. A well co-designed public space provides the unique opportunity to improve its climate-neutrality (i.e. using bio-based and natural materials, nature based solutions, introducing new green spaces and circular economy concepts all across the construction life-cycle, new forms of work and commuting patterns, renewable energies, energy efficient lighting, smart digital services etc.) while increasing their attractiveness and social inclusiveness. As promoted by the New European Bauhaus initiative, a systemic co-designed approach to ‘quality climate-neutral urban transformation’ can create living space, where the best technical performances meet citizens’ social, emotional, cultural and aesthetic needs and values.

⁴¹⁷ https://ec.europa.eu/energy/sites/ener/files/eu_renovation_wave_strategy.pdf

⁴¹⁸ <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12381-EU-Strategy-on->

⁴¹⁹ COM(2020) 788 final: European Climate Pact_ <https://europa.eu/climate-pact/system/files/2020-12/20201209%20European%20Climate%20Pact%20Communication.pdf>

⁴²⁰ COM(2020) 562 final: Stepping up Europe’s 2030 climate ambition <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0562&from=EN>

⁴²¹ <https://davosdeclaration2018.ch/media/Context-document-en.pdf>

⁴²² COM(2020) 789 final: Sustainable and Smart Mobility Strategy – putting European transport on track for the future_ <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0789&from=EN>

⁴²³ https://ec.europa.eu/commission/presscorner/detail/en/FS_20_1894

Proposals should include the following activities:

- Developing innovative and collaborative models of local governance to engage with citizens and local stakeholders in order to identify urban emblematic projects that simultaneously address the three dimensions of sustainability (including circularity), quality of experience (including aesthetics) and inclusion (including accessibility and affordability).
- Supporting cities in engaging with e.g. schools, universities, culture and arts professionals and institutions, citizens and civil society to harvest the needs, trends, challenges and expectations of citizens and communities in terms of quality climate-neutral urban transformation, in line with the New European Bauhaus initiative's objectives and to start exploring how to match those needs with the existing possibilities.
- Promoting the New European Bauhaus principles among national, regional and local authorities, citizens and stakeholders through dedicated local initiatives (i.e. events, contests, citizens' dialogues, living labs) and the development of a dedicated platform for sharing of experience and good practices on participatory governance and co-design at local level.

The project should work in close co-operation with the Horizon Europe Preparatory action 'Coordination of complementary actions for missions' (HORIZON-MISS-2021-COOR-01) and with the one stop shop platform to be established under the Horizon 2020 topic LC-GD-1-2-2020 on 'Towards Climate-Neutral and Socially Innovative Cities'⁴²⁴ while embedding citizens social, emotional, cultural and aesthetic needs and values.

The project should as well work in close collaboration with other complementary support actions that will be established in the frame of the New European Bauhaus, such as the technical assistance⁴²⁵ to be published indicatively in Q2 2021 under the European Regional Development and Cohesion Funds.

Call - Research and Innovation actions to support the implementation of the Climate-Neutral and Smart Cities Mission

HORIZON-MISS-2021-CIT-02

Conditions for the Call

Indicative budget(s)⁴²⁶

⁴²⁴ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/lc-gd-1-2-2020>

⁴²⁵ <https://ted.europa.eu/>

⁴²⁶ 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 years 2021 and 2022.

Horizon Europe - Work Programme 2021-2022
Missions

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁴²⁷	Number of projects expected to be funded
		2021		
Opening: 11 Jan 2022 Deadline(s): 26 Apr 2022				
HORIZON-MISS-2021-CIT-02-01	IA	35.00 ⁴²⁸	11.00 to 12.00	3
HORIZON-MISS-2021-CIT-02-02	IA	40.00 ⁴²⁹	12.00 to 20.00	3
HORIZON-MISS-2021-CIT-02-03	FPA			1
HORIZON-MISS-2021-CIT-02-04	IA	40.00 ⁴³⁰	15.00 to 20.00	2
HORIZON-MISS-2021-CIT-02-05	CSA	2.00 ⁴³¹	Around 2.00	1
Overall indicative budget		117.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and</i>	The criteria are described in General Annex

⁴²⁷ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁴²⁸ Of which EUR 9.46 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 3.52 million from the 'Digital, Industry and Space' budget and EUR 0.85 million from the 'Civil Security for Society' budget and EUR 20.75 million from the 'Climate, Energy and Mobility' budget and EUR 0.44 million from the 'Culture, creativity and inclusive society' budget.

⁴²⁹ Of which EUR 10.81 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 4.02 million from the 'Digital, Industry and Space' budget and EUR 23.71 million from the 'Climate, Energy and Mobility' budget and EUR 0.97 million from the 'Civil Security for Society' budget and EUR 0.50 million from the 'Culture, creativity and inclusive society' budget.

⁴³⁰ Of which EUR 10.81 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 4.02 million from the 'Digital, Industry and Space' budget and EUR 0.97 million from the 'Civil Security for Society' budget and EUR 23.71 million from the 'Climate, Energy and Mobility' budget and EUR 0.50 million from the 'Culture, creativity and inclusive society' budget.

⁴³¹ Of which EUR 0.54 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.20 million from the 'Digital, Industry and Space' budget and EUR 0.05 million from the 'Civil Security for Society' budget and EUR 1.19 million from the 'Climate, Energy and Mobility' budget and EUR 0.02 million from the 'Culture, creativity and inclusive society' budget.

Horizon Europe - Work Programme 2021-2022
Missions

<i>exclusion</i>	C.
<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-CIT-02-01: Urban planning and design for just, sustainable, resilient and climate-neutral cities by 2030

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 11.00 and 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 35.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p> <p>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).</p> <p>The following additional eligibility criteria apply:</p> <p>Each action must include pilot demonstrations in at least four cities⁴³² situated each in different Member States or Associated Countries to demonstrate how urban planning and design can be optimally deployed</p>

⁴³² Their local authorities or their mandated representatives may represent one city defined as a Local Administrative Unit (LAU), or a “greater city” or metropolitan region, taking account of Functional Urban Areas (FUA) where relevant.

	<p>to develop and implement their climate action plan to achieve climate neutrality and significantly reduce GHG emissions⁴³³ by 2030. In line with the principles of the Cities Mission, this topic targets cities with more than 50 000 inhabitants with enhanced replicability and up-scalability potential.</p>
<p><i>Legal and financial set-up of the Grant Agreements</i></p>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Grants awarded under this topic will be linked to the following action(s):</p> <p>HORIZON-MISS-2021-CIT-02-03</p> <p>Collaboration with the Mission Platform is essential and projects should ensure that appropriate provisions for activities and resources aimed at enforcing this collaboration are included in the workplan of the proposal. The collaboration with the Mission Platform should be formalised through a Memorandum of Understanding to be concluded as soon as possible after the projects starting date.</p> <p>The following cost categories will be ineligible costs: funding for major infrastructure works⁴³⁴ which could normally be funded under other EU programs (e.g. EU Structural and Investment Funds).</p>

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

- Contribution to the implementation of the Climate-Neutral and Smart Cities Mission, the Zero Pollution Action Plan, the Biodiversity Strategy, Fit for 55 Strategy, Circular Economy Action Plan, the Urban Agenda for the EU, the New Leipzig Charter, the European partnership on Driving Urban Transitions for a sustainable future (DUT) and the New European Bauhaus Initiative, in line with the European Green Deal ambition and objectives;
- Transparent and efficient decision-making processes for people-centric urban planning and design for climate neutral cities achieved through innovative collaborative methods such as co-creation, living labs, crowdsourcing, crowdfunding, collective intelligence and collaborative economy in combination with technological innovations, data-driven approaches and enhanced cross-sectoral integration;

⁴³³ A GHG reduction by at least 55% by the end of the projects as foreseen by the EU's Fit for 55 package of climate and energy laws is the minimum ambition for the cities participating in demonstration actions under this topic

⁴³⁴ Infrastructure deployed to improve the long-term functionality, sustainability, resilience and liveability of the city (such as e.g. constructions works, road works, urban renovations, construction of buildings and other major public works) well beyond the R&I needs of the project.

- Effective management of trade-offs and ownership of transformative changes through the engagement and empowerment of stakeholders, citizens and inhabitants, paying special attention to vulnerable and at-risk for precarity social groups and communities, including people with disabilities, older people and youth;
- Innovative urban planning and design practices, harnessing, compiling and mainstreaming local knowledge, creativity, ingenuity and design quality, triggering behavioural and lifestyles changes and fostering co-created approaches, holistic responses to interlinked challenges within a city, and effective use of digital tools, such as Digital Twins, for solutions drawing on cross-domain data e.g. through data shared via data space for smart communities and sectoral data spaces;
- Solutions that ensure a more equitable, just, synergetic and optimal use of urban spaces integrating well-balanced built/green/blue/accessible infrastructures and biodiversity-friendly nature-based solutions for attractive, circular, healthy, resilient, secure and liveable cities with thriving citizens, communities, ecosystems and biodiversity and reduced urban environmental footprint.

Scope: Global challenges such as climate change, biodiversity loss, pandemic, pollution and irreversible depletion of natural resources demand cities to engage in urgent and decisive systemic transitions towards climate neutrality, sustainability and resilience in line with the European Green Deal.

Current urban planning and design practices, governance arrangements, business models and institutional settings tend to favour sectorial rather than systemic interventions that are in line with holistic urban ecosystem planning and policy agendas. This often results in the deployment of conflicting solutions and interventions, with wasteful use of investments and resources. However, the transition to climate neutrality will require significant reductions in GHG emissions across a range of sectors such as urban mobility, energy efficiency in buildings, water and waste management as well as the (re)design, adaption or retrofitting of urban spaces/cities, building stock and infrastructures along with the development of more efficient management strategies based on sensor data and novel analysis methods. Retrofitting of buildings is an opportunity to, simultaneously and in a cost-efficient way, improve aspects related to health, safety, accessibility and overall quality of life.

The overall aim of this topic is to support a diverse range of urban areas across Europe (e.g. small and medium sized, port cities, cities with different geographical, climatic, socioeconomic conditions, levels of preparedness etc.), their urban authorities, stakeholders and citizens to identify, plan, design, fund, roll out and replicate solutions and measures in order to achieve climate neutrality, sustainability and resilience and significantly reduce emissions across the most relevant sectors by 2030.

Long-term integrated, visionary, people-centric urban planning and design practices are needed to enable the transition toward just, sustainable, resilient and climate neutral cities. This requires the setup of new collaborative frameworks, novel inter-institutional settings and innovative services and tools harnessing local citizen knowledge, social innovation, new

technologies and digitalisation to ensure cross-sectorial (e.g. infrastructures, transport, energy, water, built environment and natural environment) interventions, full engagement and informed participation of citizens and communities and trigger necessary behavioural and lifestyles changes.

Proposals should set up innovative urban planning and design practices that result in flexible building/design regulations and instruments, that harmonize high quality place making, mix-land use, compact urban fabrics and well-balanced densities with equitable access to amenities.

The new urban planning and design practices and tools should aim at climate neutrality and a significant reduction in emissions by 2030. They should also aim to respect the urban form and typology, its aesthetics, character and identity while facilitating circularity and the use of innovative and clean building technologies, materials and construction techniques, in line with the guiding principles of the European Green Deal and the New European Bauhaus initiative. The resulting practices and tools should seek to maximize the economic, social, environmental and health benefits for all groups and communities, including groups that are vulnerable to exclusion, while averting spatial segregation, urban sprawl, gentrification and real estate speculation and increasing resilience to climate related hazards.

Proposals should use as necessary existing or improved state-of-the-art tools and methods for visualising, modelling, predicting, stimulating and analysing scenarios, assessing feasibility and cost-effectiveness of solutions, integrating existing and emerging data and tools, including under relevant EU laws and initiatives (e.g. air quality plans, Sustainable Energy and Climate Action Plans, Sustainable Urban Mobility Plans, local digital twins etc.). They should deliver evidence-based guidelines and practical recommendations for the effective and optimal use of urban planning and design practices.

In line with the objectives of the European Green Deal, the EU Biodiversity⁴³⁵ and Climate Adaptation⁴³⁶ strategies, the Circular Economy⁴³⁷ and the Zero Pollution⁴³⁸ plans, the portfolio of the proposed solutions should prioritize to the greatest extent possible the deployment of biodiversity-friendly nature-based solutions⁴³⁹ and ecosystem-based approaches to harness their multi-beneficial, cost-effective, environmentally friendly, biodiversity, health and well-being enhancing potential.

Each action must envisage pilot demonstrations in at least four cities⁴⁴⁰ situated each in different Member States or Associated Countries together with at least four replication/follower cities, to demonstrate how inclusive, accessible (including for persons with disabilities), integrated, cross-sectoral and creative human-centred planning can be

⁴³⁵ [Biodiversity strategy for 2030 \(europa.eu\)](#)

⁴³⁶ [EU Adaptation Strategy | Climate Action \(europa.eu\)](#)

⁴³⁷ [A new Circular Economy Action Plan \(europa.eu\)](#)

⁴³⁸ [Zero pollution action plan \(europa.eu\)](#), notably Flagship 2 that aims to “identify key urban greening and innovation needs to prevent pollution, including indoors”

⁴³⁹ Taking into account as relevant the knowledge produced under the portfolio of Horizon 2020 projects on nature-based solutions, see [Nature-based solutions | European Commission \(europa.eu\)](#)

⁴⁴⁰ City, district, or other relevant urban scales with enhanced replicability and up-scalability potential

optimally deployed to develop and implement their climate action plans to achieve the climate neutrality and GHG reduction objectives by the set timeline. This should include (re)designing, adapting or retrofitting urban spaces/cities, building stock, neighbourhoods or districts and infrastructures that urban authorities commit to implement during the life of the project to achieve sustainability, resilience and climate neutrality, and drastically reduce their GHG emissions by 2030 as compared to an agreed baseline established at the start of the project to enable monitoring and assessment of the progress.

A strong and transparent monitoring system using established tools, practices, methodologies and agreed KPIs, and the advisory services of the Mission Platform⁴⁴¹ should be established to measure and monitor progress.

The replication/follower cities⁴⁴² should be each situated in different Member States or Associated Countries and should commit to a strategy of climate neutrality as soon as possible and of course no later than 2050. They must be fully involved in the project from the beginning and commit sufficient resources to develop under the guidance and mentoring of the leading cities and deliver by the end of the life of the project their integrated, inclusive, and cross-sectorial urban planning and design to achieve climate neutrality, sustainability and resilience and significantly reduce GHG emissions across the most relevant sectors as soon as possible, and no later than 2050. Unlike for the leading cities, actual deployment of the solutions during the life of the project is not expected from the replication/follower cities.

Actions and applicant cities will be assessed according to the dedicated support to replication/follower cities and the level of their ambition and commitment for inclusiveness in the co-created planning and design elaboration processes and the actual deployment during the life of the project of the solutions jointly decided during this process. To this end, actions should provide the necessary evidence, such as commitment letters by the competent urban authorities that they will honour the planning decisions and commit necessary financial resources for their implementation during the life of the project.

To facilitate replication, upscaling and up-taking of the generated outcomes and to foster capacity building/upskilling of public authorities, local actors and communities, actions should engage in ambitious outreach, communication, dissemination and training activities in coordination and complementarity with the Mission Platform.

To facilitate replication and reuse of the solutions developed as part of these actions, use of open source software, open standards and technical specifications⁴⁴³ re-use of building blocks

⁴⁴¹ Conceived through the Horizon 2020 project NetZeroCities - Accelerating cities' transition to net zero emissions by 2030, Grant Agreement n. 101036519, selected under the Horizon 2020 Green Deal call topic *LC-GD-1-2-2020: Towards Climate-Neutral and Socially Innovative Cities* and to be scaled up through the topic *HORIZON-MISS-2021-CIT-02-03: Framework Partnership Agreement (FPA) for the Climate-Neutral and Smart Cities Mission Platform*

⁴⁴² Replication/follower cities do not have to comply with the “more than 50 000 inhabitants” population criterion that applies for the leading cities under this call

⁴⁴³ For example, the Minimal Interoperability Mechanisms (MIMs Plus) developed by Living-in.eu (<https://living-in.eu/groups/commitments/technical>) and the [European Interoperability Framework](#)

and interoperability solutions⁴⁴⁴ and sharing data through EU data spaces are encouraged if and where appropriate.

Actions should explore opportunities and plan, undertake and report on activities for synergies, collaboration, clustering and possibly twinning activities with other relevant like-minded projects funded under this topic and other relevant topics in this and future Climate-Neutral and Smart Cities Mission (hereafter referred to as the Cities Mission) work programmes and calls and initiatives undertaken by the Mission Platform, the European partnership on Driving Urban Transitions for a sustainable future (DUT), the upcoming European Urban Initiative of Cohesion Policy, the Urban Agenda for the EU⁴⁴⁵, Living-in.eu and the New European Bauhaus Initiative as well as smart specialisation partnerships in relevant areas.

The projects funded under this topic must establish a collaboration agreement, to identify clear links among themselves and ensure complementarity, coordination and exchange on relevant linked activities. The selected projects should also foresee active collaboration with relevant and related projects funded under this call in order to address synergies and complementarities between the projects of the Cities Mission portfolio. In particular collaboration with the Mission Platform (HORIZON-MISS-2021-CIT-02-03) is essential and projects should ensure that appropriate provisions for activities and resources aimed at enforcing this collaboration are included in the workplan. Detailed description of the specific activities and common actions that will be undertaken is not required at proposal stage and can be further defined at a second stage during the lifetime of the projects. The collaboration with the Mission Platform should be formalised through a Memorandum of Understanding to be concluded as soon as possible after the projects starting date.

Inter- and trans-disciplinary consortia combining expertise and capacity from public authorities, urban stakeholders, infrastructure providers, knowledge institutions, planners, cultural and creative organizations, entrepreneurs, societal actors and citizens are necessary to address the challenges of this topic. Inclusion of social sciences and humanities, behavioural sciences and gender issues as well as expertise in planning and design is essential.

To support project implementation, applicants may seek possibilities of involving the European Commission's Joint Research Centre (JRC) in order to valorise the relevant expertise and physical facilities of JRC in demonstrating and testing energy, buildings and mobility applications at the JRC living labs and research infrastructures.

⁴⁴⁴ These include the assets and solutions available through CEF Digital Building Blocks and ISA2 and which will be made available on [Joinup](#) under the future DIGITAL Europe Programme Work Programme 2021-2022.

⁴⁴⁵ The upcoming European Urban Initiative (foreseen Q2/2022) will offer coherent support to cities by addressing the wealth of support and tools available for cities under Cohesion policy and beyond, and will also provide support to the Urban Agenda for the EU (https://ec.europa.eu/regional_policy/en/newsroom/news/2021/05/05-10-2021-a-new-step-towards-setting-up-of-the-european-urban-initiative-supported-by-erdf)

HORIZON-MISS-2021-CIT-02-02: Unleashing the innovation potential of public transport as backbone of urban mobility

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 12.00 and 20.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 40.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>The following additional eligibility criteria apply: Applicant cities must have a Sustainable Urban Mobility Plan (SUMP)⁴⁴⁶, fully developed or in the preparatory phase, and project actions should link to it.</p>
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Grants awarded under this topic will be linked to the following action(s):</p> <p>HORIZON-MISS-2021-CIT-02-03</p> <p>Collaboration with the Mission Platform is essential and projects should ensure that appropriate provisions for activities and resources aimed at enforcing this collaboration are included in the workplan of the proposal. The collaboration with the Mission Platform should be formalised through a Memorandum of Understanding to be concluded through the CIVITAS initiative as soon as possible after the projects starting date.</p> <p>The following cost categories will be ineligible costs: funding for major infrastructure works⁴⁴⁷ which could normally be funded under other EU programs (e.g. EU Structural and Investment Funds).</p>

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

⁴⁴⁶ <https://www.eltis.org/mobility-plans>

⁴⁴⁷ Infrastructure deployed to improve the long-term functionality, sustainability, resilience and liveability of the city (such as e.g. constructions works, road works, urban renovations, construction of buildings and other major public works) well beyond the R&I needs of the project.

- Contribute to the objectives of the Climate-Neutral and Smart Cities Mission by accelerating the transition towards climate neutrality in cities;
- Develop and implement a convincing approach to explore, test and evaluate the resilience and adaptability of urban public transport and promote its accrued use in line with the priorities of the European Green Deal, as part of the wider integrated urban and peri-urban mobility system;
- Using innovative co-creation methods involving a wide range of stakeholders (e.g. public transport employees, passengers, the city authority), improve the overall public transport offer and its attractiveness in line with users' needs and expectations, including affordability, inclusiveness and ensuring equal access for reduced mobility;
- Using simulation tools and data, understand and trigger behaviour change in favour of public transport;
- Understand dependencies between public transport and active travel modes including requirements towards multi-modal hubs and access-infrastructures;
- Increase the share of public transport (modal split) in the modal distribution of motorized transportation by approximately 30% ⁴⁴⁸ in the cities involved in the projects ⁴⁴⁹ compared to their baseline at the start of the project and cover different market/customer segments, aiming at catering for specific needs of specific target groups, e.g. a better social inclusion and healthier lifestyles, envisioning a social optimum and the concept of Mobility as a Right;
- Increase user satisfaction with public transport by 25% compared to the baseline;
- Identify lessons and mutual learning at European level facilitating replication, upscaling and up-taking of the tested blueprints;
- Put in place or update a local policy framework for public transport, in line with the Sustainable Urban Mobility Plans (SUMP) guidelines and spatial planning, including clear commitments from the relevant authorities to implement it in the short and medium term.

Scope: The European Green Deal demands ambitious decarbonisation and pollution targets and a socially just transition to mitigate related pricing policies. The Climate-Neutral and

⁴⁴⁸ The call acknowledges that reaching the suggested target share of public transport will be difficult for cities where a large portion of the population is engaged in active travel modes, and it would be counter-productive to the climate-objectives of the Mission to move these active travel users to public transport

⁴⁴⁹ Three cities acting as living labs from different Member States or Associated Countries should be involved/project, together with three twinning cities. An appropriate budget should be reserved to the twinning cities to deliver on their objectives within the project. The living labs should cover the full local transport catchment area or commuting zone of an urban core (or functional urban area). The key elements of living labs are: active user involvement, multiple-stakeholder platform for innovation in real-life contexts, multi-method, and co-creation approach.

Smart Cities Mission, hereafter referred to as the Cities Mission, will support at least 100 cities in becoming climate neutral by 2030 and use these cities as innovation hubs for all cities to become climate neutral by 2050. Achieving this objective requires a systemic approach by the cities to reduce all GHG emissions, in particular in the mobility sector.

Public transport should continue to be the backbone of urban mobility, offer access and remain accessible at a reasonable cost. Public transport concepts also need to consider and include the needs of pedestrians, cyclists, scooters etc. Urban public transport needs to be understood in a broad sense including peri-urban areas and commuter belt. At the same time, Covid-19 and similar events can undermine trust between operators and passengers. Attractive, safe and secure mass transit accessibility is essential for cities that expect sprawl, population increase and economic growth. Public transport not only helps achieve environmental goals, but also plays a key role in the economy and job creation and in promoting territorial accessibility. In addition, public transport is intrinsic to the EU pillar of social rights as regards “Access to essential services”. As such, it should cater to the widest possible array of user groups and their needs. This includes persons irrespective of gender, age, disability, income, education level, and digital experience. Moreover, where public transport is widely accessible, there is increased road safety.

The objective of this call is to increase the uptake of replicable public transport solutions in the living labs involved in the proposals while facilitating joint lesson-drawing and learning at European level. The funded actions will contribute to the objectives of the Cities Mission and to the priorities of the European Green Deal, which stresses that “transport should become drastically less polluting, especially in cities. A combination of measures should address emissions, urban congestion and improved public transport”.

New approaches and financing models are emerging. A secure, efficient, clean, reliable, attractive and affordable public transport is essential to address the variety of mobility needs. At the same time, it can become a silver bullet for reducing transport’s negative externalities.

Projects should enhance the public transport share in the modal distribution by 30% compared to the baseline defined for each experimentation site at the start of the project and against which progress will be assessed. The call invites proposals from consortia composed of living labs in at least four cities⁴⁵⁰ from different Member States or Associated Countries together with at least four twinning cities, where the responsible local authorities, public transport providers and other relevant actors team up to test and implement packages of technological and non-technological innovations and policy-based measures to improve the public transport offer in line with citizens’ needs. Twinning cities can be from the same Member State or Associated Country as the lead cities.

Proposals should aim to improve the competitiveness of public transport by implementing in the living labs integrated, complementary and reinforcing packages of urban mobility measures. The packages should combine “push measures” (e.g. congestion charges, parking charges or reduced parking supply) with “pull measures” (e.g. safe and secure transport hubs,

⁴⁵⁰ City, district, or other relevant urban scales with enhanced replicability and up-scalability potential

bus lanes, new zero emission rolling stock, Mobility As a Service (MaaS)/multimodal ticketing/digital payments-related incentives, facilitation of combining public transport with active modes, and an improved integration and interoperability with new mobility services).

The projects associated to this call topic should produce a comprehensive topic guide accompanying the SUMP guidelines, on public transport promotion, planning and inclusion into SUMP processes.

The package of measures could include newly-emerging technologies and soft measures such as marketing, real time information and awareness raising campaigns and co-creation of user-oriented solutions– with particular regard to the specific needs of diverse user groups (e.g. related to gender, age, disability, income, education level, and digital experience).

Proposals submitted could test the establishment of new operating and business models, where public transport providers and shared and/or on-demand mobility providers cooperate to offer services addressing user needs following the area's typology and characteristics. Drawing on digital solutions such as AI, Digital Twins and High Performance Computing, the research could look into public transport policy evolution, users' behaviour over time, free public transport and institutional and collaborative frameworks. Proposals could also consider new business/operational models to exploit the unused capacity of public transport passenger vehicles for freight and parcel transport (cargo hitching), exploring e.g. combination with active modes and silent, zero tailpipe emission vehicles for the last mile/metres.

Proposals should ensure that an appropriate geographical balance across Europe is achieved (also ensuring the inclusion of cities in less developed and peripheral regions) to maximise impact without leaving anyone behind, and by demonstrating commitment of cooperation with concrete activities.

To allow for a thorough evaluation, a clear baseline of the use of public transport should be established in each participating city from the start of the project including a detailed analysis of present and future potential user groups. Actions should provide qualitative and quantitative information on the results of the local solutions implemented. The effectiveness of the proposed measures in achieving the objectives set out by the topic, the local policy objectives should be evaluated against the baseline and the possible barriers to their broad take up, and deployment identified, together with recommendations on how to overcome them. This should be accompanied by mechanisms for common lesson drawing and learning, within the project, between the projects funded under this topic and through the CIVITAS Initiative.

Proposals must plan for an active collaboration amongst the projects selected under this topic - for dissemination, evaluation and coordination - facilitated by and within the CIVITAS initiative through the signature of a Memorandum of Understanding. Proposals should ensure that appropriate provisions for activities and resources aimed at enforcing this collaboration are included in the work-plan. Detailed description of the specific activities and common actions that will be undertaken is not required at proposal stage and can be further defined during the grant agreement phase. Collaboration with the Mission Platform (HORIZON-

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MISS-2021-CIT-02-03) is essential and should take place through the CIVITAS initiative. The latter should establish, through a collaboration agreement, clear links with the Mission portfolio for synergies and complementarities.

Proposals may include demonstrations, preparatory, take-up and replication actions, research activities, as well as tools to support local planning and policy making. A demonstrated contribution to the implementation of the cities' SUMP is expected, as well as integration with relevant other plans, such as air quality plans and noise management action plans⁴⁵¹.

Meaningful results can be shared with the upcoming European Urban Initiative of Cohesion policy and the Urban Agenda for the EU. Proposals could also engage with relevant smart specialisation partnerships or EIT Urban Mobility.

To facilitate replication, upscaling and uptaking of the generated outcomes and to foster capacity building/upskilling of public authorities, local actors and communities, actions should engage in ambitious outreach, communication, dissemination and training activities in coordination and complementarity with the Mission Platform.

Actions should envisage, as appropriate, collaboration with other relevant projects on testing integrated shared automated mobility solutions for people and goods (topic HORIZON-CL5-2022-D6-01-01) funded under the European Partnership on CCAM.

HORIZON-MISS-2021-CIT-02-03: Framework Partnership Agreement (FPA) for the Climate-Neutral and Smart Cities Mission Platform

Specific conditions	
<i>Type of Action</i>	Framework Partnership Agreement
<i>Procedure</i>	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be partially composed of representatives of EU institutions.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Grants awarded under this topic will be linked to the following action(s): HORIZON-MISS-2021-CIT-02-01 HORIZON-MISS-2021-CIT-02-02 HORIZON-MISS-2021-CIT-02-04 HORIZON-MISS-2022-CIT-01-01 The collaboration between the Mission Platform and the projects funded

⁴⁵¹ Under Directive 2008/50/EC and Directive 2002/49/EC

	under the above mentioned topics is essential to identify complementarities, avoid potential overlaps and ensure synergies among these projects. The collaboration should be formalised through a Memorandum of Understanding to be concluded as soon as possible after the projects starting date. In the case of projects funded under topics HORIZON-MISS-2021-CIT-02-02 and HORIZON-MISS-2022-CIT-01-01, the MoU should be established through the CIVITAS initiative.
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Expected Outcome: This Framework Partnership Agreement aims at contributing to the implementation of the Climate-Neutral and Smart Cities Mission, hereafter referred to as the Cities Mission, and its objective of achieving 100 climate-neutral and smart cities by 2030. This partnership will build on the precursor action funded through the Horizon 2020 Green Deal call topic LC-GD-1-2-2020: Towards climate-neutral and socially innovative cities⁴⁵². The Framework Partnership Agreement will establish the necessary framework and collaboration for implementing and scaling up the one-stop-shop platform dedicated to the Climate-Neutral and Smart Cities Mission, hereafter referred to as the Mission Platform. The Mission Platform will cater for the needs of all the cities that commit to the objectives of the Cities Mission and start the transition towards climate neutrality in a systemic and smart way, as they engage in the co-creation and subsequent implementation of a Climate City Contract, hereafter referred to as CCC. The Mission Platform will assist those cities that will be identified and selected as a result of the open Call for Expression of Interest which will be launched and managed by the European Commission during the last quarter of 2021⁴⁵³. Cities that are not yet able to commit to the Mission's timeline but are willing to commit to accelerate their transition towards climate neutrality within the timeframe 2030 to 2035 following the Cities Mission basic principles, will also receive basic support from the Mission Platform.

The Framework Partnership Agreement is expected to create the framework conditions and engage the needed competencies to contribute to all of the following expected outcomes:

- Operation of a fully functional Mission Platform that provides a wide range of tailor-made services to up to 150 cities participating in the Mission. Services cover technical, regulatory, financial and socio-economic expertise as well as assistance for developing and implementing the CCC and should complement and scale-up existing services

⁴⁵² Horizon 2020 Work Programme 2018-2020, Part 20. Cross-cutting activities, Call - Building a low-carbon, climate resilient future: Research and innovation in support of the European Green Deal: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/lc-gd-1-2-2020>. The Horizon 2020 project NetZeroCities - Accelerating cities' transition to net zero emissions by 2030, Grant Agreement n. 101036519 was selected under the Green Deal call topic LC-GD-1-2-2020 Towards Climate-Neutral and Socially Innovative Cities and started its activities on 1 October 2021.

⁴⁵³ Soon to be published on the Climate-neutral and smart cities Mission webpage : https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/climate-neutral-and-smart-cities_en

developed by the project funded under the Horizon 2020 Green Deal call topic LC-GD-1-2-2020: Towards climate-neutral and socially innovative cities.

- Consolidated science-based indicators and a common monitoring, reporting and verification framework for the cities participating in the Mission. This should build upon existing methodologies, including those already developed in the action funded through the Horizon 2020 Green Deal call topic LC-GD-1-2-2020, while ensuring coherent use and reporting regularly on the progress of cities towards the CCC.
- Smart and customised access for cities to the best available research, expertise, tools and technologies that can enable them to quickly identify and implement portfolios of innovative, high-impact interventions on a deep decarbonisation pathway.
- Establish and follow a common CCC process for the cities participating in the Mission. Share experiences and good practices and engage in mutual learning, including through twinning opportunities open to a wide spectrum of cities such as those in disadvantaged and peripheral regions.
- Calls for proposals are launched to support large-scale pilots for the deployment in participating Mission cities of systemic solutions working across functional silos and thematic areas (mobility, energy systems, built environment, industry, SMEs, material and resource flows, natural areas and nature-based solutions, cultural/social/financial/institutional systems, and accessible public spaces), in support of transforming systems.
- Web-based services and assistance to cities that are not yet in a position to commit to climate neutrality by 2030, but are ready to commit to accelerate their transition to climate neutrality in line with the Cities Mission principles. These cities will have the option to co-create a CCC with all stakeholders that will commit the city to undertake in a systemic way all actions needed for reaching climate neutrality in the period 2030-2035.
- Close coordination with the European Commission to ensure that advice and support provided to cities remains aligned to the latest policies and initiatives and makes full use of available tools and services provided or supported by the Commission.

Scope: Building on the concept developed through the Horizon 2020 Green Deal call topic LC-GD-1-2-2020: Towards climate-neutral and socially innovative cities and on the setup of a one-stop-shop platform as a first building block for the Mission Platform, to provide advisory services to cities committing to the transition towards climate neutrality, the Commission calls for a Framework Partnership Agreement to establish the necessary framework and collaboration for scaling up and implementing the concept and activities of a Mission Platform and to fully integrate this platform into the Cities Mission. Partners should possess good knowledge and expertise in European urban programmes and initiatives, urban planning, technological innovation for climate neutrality, social innovation and stakeholder engagement, knowledge valorisation and transfer, and funding and financing programmes

such as Horizon Europe, EU structural funds, EIB, EBRD etc. Partners should build on the experience developed by European and international umbrella organisations and networks such as the EIT-KICs, C40, Eurocities, CIVITAS, POLIS, ENoLL, Covenant of Mayors Europe/ Global Covenant of Mayors, European Digital Innovation Hubs, ICLEI etc.

The partners will be responsible for defining and enabling the framework conditions that will allow for the development of a fully-fledged Mission Platform that will be focused on delivering the Mission objective of achieving 100 climate neutral cities by 2030 and ensuring that these cities will act as innovation hubs for other European cities to follow, thus accelerating the transition to climate neutrality at city level. The Mission Platform will provide tailor-made services and targeted support for the cities participating in the Mission. It will also offer web-based assistance to European cities that are not yet ready to commit to climate neutrality by 2030, but are ready to commit to accelerate their transition in line with the Cities Mission principles.

Partners should develop a draft action plan to broadly address the main building blocks on which the FPA will operate, in particular: 1) Development, up-scaling of the concept of a Mission Platform and plan for the implementation of its associated services; 2) Co-creation of Climate City Contracts for the cities participating in the Mission; 3) Assistance and preparation of tailor-made investment plans, project preparation and finance for the cities participating in the Mission; 4) Launch and management of calls for large scale EU R&I demonstrators accelerating city climate-neutrality solutions.

The partnership will fulfil the following objectives:

- to fully develop and scale up the concept of a Mission Platform as the main delivery mechanism of the Cities Mission, through a demand-driven approach catering for the needs of up to 150 cities, providing tailored assistance and services through technical, regulatory, financial and socio-economic expertise as well as support to cities for developing and implementing their CCC including related investment plans, drawing where appropriate on existing tools and resources developed by the Commission, and ensuring alignment with evolving European policy developments and actions;
- to coordinate the group of cities embarking in the CCC process, defining and implementing a common framework for monitoring, reporting and verification of progress;
- to further facilitate the sharing of experience, good practices and mutual learning between cities, including additional twinning opportunities, thus enabling participating cities to act as experimentation and innovation hubs for other cities to follow in view of urban climate neutrality by 2050;
- to provide web-based assistance to European cities that are not yet ready to commit to climate neutrality by 2030, but are ready to engage to accelerate their transition in accordance with the Cities Mission principles;

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- to launch large-scale pilots to act as demonstrators for the deployment of R&I and other off-the-shelf solutions with potential for scale-up, moving from singular, customised pilot programmes to city-wide initiatives, also replicated in other cities, thus accelerating their capacity to deliver on climate neutrality;
- to establish cooperation and regular exchange, formalised through a Memorandum of Understanding, with the R&I projects that will be funded under the Climate-neutral and smart cities Mission Work Programme in order to identify complementarities, avoid potential overlaps with the pilots supported by the Mission Platform and ensure synergies where relevant, to the benefit of the participating cities.

To ensure a stable framework for the development of the Mission Platform, to avoid disruptions in its services and to deliver sustained support to the time-bound objective of the Cities Mission to achieve 100 climate-neutral cities by 2030, only one Framework Partnership Agreement will be established. The cooperation between the European Commission and selected partners will have a duration of five years. It will cover the period 2022-2027, until the conclusion of the Horizon Europe Framework Programme.

HORIZON-MISS-2021-CIT-02-04: Positive Clean Energy Districts

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 15.00 and 20.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 40.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: All applying cities must have a Sustainable Energy and Climate Action Plan ⁴⁵⁴ (SECAP) or similar, validated by European Commission's Joint Research centre (JRC) at least 1 month before call closure (a fast-track procedure can be requested if needed).
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Grants awarded under this topic will be linked to the following action(s):

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<https://www.covenantofmayors.eu/plans-and-actions/action-plans.html>

	<p>HORIZON-MISS-2021-CIT-02-03</p> <p>Collaboration with the Mission Platform is essential and projects should ensure that appropriate provisions for activities and resources aimed at enforcing this collaboration are included in the workplan of the proposal. The collaboration with the Mission Platform should be formalised through a Memorandum of Understanding to be concluded as soon as possible after the projects starting date.</p>
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Expected Outcome: Projects are expected to contribute to all the following outcomes:

- Contribute to the objectives of the Climate-Neutral and Smart Cities Mission by accelerating the transition towards climate neutrality in cities;
- Large-scale demonstration and implementation of Positive Clean Energy Districts⁴⁵⁵ to prove their feasibility and cost-effectiveness in a real world environment, i.e. they will be fully integrated in the city context at all levels;
- Projects will be at district (project defined⁴⁵⁶) scale and will have long-term strategies that address the (at times conflicting) needs and requirements of inhabitants, energy, mobility (both passenger mobility and freight transport), ICT and environment at district scale ⁴⁵⁷ in order to make cities more liveable, healthier, resource efficient and climate-neutral. Projects will include different social and economic areas at the district level;
- Collaborative structures that bring together all important actors needed to realize Positive Clean Energy Districts, i.e. cities/metropolitan areas, industry/SMEs, property developers/financial actors, R&I organisations, energy service providers, citizens associations, energy agencies, etc. They will closely collaborate among each other and with the Horizon 2020 Smart Cities and Communities Lighthouse projects cluster, the supporting SCALE service contract and the Smart Cities Marketplace;
- Widening and consolidating the Positive Clean Energy cluster of practitioners and strengthened links with financial actors enabling the mid-term Europe-wide uptake of tested solutions for Positive Clean Energy Districts;
- Paradigm shift from demonstration project to mainstreamed long-term city transformation;
- Evidence of decreased investment risk for - and acceleration of - the rollout of Positive Clean Energy Districts;

⁴⁵⁵ Refer to definition of Positive Energy Districts as elaborated under SET Plan IWP 3.2: <https://ipi-urbaneurope.eu/ped/>

⁴⁵⁶ Based on existing city-wide diagnosis and strategies, to enhance coherence and alignment with the city' urban transformation long-term vision of, as well as acceptance among citizens.

⁴⁵⁷ In this context, a 'district' is a designated administrative unit within a city that is managed by a local government.

- Well-proven and documented packaged solutions that lower the entry barrier, create trust and shape the market, ultimately leading to further large-scale investment;
- City alliances that include also small and very small cities as well as cities in less developed and peripheral regions - to enhance opportunities for accessing knowledge, technology and funding, and in turn provide a factual contribution toward meeting the climate targets.

Scope: The topic addresses the objectives of the Climate-Neutral and Smart Cities Mission, hereafter referred to as the Cities Mission, to (1) support, promote and showcase 100 climate-neutral and smart European cities by 2030 and (2) make these cities act into experimentation and innovation hubs to put all European cities in a position to become climate-neutral by 2050. The topic will thus contribute to the twin green and digital transitions promoted by the European Green Deal and will lead by example on how to speed up the necessary transformation towards urban climate neutrality, including in a human-centred way.

Cities are natural testbeds for innovative integrated solutions and for showcasing the different possibilities for achieving climate neutrality and zero pollution objectives. Early mover cities towards climate neutrality and zero pollution by 2030 will pave the way for all cities to follow by 2050. They should therefore lead the way towards an overarching strategy aiming at climate neutrality for cities.

The concept of Lighthouse and Fellow cities⁴⁵⁸ pioneered under Horizon 2020 yielded good results and a similar project structure is encouraged⁴⁵⁹.

Since Positive Clean Energy Districts are a crucial element of the climate-neutral cities of the future, the concept of scale and of representativeness of the various socio-economic contexts/groups of citizens are of highest importance for effective and impactful urban transformation, taking into account cross-sectoral impacts, interdependencies and co-benefits. The expertise acquired at district scale - by facilitating and analysing the intricate interactions between all involved layers and actors - is essential for subsequent scale-up to city scale. This is again paramount if we want to meet the 2050 climate and zero pollution goals where cities play a pivotal role. The scope of the projects will therefore be to:

- Test large-scale Positive Clean Energy Districts under real life conditions and analyse:
 - o The main aspects of successful conception and roll-out of Positive Energy Districts;
 - o Combinations of demand measures (e.g. energy efficiency, demand response and user behaviour) and supply measures (e.g. onsite RES and storage, including from EVs, building/district management) at district scale to identify the best cost-effective mix;

⁴⁵⁸ Indicatively 2 (leading) Lighthouse cities and 2-5 fellow cities. However, if deemed more appropriate also other constellations are admissible)

⁴⁵⁹ Horizon 2020: LC-SC3-SCC-1-2018-2019-2020: Smart Cities and Communities - https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-energy_en.pdf.

- o Synergies between the built environment, energy communities, active and e-mobility (e.g. integration of smart and/or bidirectional EV charging), smart grids (e.g. heating/cooling, electricity) and energy storage. Inclusion of resource efficient smart water and waste management is also an asset;
- o Key elements of replicability for scaling up Positive Clean Energy Districts (in the same city/region and also beyond), for example the use of open standards and technical specifications and open source tools is encouraged.
- Demonstrate different combinations of technologies to achieve Positive Clean Energy Districts and analyse the most cost-efficient combinations.
- Develop business models and governance structures that are best suited for Positive Clean Energy Districts (e.g. studying the most effective incentive schemes for behavioural change, development and integration of sustainable energy communities).
- Test and adapt different management systems/platforms and citizen interaction and related co-creation and communication strategies that facilitate the implementation of Positive Clean Energy Districts.
- Optimise on-site energy storage systems (e.g. thermal, electrical) linked with local non-combustion RES production (including excess energy from local/ regional industry), use of low carbon materials, and e-mobility (both passenger mobility and freight transport).
- Integrate low to zero pollution heating and cooling systems (e.g. solar thermal district heating plants) making best use of local assets.
- Test Positive Clean Energy District grid solutions, demand response and other smart energy management strategies that help to optimise the larger energy system. To address the cybersecurity aspect, the task will be implemented in close collaboration with the projects funded under the Horizon Europe topic C5-D3-ESGS-06-2021 addressing the reliability and resilience of the grid.
- Establish a project structure that actively involves the local city administrations and mayors of other cities in co-creation, inter-city peer review process and formal collaborations based on officially adopted shared principles.
- Involve owners/inhabitants but also financial actors as consortium partners already in the development phase, with the perspective to scale up from project to real city transformation.
- Apart from implementing their own innovative approaches, projects are strongly encouraged to build and capitalise on the wealth of proven solutions of Horizon 2020 Smart Cities and Communities Lighthouse Projects cluster ⁴⁶⁰ and advancing the chosen solutions towards the necessary mainstreaming on the mid/long term.

⁴⁶⁰ <https://smart-cities-marketplace.ec.europa.eu/scale>

Projects are also expected to collaborate with and contribute to the specific objectives of the SET Plan action 3.2 - Smart cities and communities - focusing on positive-energy blocks and districts (PED).

Proposals are expected to demonstrate very good knowledge of the European Smart Cities and Communities ecosystem and to pay specific attention to synergies with relevant policies such as the Renovation Wave and with other relevant initiatives such as the European Partnership on Driving Urban Transition for a sustainable future (DUT)⁴⁶¹, the European Partnership for People-centric Sustainable Built Environment (Built4People)⁴⁶², the Covenant of Mayors, the Smart Cities Market Place ⁴⁶³, Living-in.EU, Clean Energy Transition (LIFE), EIT InnoEnergy, the upcoming European Urban Initiative of Cohesion policy, the Urban Agenda for the EU, as well as relevant projects such as the Lighthouse projects of the New European Bauhaus initiative and relevant smart specialisation partnerships.

The projects funded under this topic must establish a collaboration agreement, to identify clear links among themselves and ensure complementarity, coordination and exchange on relevant linked activities. The selected projects should also foresee active collaboration with relevant and related projects funded under this call in order to address synergies and complementarities between the projects of the Cities Mission portfolio. In particular collaboration with the Mission Platform (HORIZON-MISS-2021-CIT-02-03) is essential and projects should ensure that appropriate provisions for activities and resources aimed at enforcing this collaboration are included in the workplan. Detailed description of the specific activities and common actions that will be undertaken is not required at proposal stage and can be further defined at a second stage during the lifetime of the projects. The collaboration with the Mission Platform should be formalised through a Memorandum of Understanding to be concluded as soon as possible after the projects starting date.

To facilitate replication and reuse of the solutions developed as part of these actions, use of open source software, open standards and technical specifications⁴⁶⁴, re-use of building blocks and interoperability solutions⁴⁶⁵, and sharing of data through EU data spaces are encouraged where appropriate.

To facilitate replication, upscaling and up-taking of the generated outcomes and to foster capacity building/upskilling of public authorities, local actors and communities, the projects should engage in ambitious outreach, communication, dissemination and training activities in coordination and complementarity with the Mission Platform.

⁴⁶¹ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe/candidates-climate-energy-and-mobility_en

⁴⁶² https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe/candidates-climate-energy-and-mobility_en

⁴⁶³ <https://smart-cities-marketplace.ec.europa.eu/>

⁴⁶⁴ For example, the Minimal Interoperability Mechanisms (MIMs Plus) developed by Living-in.eu (<https://living-in.eu/groups/commitments/technical>) and the [European Interoperability Framework](#)

⁴⁶⁵ These include the assets and solutions available through CEF Digital Building Blocks and ISA2 and which will be made available on [Joinup](#) under the DIGITAL Europe Programme Work Programme 2021-2022

HORIZON-MISS-2021-CIT-02-05: Global cooperation and exchange on urban climate neutrality

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 2.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: Legal entities established in non-associated third countries may exceptionally participate in this Coordination and support action.

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

- Facilitate the management and transfer of global knowledge on the topic of climate action in cities, helping cities move closer to climate neutrality;
- Increase the visibility of the EU and its cities as frontrunners and collaboration-minded partners in urban climate action;
- Contribute to the implementation of EU policy and international commitment (European Green Deal, Global Approach to Research and Innovation).

Scope: Climate neutrality is a global challenge that requires international dialogue and cooperation, including among cities. Cities account for more than 70% of CO₂ emissions and over 65% of energy consumption worldwide. As such, they play a strategic role in climate change mitigation as hotspots of challenges and solutions. They are also uniquely positioned to reap multiple co-benefits from climate action such as reduced air and noise pollution as well as less congestion and more active lifestyles, leading to improved health and wellbeing for their inhabitants.

Many cities across the world have climate action plans in place and are looking for solutions on how to best bridge the implementation gap between their climate neutrality goals and the pace of current transformation. These solutions can often be found via cooperation and exchanges that transcend national and regional borders. To advance this process, the Climate-Neutral and Smart Cities Mission, hereafter referred to as the Cities Mission, aims to set a leading international example, with at least 100 climate-neutral cities at the heart of a wide international knowledge and practice network focused on delivering urban solutions for climate neutrality.

In line with this ambition, the coordination and support action will set up a Global Knowledge Exchange Centre on emissions reduction pathways for urban environments. This global platform will coordinate the international outreach activities of the Cities Mission, thus expanding and complementing the geographical scope and reach of the Mission Platform⁴⁶⁶. It will cater to a wide spectrum of European and international urban stakeholders such as local authorities, representatives of international organisations and other policymakers, researchers and urban practitioners, representatives of the industry and the private sector, civil society and citizens.

The platform will establish a geographically and thematically structured online repository of evaluated best practices⁴⁶⁷, complemented by a moderated learning community, to facilitate the two-way exchange of experience and practices on achieving climate neutrality between the cities under the Cities Mission and cities worldwide. The goal is to accelerate learning, replicability and scaling-up of solutions by helping cities to learn from first movers and tailor their approach. As part of these activities, the platform will provide support as relevant to the cooperation and knowledge exchange actions of the global mission on Urban Transitions⁴⁶⁸ set up under Mission Innovation. This will include coordination with the Commission and the Global Covenant of Mayors⁴⁶⁹ as co-leads of the global mission.

The platform will also set up and curate an online database of advising and funding actions undertaken in EU Member States and Associated Countries (at national level, but also at regional and city level) to support the climate neutrality of non-European cities. The database will inventory as well the advising and funding opportunities at international level that could benefit cities in the Europe.

In the process, the platform will liaise as needed with the Mission Platform, the dedicated national mission networks⁴⁷⁰, relevant Horizon Europe partnerships such as the Driving Urban Transitions to a sustainable future (DUT) partnership, and other relevant information and dissemination channels that can increase awareness on the global landscape for advising and funding in the field of urban climate neutrality.

In addition, the platform will communicate experiences and milestones under the mission to international audiences via regular and targeted communication campaigns and activities. This

⁴⁶⁶ Conceived through the Horizon 2020 project NetZeroCities - Accelerating cities' transition to net zero emissions by 2030, Grant Agreement n. 101036519, selected under the the Horizon 2020 Green Deal call topic LC-GD-1-2-2020: Towards Climate-Neutral and Socially Innovative Cities and to be scaled up through the HORIZON-MISS-2021-CIT-02-03: Framework Partnership Agreement (FPA) for the Climate-Neutral and Smart Cities Mission Platform.

⁴⁶⁷ Also building on the yearly mapping report on EU Research & Innovation for and with Cities. See the June 2021 report at <https://op.europa.eu/en/publication-detail/-/publication/1a11dc10-edba-11eb-a71c-01aa75ed71a1/language-en/format-PDF/source-220624832>

⁴⁶⁸ <http://mission-innovation.net/missions/>

⁴⁶⁹ The Commission will provide funding support to the activities of the Managing Director of the global mission on cities through a grant to an identified beneficiary under HORIZON-MISS-2022-CIT-IBA: Global Mission on Urban Transitions under Mission Innovation.

⁴⁷⁰ Set up under the Horizon Europe call topic HORIZON-MISS-2021-CIT-01-01: Supporting national, regional and local authorities across Europe

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will include support to the Commission with the organisation of an annual event on the international outreach of the mission.

Under all these activities, the platform will take into account the work already done by global city networks such as the Global Covenant of Mayors, C40 Cities and the EU's International Urban and Regional Cooperation Programme, by international and multilateral organisations such as the UN-Habitat, the World Economic Forum and the World Business Council for Sustainable Development, by international associations such as ICLEI and by global initiatives such as the UN Race to Zero Campaign. Linkages should also be ensured with international networks that promote piloting activities such as the European Network of Living Labs (ENoLL) and with the initiatives for urban climate neutrality under the EU's Neighborhood, Development and International Cooperation Instrument.

Call - Research and Innovation actions for support the implementation of the Climate-neutral and Smart Cities Mission

HORIZON-MISS-2022-CIT-01

Conditions for the Call

Indicative budget(s)⁴⁷¹

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁴⁷²	Number of projects expected to be funded
		2022		
Opening: 28 Apr 2022 Deadline(s): 06 Sep 2022				
HORIZON-MISS-2022-CIT-01-01	IA	42.00 ⁴⁷³	8.00 to 12.00	4
Overall indicative budget		42.00		

⁴⁷¹ 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 years 2021 and 2022.

⁴⁷² Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁴⁷³ Of which EUR 9.25 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 5.72 million from the 'Digital, Industry and Space' budget and EUR 0.84 million from the 'Civil Security for Society' budget and EUR 25.32 million from the 'Climate, Energy and Mobility' budget and EUR 0.86 million from the 'Culture, creativity and inclusive society' budget.

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

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-CIT-01-01: Designing inclusive, safe, affordable and sustainable urban mobility

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 8.00 and 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 42.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: Applicant cities must have a Sustainable Urban Mobility Plan (SUMP) ⁴⁷⁴ , fully developed or in the preparatory phase, and project actions should link to it.
<i>Legal and financial</i>	The rules are described in General Annex G. The following exceptions

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<https://www.eltis.org/mobility-plans>

<i>set-up of the Grant Agreements</i>	<p>apply:</p> <p>Grants awarded under this topic will be linked to the following action(s):</p> <p>HORIZON-MISS-2021-CIT-02-03</p> <p>Collaboration with the Mission Platform is essential and projects should ensure that appropriate provisions for activities and resources aimed at enforcing this collaboration are included in the workplan of the proposal. The collaboration with the Mission Platform should be formalised through a Memorandum of Understanding to be concluded through the CIVITAS initiative as soon as possible after the projects starting date.</p>
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Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Contribute to the objectives of the Climate Neutral and Smart Cities Mission by accelerating the transition towards climate neutrality in cities through the promotion of zero-emission, shared, active and human-centred mobility;
- Increase the extent and speed of the take-up and upscaling of innovative, best practice and replicable safe, affordable and sustainable urban mobility solutions in the living labs involved in the proposals ⁴⁷⁵ (at least four cities/project and four follower cities, considering geographic diversity including in terms of regions' level of development) while facilitating the common lesson drawing and learning at European level, in order to contribute to the priority of the Zero Pollution Action Plan's objectives, the Sustainable and Smart Mobility Strategy and the EU road safety policy framework 2021-2030 for a 50% reduction target for deaths and also for serious injuries by 2030;
- Solutions for at least ten unsafe areas/living labs in urban/peri-urban areas using innovative planning, design and implementation approaches, including but not limited to co-creation and/or citizen engagement, modelling and AI, digital and smart enforcement tools, dynamic space reallocation, with a view to reduce road safety risks, reducing exposure to air and noise pollution and the perceived feeling of unsafety for pedestrians and cyclists;
- Re-assess road and public space quality responding to needs of diverse groups (examples include but are not limited to: women, children, people with disabilities and older people); actions may include but are not limited to improving data collection for foot, bike and e-scooter traffic as well as the mechanisms for reporting pedestrian and cyclists, e-scooter injuries and deaths;

⁴⁷⁵ At least four cities/project and at least four follower cities. An appropriate budget should be reserved to the twinning cities to deliver on their objectives within the project. The city partnership in the consortium should be cohesive. There should be special attention for cities coming from countries where the road deaths and serious injuries are high.

- Address proactively potential risk raised by expected increases in cycling and e-scooters;
- Rebalancing the attribution of public space to different modes of transport so that it better reflects the actual or desired local modal split as well as support reaching Vision Zero⁴⁷⁶ and zero-emission objectives, thus increasing road safety and quality of life in cities;
- Public space redesign actions targeted by the awarded projects should consider the circular economy principles, adaptation to climate change (in particular heatwaves), cross-sectoral synergies and not come at the cost of removing or deterioration of parks, trees or green recreational areas.

Scope: The European Union is facing a multitude of interconnected demographic, public health and environmental challenges: the climate is changing, road deaths are stagnating, urbanization is increasing, air quality standards are still breached in over 100 cities, obesity is rising and the population is ageing.

But there is an increasing recognition at local, national and EU level that boosting the levels of active mobility, particularly walking and cycling, can play an important role in overcoming many of these challenges. Such a policy will also have economic benefits. Based on conservative estimates, even current levels of cycling in the EU produce benefits valued at around 150 billion euros per year⁴⁷⁷.

During the Covid-19 pandemic, larger cities in Europe announced infrastructure changes to promote cycling and walking. For instance, they temporarily widened or created new cycle lanes to allow safe overtaking with physical distancing limits in mind while also implementing more 30km/h limits or 20km/h zones. The scope of this action is to support local authorities in accelerating mobility changes and address a significant concern, namely that people returning to work after the lockdown will seek out alternatives so that allocating public space, bicycles, pedestrians and public transport and reducing the space available for cars will encourage people to cycle, walk or use public transport rather than take the car.

Taking into account where possible the Sustainable Urban Mobility Indicators⁴⁷⁸, projects should collect data on differences between patterns, behaviours and habits in relation to the mobility of various categories of vulnerable road users. Such data should where possible, be integrated with cross-domain data, to ensure interdependencies and co-benefits are identified. Projects should identify specific mobility needs and public space re-design needs, taking into account actual and perceived safety and security of women, children and accessibility for people with disabilities e.g. blind people in shared spaces, people in prams, wheelchairs and other supporting vehicles. Measures should be taken to implement necessary changes within the timeline of the project.

⁴⁷⁶ The Vision Zero or Safe System approach requires a combination of safe infrastructure, safe speeds, safe road users and good quality emergency response.

⁴⁷⁷ European Cyclist Federation, The benefits of cycling, <http://bit.ly/36L0zV0>

⁴⁷⁸ https://transport.ec.europa.eu/transport-themes/clean-transport-urban-transport/sumi_en

In addition, projects should also provide clear guidance to cities and Member States and Associated Countries on how to systematically incorporate the vulnerable road users dimension into infrastructure planning, including aspects of safety and security, accessibility, digital and smart tools for enforcing speed limits and vehicle access, design and operation of services and public spaces, including mobility hubs, public transport and shared mobility.

The projects associated to this call topic should envisage cooperation with the SUMP coordination platform, ELTIS ⁴⁷⁹ and produce thematic a comprehensive topic guides stemming from the projects and accompanying the SUMP guidelines.

Projects should also take stock of lessons learnt during the period of imposition and lifting of Covid-related restrictions and propose suitable solutions for the future when it comes to resilience, safety and accessibility of public infrastructure.

A thorough evaluation, with a clear baseline in each city, should provide qualitative and quantitative information on the results of the local solutions implemented. The effectiveness of the proposed measures in achieving local policy objectives on safety, security and accessibility as well as on climate and pollution should be evaluated and the possible barriers to their broad take up and deployment identified, together with recommendations on how to overcome them. This should be accompanied by mechanisms for common lesson drawing and learning, within the project, between the projects funded under this topic and through the CIVITAS Initiative.

Proposals must plan for an active collaboration amongst the projects selected under this topic - for dissemination, evaluation and coordination - facilitated by and within the CIVITAS initiative through the signature of collaboration agreement. Proposals should ensure that appropriate provisions for activities and resources aimed at enforcing this collaboration are included in the work-plan of the proposal. Detailed description of the specific activities and common actions that will be undertaken is not required at proposal stage and can be further defined during the grant agreement phase. Collaboration with the Mission Platform (HORIZON-MISS-2021-CIT-02-03) is essential and should take place through the CIVITAS initiative. The latter should establish, through a Memorandum of Understanding, clear links with the Mission portfolio for synergies and complementarities.

Proposals may include preparatory, take up and replication actions, research activities, as well as tools to support local planning and policy making. At the same time, projects would be expected to share their results and good practice with the upcoming European Urban Initiative of Cohesion Policy, the Urban Agenda for the EU and relevant smart specialisation partnerships e.g. the Safe and Sustainable Mobility Partnership or EIT Urban Mobility with its objectives to deploying user-centric, integrated eco-efficient and safe mobility solutions in urban areas.

⁴⁷⁹ <https://www.eltis.org/>

Other Actions not subject to calls for proposals

Grants to identified beneficiaries

1. Specific Grant Agreements to the Framework Partnership Agreement (FPA) for the Climate-Neutral and Smart Cities Mission Platform

The consortium of the selected Framework Partnership Agreement (FPA) for the Climate-Neutral and Smart Cities Mission Platform is invited to submit a proposal for a Specific Grant Agreement (SGA) for the first period of the partnership (2022-2024). The expected outcomes of the SGA should be in line with the scope of the FPA.

One single proposal for SGA should be submitted. This action aims at implementing the first period of the FPA action plan addressing and developing in details the actions needed to implement all the building blocks presented under topic HORIZON-MISS-2021-CIT-02-03: Framework Partnership Agreement (FPA) for the Climate-Neutral and Smart Cities Mission Platform and broadly outlined in the draft action plan to be submitted in this context.

The Mission Platform will assist those cities that will be identified as a result of the open Call for Expression of Interest which was launched in November 2021 and resulted in 377 expressions of interest from cities in all 27 EU Member States and from 9 associated countries. These cities respond to the first objective of the Mission to deliver at least 100 climate-neutral and smart European cities by 2030. Cities that are not yet able to commit to the Mission's timeline but are willing to commit to accelerate their transition towards climate neutrality within a longer timeframe following the Cities Mission basic principles, will also receive basic support from the Mission Platform. These cities respond to the second objective of the Mission to ensure that the cities responding to the first objective act as experimentation and innovation hubs to put all European cities in a position to become climate-neutral by 2050.

The Specific Grant Agreement will implement actions addressing both objectives of the Mission through targeted activities, in particular:

1. Develop and scale-up the Mission Platform and its associated services (objectives 1 and 2)

- Develop and scale up the services and support offered to cities through a Mission Platform in order to accommodate for the needs of the whole group of cities selected to participate in the Mission through the Call for Expression of Interest to be launched by the European Commission (objective 1);
- Expand and regularly update the open-source services of the online platform, accessible to all cities, such as a city dashboard with relevant data for a given city, including its Climate City Contract (CCC); progress on metrics; an innovation readiness self-assessment tool; contributing to a smart repository of relevant knowledge (data, reports, good practices); annual barometer synthesizing the progress achieved by all cities participating in the Mission; a collaborative space for cities participating in pilot

projects; a peer-based “community social network” to facilitate peer-learning between cities (objective 1);

- Carry out a capacity building and mutual learning programme, supporting their move towards climate neutrality (objective 1);
- Provide needs-based, but not individualised training, in the form of seminars, workshops and/or webinars addressing the main elements of urban climate neutrality. Topics should respond to the needs of the group of cities, and should include: climate neutrality planning; governance and stakeholder engagement; GHG emission accounting and monitoring; key sectors and strategies for reducing emissions (energy, transport, waste); local energy production and renewable energy sources; the role of smart and digital solutions; investment (funding and financing); citizen engagement and social innovation (objectives 1 and 2);
- Foster mutual learning and exchange of good practice, for example in the form of twinning and teaming arrangements (objective 2);
- Offer mentoring and twinning opportunities for up to 100 cities to join up with the cities selected in the Call for Expression of Interest (objective 1),
- Help cities access the best available research, expertise, tools and technologies that can enable them to quickly identify and implement portfolios of innovative, high-impact interventions on a deep decarbonisation pathway (objectives 1 and 2).
- Provide web-based assistance to European cities that are not yet ready to commit to climate neutrality for their city by 2030, but are ready to engage to accelerate their transition in accordance with the principles of the Cities Mission (objective 2).

2. Co-creation of Climate City Contracts (objective 1)

- Engage with the cities participating in the Mission and steer the process of co-creation of their CCC, in close collaboration with the national/regional authorities, all relevant stakeholders and the European Commission;
- Support cities to explore and adopt innovative governance models, building on the experience of relevant initiatives, to help develop, implement and monitor progress of the CCC, and in particular local key stakeholders such as civil society platforms to engage with citizens, involve and empower them to be active participants in the co-creation process;
- Coordinate the group of cities committing to the CCC process facilitating the sharing of experience and good practices and mutual learning between cities regarding setting up and mainstreaming co-creation processes engaging all relevant actors for the framing, deployment and assessment of their vision, strategy, and an action plan to reach climate neutrality and increased sustainability while ensuring shared ownership;

- Support cities and local communities in testing solutions (including new technologies, non-technological, nature-based and social innovations) that stem from European R&I. This should entail a matching of cities' and local communities' needs to R&I results through various means e.g., matchmaking, coaching and brokerage hubs.

3. Tailor-made investment plans, project preparation and finance (objective 1)

- Provide information, consulting services and further support cities to develop a tailor-made investment plan, including with financial and technical advisory services, to support access to public and private funding and financing as part of their CCC and their implementation;
- Taking into account and building on the good practices developed by global, European and national initiatives and programmes and ensuring complementarity with services offered by the EIB and the InvestEU Advisory hub, support cities in the preparation of specific investment projects for the transition to climate neutrality and provide tailored advice and coaching on how best to mobilise sustainable investments by the private sector;
- Explore the use of the possibilities offered to cities by pre-commercial procurement (PCP) and public procurement of innovative solutions (PPI) under Art. 26 of the Horizon Europe Regulation;
- Develop innovative tools and educational programmes and identify methods to measure, optimise and demonstrate the value of the co-benefits of climate neutrality projects as well as to critically assess trade-offs.

4. Large scale EU R&I demonstrators accelerating city climate-neutrality solutions (objective 1)

- Launch and manage calls for proposals to support large scale pilots for the deployment in participating Mission cities of systemic solutions combining, as appropriate, technological, nature-based, social, cultural, regulatory and financial innovation and new business and governance models to underpin the climate transition, taking stock of existing best practices and already available solutions;
- Establish cooperation and regular exchange with the R&I projects that will be funded under the Climate-neutral and smart cities Mission Work Programme in order to identify complementarities, avoid potential overlaps with the pilots supported by the Mission Platform and ensure synergies where relevant, to the benefit of the participating cities. This collaboration should be formalised through a Memorandum of Understanding with the relevant projects and initiatives;
- Support activities dedicated to twinning and mentoring of at least two other cities from different EU Member States or Horizon Europe Associated Countries facing structural disadvantages or with a population smaller than 50 000 inhabitants. Activities should also aim for an equitable inclusion of cities in less developed and peripheral regions,

which are willing to embark on a climate neutrality path with a target beyond 2030 and are willing to engage and develop their CCC and implement it in a subsequent phase with an ultimate target of 2050.

The Mission Platform should build on existing actions, including relevant ones developed through Horizon 2020 projects. It should collaborate closely with successful ongoing initiatives that have developed knowledge and expertise, in particular with the Covenant of Mayors and their methodologies and processes co-developed with the JRC, and the Covenant Community Group of Cities Practitioners. The assets of the Smart Cities and Communities context (including Living-in.eu, data space for smart communities), the Smart Cities Marketplace and the Common Services Platform should be factored in, with regard to engaging public, private and civil society stakeholders to support project financing and implementation as well as the promotion of shared standards and technical specifications to facilitate data exchange and to ensure interoperability of solutions. Synergies should be ensured with the upcoming European Urban Initiative of the Cohesion Policy and with the Urban Agenda for the EU and with actions funded under the DIGITAL European Programme.

The Mission Platform will coordinate with the European Commission to ensure that advice and support provided to cities remains aligned to the latest policies and initiatives and makes full use of available tools and services provided or supported by the Commission.

In addition, it will draw in national-level support and expertise through close cooperation with the Cities Mission's national networks, established under the call HORIZON-MISS-2021-CIT-01-01.

Specific conditions:

This action allows for the provision of financial support to third parties in line with the conditions set out in General Annex B – Eligibility of the Horizon Europe Work Programme. Activity 4 "Large scale EU R&I demonstrators accelerating city climate-neutrality solutions", includes the launch of open calls for proposals to support large scale pilots for the deployment in participating Mission cities of systemic innovative solutions. For this purpose, beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. As a derogation to the standard limit of EUR 60 000 per third party entity set in the Financial Regulation⁴⁸⁰ (Article 204), the Commission considers that in order to increase the impact of the pilot projects to be supported under the call(s) that will address the deployment of systemic innovative solutions and in order to achieve the objectives of this action, the maximum amount to be granted to each third party is EUR 1.5 million. The Commission considers that the size of the pilots should range between EUR 0.5 million up to EUR 1.5 million, depending on the expected impact of the proposed projects. The selection of the third parties to be supported under the grant will be based on a review of the proposed work by external independent experts. The scope of these calls will be further defined building on and ensuring complementarities with similar initiatives developed by the project

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<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A32018R1046&from=EN>

funded under the Horizon 2020 Green Deal call topic LC-GD-1-2-2020: Towards climate-neutral and socially innovative cities⁴⁸¹.

The standard evaluation criteria, thresholds, weighting for award criteria and the maximum rate of co-financing for this type of action are provided in parts D and G of the General Annexes.

This action will be implemented through Research and Innovation Actions (RIA).

Form of Funding: Grants not subject to calls for proposals

Type of Action: Specific grant agreement awarded without call for proposals in relation to a Framework Partnership Agreement

Indicative timetable: Third quarter of 2022

Indicative budget: EUR 87.24 million from the 2022 budget⁴⁸²

2. Global Mission on Urban Transitions under Mission Innovation

At COP26 in Glasgow, Mission Innovation launched a global mission on Urban Transitions⁴⁸³. The Urban Transitions Mission is co-led by the Commission, as member of Mission Innovation on behalf of the European Union, and the Global Covenant of Mayors. It aims to support establishing and/or accelerating the design, development and implementation of integrated urban energy systems in different world regions by 2030 by testing affordable and cost-effective solutions in key emission sectors such as the built environment, transport and mobility, and industry, with the cross-sector integration of renewable energy. Activities will include urban living labs, deep demonstrators and enhanced R&D investment that take into account different forms of innovation and challenge-based typologies of different urban environments.

This grant will be awarded without a call for proposals to the legal entity identified below as the Global Covenant of Mayors. On account of its technical competence, its high degree of specialisation and for its role as co-lead of the global mission on cities, the Global Covenant of Mayors will provide the services of the Mission Director, responsible for the coordination of mission activities, the involvement of Mission Innovation members and partners, and the engagement of stakeholders towards the successful implementation of the mission statement.

⁴⁸¹ Horizon 2020 Work Programme 2018-2020, Part 20. Cross-cutting activities, Call - Building a low-carbon, climate resilient future: Research and innovation in support of the European Green Deal: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/lc-gd-1-2-2020>. The Horizon 2020 project NetZeroCities - Accelerating cities' transition to net zero emissions by 2030, Grant Agreement n. 101036519, has been selected under the Green Deal call topic "LC-GD-1-2-2020 Towards Climate-Neutral and Socially Innovative Cities" and started its activities on 1 October 2021.

⁴⁸² Of which EUR 19.21 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 11.88 million from the 'Digital, Industry and Space' budget, EUR 52.60 million from the 'Climate, Energy and Mobility' budget, EUR 1.75 million from the 'Civil Security for Society' budget, EUR 1.79 million from the 'Culture, creativity and inclusive society' budget.

⁴⁸³ See mission-innovation.net/missions/

Legal entities: Global Covenant of Mayors as part of the C40 Cities Climate Leadership Group Inc. - Park Avenue 120, 23th floor, 10017 New York, USA with exploitation seat at Boulevard Charlemagne 1, Mezzanine Floor, IPC Building, 1000 Brussels, Belgium

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant awarded without call for proposals according to Financial Regulation Article 195 (f)

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: First quarter of 2022

Indicative budget: EUR 0.37 million from the 2021 budget⁴⁸⁴

Scientific and technical services by the Joint Research Centre

1. Scientific and technical services to the Climate-Neutral and Smart Cities Mission

The Joint Research Center (JRC) is providing scientific and technical support during the preparation and early implementation phases of the Climate-Neutral and Smart Cities Mission, hereafter referred to as the Cities Mission. The purpose of this action is to provide continued scientific and technical support towards achieving climate-neutrality in the cities participating in the Cities Mission by 2030 and in all other cities by 2050, in line with the European Green Deal⁴⁸⁵ objectives. The activities will provide extended data, methodologies and analysis for accelerating the transition towards climate-neutrality throughout European cities while also assessing the progress and overall impact of the Cities Mission. This activity will be implemented in close coordination with the Commission's Mission Team and the Mission Owners' Group.

This activity will focus in particular on:

- Monitoring the overall progress and impact of the Cities Mission

The JRC will elaborate the methodology for assessing the GHG reductions achieved in the context of the Cities Mission and their impact in view of achieving the European Green Deal targets. The methodology will further include an assessment of air quality and health co-benefits. A tailor-made tool will allow cities to assess the air quality impacts of their GHG mitigation measures planned and undertaken as part of their Climate City Contracts.

⁴⁸⁴ Of which EUR 0.10 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.04 million from the 'Digital, Industry and Space' budget, EUR 0.01 million from the 'Civil Security for Society' budget, EUR 0.22 million from the 'Climate, Energy and Mobility' budget, EUR 0.00 million from the 'Culture, creativity and inclusive society' budget.

⁴⁸⁵ COM(2019) 640 final: The European Green Deal_ <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019DC0640&from=EN>

The JRC will provide the methodology for establishing a coherent emissions baseline across all participating cities entering phase 2 of the Cities Mission and prepare a baseline report as reference for mission progress and impact monitoring. The methodology for calculating local Emission Factors (EF) will be refined, particularly for electricity. Vertical integration between cities, regions and Member States, comparability of GHG emissions accounting methodologies and data will be ensured.

In continuation, the JRC will elaborate bi-annual progress and assessment reports.

- Methodological development

Gaps in existing guidance materials and methodologies will be closed, adapting and expanding on existing resources for cities. This will include tailored guidance for cities on assessing and addressing scope 3 emissions in the mission context. This work will be undertaken in close collaboration with the relevant international fora, including the partners under the Global Covenant of Mayors for Climate and Energy (GCoM).

- Provision of guidance, data and tools for follower cities (with targets after 2030)

Based on the analysis of current levels of preparedness, remaining barriers and assistance needs under the current direct action grant, the JRC will identify priority areas of support for the follower cities and elaborate selected tools and services (e.g. the JRC Handbook on Sustainable Urban Development) in view of accelerating their climate neutrality transition. The application tool developed for the purpose of the first call for Expression of Interest can be transformed into a tool for systematic self-assessment for cities, at different stages of their climate neutrality pathway. Proxy emissions data, including sectoral breakdowns, will be made available for less prepared cities as a starting point for their climate action planning. Tools for the assessment of scope 1 emissions in smaller cities will be reviewed and refined as relevant.

The listed activities should ensure the uptake and capitalisation of the existing European urban initiatives and policies, in particular the Urban Data Platform Plus and the upcoming European Urban Initiative, while also considering the necessary interaction with the one-stop-shop established under the Horizon 2020 topic LC-GD-1-2-2020 Towards Climate-Neutral and Socially Innovative Cities⁴⁸⁶. The action should last indicatively two years.

Form of Funding: Direct action grants

Type of Action: Provision of technical/scientific services by the Joint Research Centre

Indicative timetable: Third quarter of 2022

Indicative budget: EUR 2.00 million from the 2021 budget⁴⁸⁷

⁴⁸⁶ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/lc-gd-1-2-2020>

⁴⁸⁷ Of which EUR 0.54 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.20 million from the 'Digital, Industry and Space' budget, EUR 0.05 million

Mission: Soil health and food

There is no life without soils. If soils are healthy and sustainably managed, they provide food, clean water, habitats for biodiversity and other important services while contributing to climate resilience⁴⁸⁸. We take these services for granted, but in fact soils are a scarce, non-renewable and threatened resource, all over Europe and globally. 60-70% of EU soils are unhealthy, mainly because of unsustainable management practices. The effects of climate change are putting further pressure on this key resource. The mission intends to support Europe's path to sustainable soil management as part of the wider green transition in urban and rural areas. The mission's goal is to establish 100 living labs and lighthouses to lead the transition towards healthy soils by 2030 for food, people, nature and climate.

To reach its goal and objectives, the identified mission foresees actions across sectors and territories (rural, peri-urban and urban areas including across borders). It will therefore have wide-reaching impact on practices in agriculture, forestry, food and other industries (e.g. biobased and waste) as well as on land use planning. The mission will also tap into the expertise from international partners and contribute to soil health globally.

To be successful, the Mission requires that stakeholders and social partners along the whole food chain, including farmers, land managers, industries, consumers and society at large acknowledge the wider societal and ecological value of soils and actively contribute to soil friendly practices including through consumer choices. Many of the actions to address soil health have a direct impact on the goals of all other missions: carbon sequestration in soil supports climate mitigation (Mission Adaptation to Climate Change), targeted nutrient management will lead to improvements in water quality (Mission Restore our Ocean and Waters by 2030), soils are the foundation of green infrastructure and nature-based solutions, e.g. for flood protection in urban areas (Mission 100 Climate-neutral and Smart Cities by 2030), while a reduction in soil pollution reduces the risk of cancer (Mission Cancer).

Proposals for topics under this mission will be part of a wider portfolio of mission activities and should contribute to laying the foundations for a structured roll-out of mission activities. They should set out a credible pathway to progress towards to the mission's goal and objectives, and more specifically to several of the following impacts:

- “Soil literacy”, awareness and societal appreciation of the vital functions of soils are significantly increased and result in wide societal engagement on soil health.
- The links between healthy soils, nutritious and safe food and a healthy environment are better understood.

⁴⁸⁸ from the 'Civil Security for Society' budget, EUR 1.19 million from the 'Climate, Energy and Mobility' budget, EUR 0.02 million from the 'Culture, creativity and inclusive society' budget.
In line with report of the mission Board Soil Health and Food the Mission's implementation plan, soil health is defined as "the continued capacity of soils to support ecosystem services".

- Land managers⁴⁸⁹, industries, consumers and society at large work together and take effective action on soil health across sectors and land uses, as informed by best available science, thereby significantly alleviating not only the immediate pressure on soils but also on the surrounding environment including water bodies.
- Robust soil monitoring programmes and common definitions are in place (based on common, harmonised and comprehensive measurements) and allow land managers and public authorities to take effective actions based on up-to-date information from all Member States and Associated Countries.
- The successful implementation of the mission supports several EU policy and international commitments, e.g. in relation to land degradation neutrality, food and nutrition security, climate and biodiversity (e.g. SDGs, UNCCD, UN CBD, Green Deal including the Farm to Fork Strategy, Biodiversity Strategy, new Soil Strategy, Zero Pollution Strategy, Forestry Strategy or the Long-term Vision for Rural Areas).

The implementation plan specifies the goal and objectives as well as implementation details of the mission “A Soil Deal for Europe: 100 living labs and lighthouses to lead the transition towards healthy soils by 2030⁴⁹⁰”.

Projects under this call are expected to liaise closely together with the mission secretariat and actively contribute to the development of the European Soil Observatory (EUSO), hosted by the European Commission’s Joint Research Centre (JRC).

Under the Work Programme 2022 call of the Soil Health and Food mission, the Commission plans to fund amongst others actions to⁴⁹¹:

- develop and improve tools and methods for soil monitoring
- for practice and policy-making;
- preserve and substantially increase soil carbon in different types of land use;
- reduce soil contamination and increase capacities for soil remediation (e.g. through knowledge, strategies and cost-effective methods and technologies);
- enhance soil relevant education and access to information.

Specific requirements for multi-actor projects:

Proposals submitted for topics requesting to follow the multi-actor approach should meet all requirements listed below.

⁴⁸⁹ The term "land manager" includes farmers, foresters, urban and spatial planners and other decision-makers in the public or private domain with regard to land use and rural areas.

⁴⁹⁰ https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en

⁴⁹¹ The listed areas for potential actions are tentative and non-binding.

The multi-actor approach described here, aims to make the R&I process and its outcomes more demand-driven, relevant to society and socially innovative. A multi-actor project ensures the genuine involvement of different types of actors. The choice of the key actors participating in projects will depend on the objectives of the call topic. The actors are essentially the (end-) users⁴⁹² of project results. In the area of agriculture these can be for example farmers and farmers' groups, foresters and foresters' groups, advisors, food processors, businesses, consumer associations, local communities, citizens, civil society organisations including NGOs, social partners and government representatives. The genuine involvement of different types of actors should take place over the course of the project to ensure co-creation: from participation in project planning and experiments to implementation, dissemination of results and a possible demonstration phase. This is expected to speed up the acceptance and take-up of new ideas, approaches and solutions developed in the project. A multi-actor project proposal should describe:

- how the project proposal's objectives and planning are targeting the needs/problems and opportunities of the (end-)users of the project results;
- how the project concept and in particular the composition of the consortium reflects a balanced choice of key actors who have complementary types of knowledge (scientific and practical), and will ensure a broad implementation of project results;
- how the project intends to include existing practices and tacit knowledge in scientific work. This should be reflected in the number of high quality knowledge exchange activities indicating the precise and active roles of the different non-scientific actors in the work. Thanks to the cross-fertilisation of competencies and ideas between actors, this should generate innovative findings and solutions that are more likely to be applied;
- how the project will facilitate the multi-actor engagement process by making use of the most appropriate methodologies;
- how the project will result in practical knowledge, approaches or tools, made easily understandable and accessible, and how this free material for practice will feed into the existing dissemination channels most consulted by the (end-) users of the project results in the countries and regions

For topics working in the area of agriculture and forestry (linked to Intervention Area 3 of Horizon Europe Cluster 6):

- practice oriented knowledge resulting from projects should be assembled amongst others in form of 'practice abstracts'⁴⁹³ in the common EIP format of the European Innovation Partnership 'Agricultural Productivity and Sustainability' (EIP-AGRI)⁴⁹⁴. Involvement or

⁴⁹² An“(end-) user” of project result is a person who is him/herself putting the project results into practice.

⁴⁹³ see <https://ec.europa.eu/eip/agriculture/en/eip-agri-common-format>

⁴⁹⁴ see <https://ec.europa.eu/eip/agriculture/en>

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cooperation with EIP-AGRI Operational Groups funded under Rural Development Programmes should be sought, as appropriate⁴⁹⁵.

The following call(s) in this work programme contribute to this mission:

Call	Budgets (EUR million)		Deadline(s)
	2021	2022	
HORIZON-MISS-2021-SOIL-01	5.00		20 Oct 2021
HORIZON-MISS-2021-SOIL-02	62.00		24 Mar 2022
HORIZON-MISS-2022-SOIL-01		95.00	27 Sep 2022
Overall indicative budget	67.00	95.00	

⁴⁹⁵ see <https://ec.europa.eu/eip/agriculture/en/about/operational-groups>

Call - Preparing the ground for healthy soils: building capacities for engagement, outreach and knowledge

HORIZON-MISS-2021-SOIL-01

Conditions for the Call

Indicative budget(s)⁴⁹⁶

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁴⁹⁷	Number of projects expected to be funded
		2021		
Opening: 22 Jun 2021 Deadline(s): 20 Oct 2021				
HORIZON-MISS-2021-SOIL-01-01	CSA	5.00 ⁴⁹⁸	Around 5.00	1
Overall indicative budget		5.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.

⁴⁹⁶ 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 years 2021 and 2022.

⁴⁹⁷ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁴⁹⁸ Of which EUR 5.00 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget.

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<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-SOIL-01-01: Preparing the ground for healthy soils: building capacities for engagement, outreach and knowledge

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 5.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p> <p>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).</p>

Expected Outcome:

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

- Enhanced capacities for effective mission deployment in close co-operation with the Mission Core Network and eventual national mission hubs supported through the topic ‘Coordination of complementary actions for missions’
- Increased networking and knowledge exchange between communities across Europe at regional/local level on soil health taking into account various types of land uses and based on the work undertaken in existing and new living labs and lighthouses;

- Decision-makers from policy and the private sector are better equipped to answer to questions on soil quality across land uses due to increased insight into the status of soil health in European regions as well as improved capabilities for assessment and analyses and soil monitoring;
- All sectors of society are informed and/or can make informed decisions regarding soil management through integrated on-line resources in all Member States and Associated Countries and improved access to evidence-based information, data as well as resources and examples of best practices in education and training;
- Virtual, cross-disciplinary communities on soil stewardship are created using social media and making full use of the potential of digital tools.

Scope:

Life on Earth depends on healthy soils. Soil provides food, clean water and habitats for biodiversity while contributing to climate resilience including an increased preparedness to extreme weather events (both droughts and floods). As the largest terrestrial habitat, soil is a unique ecosystem that is critical to aboveground and belowground biodiversity yet it is the least studied. Partly as a result of an increasing urban lifestyle, there is very little awareness in society on the importance of soils, their functions, the threats to soil health and what can be done to preserve this valuable resource. A lack of education and understanding often underpins land degradation and a loss of soil capacity to provide the functions on which we depend. Both land managers in rural areas and urban planners need improved access to ready-to-use knowledge and to advisory services that can support them in their efforts to manage soils in sustainable ways.

Living labs (LLs) and lighthouses (LHs) ⁴⁹⁹ are emerging as places for engagement of communities to co-create, test and upscale solutions in various domains. However, LLs and LHs working on soil management are not yet widespread and information on existing experiences is scattered.

Proposed activities will lay the ground for rapid take-up of mission activities following its formal approval. Proposals should therefore:

- identify in close cooperation with regional authorities, stakeholders and communities existing “soil needs” (e.g. status, main problems and priority areas for improvement) in a number of contrasting regions in each Member State and Associated Country so that different land use systems are addressed. Insight on the status of soils and the main challenges to soil health should be a starting point for recommendations on priority actions and activities to be implemented in living labs and lighthouses;

⁴⁹⁹ The mission report *Caring for Soil is Caring for Life* defines a) Living Labs as spaces for co-innovation through participatory, transdisciplinary and systemic research and b) Lighthouses as places for demonstration of solutions, training and communication.

- develop tools to support networking and knowledge exchange of communities working at regional/local level on soil health and create Communities of Practice (CoP) in the respective regions. This should include a mapping of current and emerging Living Labs and Lighthouses targeting various types of land uses (e.g. in agriculture, forestry, urban and natural areas). The mapping of living labs and lighthouses shall ensure that a variety of locations are represented reflecting the diversity of soils, land uses as well as socio-economic and demographic conditions. Results of the mapping should be displayed through an interactive map showing relevant information, for example on context (land use type, funding sources, etc.), activities and partners involved;
- develop “model business plans” for Living Labs and Lighthouses (e.g. specifying ownership, funding, goals and activities) taking into account different regions at NUTS 2 level and different land uses.
- improve the knowledge base required to assess progress in monitoring soils and meeting the targets proposed by the Mission Board Soil Health and Food. Activities should be undertaken in close collaboration with Member States Associated Countries and the EU Soil Observatory⁵⁰⁰. They will depend amongst others on harmonised and regular soil data collection, common definitions and possibly thresholds identified for each Member States and Associated Countries for the mission’s proposed soil health indicators;
- connect existing on-line resources on soil information to provide a single point for access to this information (a one-stop shop for soil literacy) in each Member State and Associated Country. In view of taking a systemic approach to soil health, the information should extend to sectors/activities that have an impact on soils (e.g. sources of pollution) as well as information on wider impacts of unhealthy soils (e.g. on water bodies). This one stop shop or platform should connect diverse organisations, projects and people that contribute to the sustainable management of soils by promoting soil advocates in different fields/roles/regions. It should also help identifying “agents of transition”, i.e. people supporting changes in perception, values, attitudes and behaviour towards more sustainable practices and management of soils while promoting the economic benefits from restoration opportunities;
- link this one-stop shop in each Member State and Associated Country to “best of” online material to inspire and connect citizens to the topics of soil health (e.g. films, websites, apps, games, educational tools). The material should target different groups and be displayed in local official languages. Links should also be established with good examples for online material in Europe and internationally;
- promote and reward on-going or recent examples of soil education and social innovation in the area of soil health to increase understanding of soils by the public at large.

⁵⁰⁰ The EU Soil Observatory was launched 4 December 2020: <https://ec.europa.eu/jrc/en/eu-soil-observatory>

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In carrying out the tasks the project should tap into the expertise of partners from various sectors (e.g. research, land managers including farmers and foresters, education, communication, citizens and civil society, food and non-food industries, spatial planners, public authorities) and address soil health in the context of various land uses. This is in line with the approach taken by the proposed mission Caring for Soil is Caring for Life.

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs, also through close collaboration with the JRC's EU Soil Observatory.

They should build on existing activities and ensure cooperation with relevant projects under Horizon 2020 such as the SMS project and the European Joint Partnership EJP Soil. Activities should also take into account the implementation of living labs under a possible future partnership on agroecology which is under preparation. This should ensure compatibility and cooperation between living labs associated to the mission and the future partnership.

Activities should also support the objectives of the upcoming EU Soil Strategy, and other major initiatives in the area of soil health.

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 be used in addition.

Call - Research and Innovation and other actions to support the implementation of a mission in the area of Soil health and Food

HORIZON-MISS-2021-SOIL-02

Conditions for the Call

Indicative budget(s)⁵⁰¹

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁵⁰²	Number of projects expected to be funded
		2021		
Opening: 22 Dec 2021				

⁵⁰¹ 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 years 2021 and 2022.

⁵⁰² Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

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Deadline(s): 24 Mar 2022				
HORIZON-MISS-2021-SOIL-02-01	CSA	5.00 ⁵⁰³	Around 5.00	1
HORIZON-MISS-2021-SOIL-02-02	RIA	12.00 ⁵⁰⁴	Around 12.00	1
HORIZON-MISS-2021-SOIL-02-03	RIA	7.00 ⁵⁰⁵	Around 7.00	1
HORIZON-MISS-2021-SOIL-02-04	RIA	10.00 ⁵⁰⁶	Around 5.00	2
HORIZON-MISS-2021-SOIL-02-05	RIA	10.00 ⁵⁰⁷	Around 5.00	2
HORIZON-MISS-2021-SOIL-02-06	CSA	10.00 ⁵⁰⁸	Around 3.30	3
HORIZON-MISS-2021-SOIL-02-07	CSA	3.00 ⁵⁰⁹	Around 3.00	1
HORIZON-MISS-2021-SOIL-02-08	RIA	5.00 ⁵¹⁰	Around 5.00	1
Overall indicative budget		62.00		

General conditions relating to this call

- ⁵⁰³ Of which EUR 3.78 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.89 million from the 'Digital, Industry and Space' budget and EUR 0.22 million from the 'Civil Security for Society' budget and EUR 0.11 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁰⁴ Of which EUR 9.07 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.15 million from the 'Digital, Industry and Space' budget and EUR 0.52 million from the 'Civil Security for Society' budget and EUR 0.27 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁰⁵ Of which EUR 5.29 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.25 million from the 'Digital, Industry and Space' budget and EUR 0.30 million from the 'Civil Security for Society' budget and EUR 0.16 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁰⁶ Of which EUR 7.56 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.79 million from the 'Digital, Industry and Space' budget and EUR 0.43 million from the 'Civil Security for Society' budget and EUR 0.22 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁰⁷ Of which EUR 7.56 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.79 million from the 'Digital, Industry and Space' budget and EUR 0.43 million from the 'Civil Security for Society' budget and EUR 0.22 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁰⁸ Of which EUR 7.56 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.79 million from the 'Digital, Industry and Space' budget and EUR 0.43 million from the 'Civil Security for Society' budget and EUR 0.22 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁰⁹ Of which EUR 2.27 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.54 million from the 'Digital, Industry and Space' budget and EUR 0.13 million from the 'Civil Security for Society' budget and EUR 0.07 million from the 'Culture, creativity and inclusive society' budget.
- ⁵¹⁰ Of which EUR 3.78 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.89 million from the 'Digital, Industry and Space' budget and EUR 0.22 million from the 'Civil Security for Society' budget and EUR 0.11 million from the 'Culture, creativity and inclusive society' budget.

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

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-SOIL-02-01: From knowledge gaps to roadmaps on soil mission objectives

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 5.00 million.
<i>Type of Action</i>	Coordination and Support Actions

Expected Outcome:

Activities under this topic will contribute to all of the following outcomes:

- improved understanding of main gaps in our knowledge as well as of causes and consequences, drivers and barriers to soil health in line with the mission's objectives⁵¹¹;
- improved capacities to assess potential trade-offs between the mission objectives;

⁵¹¹ see Soil Deal mission objectives in implementation plan: https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/soil_mission_implementation_plan_final_for_publication.pdf

- establishment of dynamic roadmaps to support the development and coordination of a coherent portfolio of R&I and other activities for each mission objectives;
- increased capacities to develop, monitor and evaluate the mission's activities based on a common understanding of needs, identified priorities for action and up-to-date information on new knowledge emerging from mission activities and other programmes.

Scope: For effective coordination and implementation of the mission's activities, it is necessary to have a detailed view of already existing knowledge, main knowledge gaps and drivers of soil health along with a common understanding of pathways (R&I and other actions) to act on soil health in line with the mission's specific objectives.

Such "roadmaps" for action for each of the mission's specific objectives should integrate the needs from different disciplines and sectors and address various soil types, land uses and climatic zones across Europe. Particular attention should be given to identifying R&I needs for land uses other than agriculture that have received less attention in the past.

Proposed activities will

- provide a comprehensive, practice-oriented analysis of drivers of soil health considering different socioeconomic dimensions, including public policies, and cultural diversity;
- take stock, integrate and synthesize existing knowledge and knowledge gaps in relation to the eight specific objectives of the mission. This analysis should be constantly updated throughout the project as evidence from new science emerges. It should also allow to display the overall R&I efforts on soils geographically distributed across Member States and Associated Countries, proposing additional actions to overcome an unbalance, where relevant. Activities should result in structured, easily accessible and up-to-date overview of major recent and on-going R&I projects and their results in relation to the eight specific mission objectives. The overview should consider projects funded by the EU (e.g. under the EU R&I Framework Programme and the LIFE programme) as well as at the level of Member States and Associated Countries. Major international initiatives should be taken into account, as appropriate;
- develop roadmaps for mission implementation according to each of the mission's objectives. Roadmaps should include interdisciplinary and transdisciplinary R&I priorities and expected results as well as the technical and socio-economic options to reach each of the mission's specific objectives, both in the short-term and in the long-term. The roadmaps should provide a timeline for action, including expected outputs and outcomes, and suggest measurable R&I key performance indicators to monitor progress towards each of the specific objectives. The roadmaps should be continuously updated over the lifetime of the project and feed into the various phases of the mission.
- provide an operational framework to oversee, monitor and assess the mission's evolving R&I portfolio against the identified objectives and expected outcomes, within the proposed timeframe.

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In carrying out activities, projects should

- build on available knowledge and activities of ongoing Horizon 2020 projects related to soil health;
- involve a range of actors, e.g. researchers, land managers, policy decision makers, economic actors, civil society, social partners and other stakeholders to identify and prioritize the knowledge gaps and R&I needs;
- capitalise on the potential of digital technologies including artificial intelligence (AI) and the internet of things (IoT);
- address synergies and trade-offs across the roadmaps (and mission specific objectives) to provide an integrated assessment of pathways towards healthy soils.

Activities should be undertaken in close cooperation with the mission secretariat and the Mission Board and build upon existing national and European resources such as of the Horizon Results Platform, the European Innovation Partnership EIP AGRI, relevant Knowledge Centres of the Joint Research Centre and the emerging EU Soil Observatory.

Project duration should be a minimum of 4 to 5 years to allow as much as possible the constant update of the eight roadmaps with input stemming at least from the mission's induction and pilot phase (2021 - 2025) and partly from the mission's expansion and innovation phase (2024 - 2030).

HORIZON-MISS-2021-SOIL-02-02: Validating and further developing indicators for soil health and functions

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 12.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p> <p>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 (taking into account possible limitations on their use by international partners). Other data and services</p>

	may additionally be used.
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Expected Outcome:

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

- progress towards a harmonised and cost-effective framework for measuring soil health and for developing a soil health index, based on a widely agreed definition of soil health. In the long term, results may support a harmonised soil monitoring and reporting in Europe, as aimed for by the new EU Soil Strategy;
- significantly improved capacities for soil health monitoring and for assessing the effects of management practices and policy measures based on a set of robust set of indicators for soil health (state and change) and of proxies that are applicable to various land uses;
- support to policy development and to the creation of incentives for sustainable soil management through increased evidence on the links between soil health, soil functions and ecosystem services.

Scope: A priority for soil monitoring concerns the development, harmonization, reporting and scaling of robust indicators to establish the status and changes in soil health. In turn, these indicators determine the operational aspects of the monitoring system in terms of sampling framework, sample collection and preservation, laboratory analysis and temporal aspects.

The selected project will help develop and implement a harmonised reporting structure at EU, national and local levels for soil health. More specifically, activities will

- test the eight indicators proposed in the mission implementation plan against their suitability to measure in a reliable way the status and changes in soil health, in particular in relation to progress towards the mission's specific objectives;
- identify alternative indicators where the ones proposed in the implementation plan of the Soil Mission do not prove to be appropriate (e.g. sensitivity to change, critical thresholds, response time, feasibility of pan-EU operation)⁵¹². The indicators recommended (be it the ones indicated in the implementation plan or alternative ones) should be measurable, realistic (e.g. easy to use in particular for farmers and foresters, urban planners), unambiguous and scalable;
- develop a methodology to combine proposed indicators into a coherent soil health index;
- identify proxies for soil health, which are "easier" to monitor or more reactive to change. These "next generation indicators" could be based for example on observable land use and soil management or on data on the uptake of practices rather than direct measurements of soil properties;

⁵¹² Soil Deal mission implementation plan, section 8B:
https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en

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- demonstrate the link between the proposed soil indicators, soil functions and ecosystems services supported by soils (taking into account the various types of soils and land uses);
- harmonize and benchmark the proposed indicators for a range of soil types, land uses and climate zones in the EU and Associated Countries and define the acceptable limits or thresholds;
- update indicators as a result of feedback following monitoring campaigns or data inputs;
- develop recommendations for an integrated sampling framework including measuring frequency and density to be implemented in the upcoming LUCAS campaign (planned for 2025/2026) and available for policy implementation (e.g. related to EU-wide soil condition assessments, registers for contaminated sites, LULUCF greenhouse gas inventories);
- support the development of a Soil Health Dashboard under the EU Soil Observatory.

In carrying out activities, due account should be taken of the potential of Earth Observation and digital technologies (including Artificial Intelligence) for soil monitoring (see also eligibility conditions).

Activities should be undertaken in close cooperation with the European Commission’s Joint Research Centre, the European Environment Agency and major R&I initiatives such as the European Joint Programme EJP Soil. The JRC’s contribution is particularly relevant in view of further developing LUCAS Soil and the Soil Health Dashboard under the European Soil Observatory.

HORIZON-MISS-2021-SOIL-02-03: Linking soil health to nutritional and safe food

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 7.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility conditions</i>	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: Project results are expected to contribute to all of the following expected outcomes:

- Improved understanding of the soil health and food nexus to promote the development of a coherent portfolio of food systems R&I activities in line with the FOOD 2030 initiative.
- Further understanding of the interlinkages between farming practices, **soil health and four food quality-related characteristics** of agri-food products: **nutritional composition, tastiness (palatability), their technological properties** (i.e. soil health impact on plant characteristics such as protein quality that may affect technological properties and subsequently the final food products) **and safety** (the level of residues of pesticides, metals or mycotoxins).
- Support R&I to facilitate the transition towards healthy and sustainable dietary behaviour. It will contribute to the transformation of food systems to deliver co-benefits for climate (mitigation and adaptation), biodiversity, environmental sustainability and circularity, dietary shift, sustainable healthy nutrition and safe food.
- Improved knowledge on **how** soil health influences food quality (including **nutritional composition, tastiness, technological properties and safety**) and **which methods and tools** exist to determine this.
- Best practices linking soil health to food quality and how they can be deployed along the food system.
- Engaged stakeholders throughout the food system, increased public awareness and business interest on the connection of soil health and food quality, via interactive learning/experimentation through living labs throughout Europe.
- Improved links and knowledge transfer with the EJP Soil⁵¹³ and other soil-relevant Horizon Europe instruments and initiatives (IBF Microbiome Working Group)⁵¹⁴ at EU and international level.

Scope: Soils are essential for the global food system and regulate water, carbon and nitrogen cycles but are put under pressure from population growth and climate change. Maintaining healthy soils helps ensure nutritious, tasty and safe foods, which are essential for achieving the **Sustainable Development Goals** and in particular SDG 2, Zero Hunger.

Soils are an important element in a holistic view of human health. A great proportion of our food comes from terrestrial environments, in which soils play a central role. Soils have an indirect impact on human health as essential soil compounds are taken up by the food produced on it. Unhealthy soils decrease crop harvests and produce crops with reduced nutritional value. Soil contaminants can pose a threat to food safety, malnutrition and human health. Little is known on interactions between nutrient and microbiome composition of soils and the plant (including its secondary metabolite content) and health effects on human diets (including the gut microbiome).

⁵¹³ <https://ejpsoil.eu/>

⁵¹⁴ <https://www.bioeconomy-forum.org/index.php?index=15>

The quality of the soil plays a central role in determining **food quality** as it provides the substrate and building blocks for the growth of plants and their edible food produce, which are then harvested for consumption. Soil health and soil quality represent a fundamental requirement for food safety, and therefore for animal and human health, even though this relationship is not always acknowledged enough. Growing evidence links farm management, soil health and plant health; but the relationships between soil health, climate stress, food and crop nutritional quality, tastiness (palatability), technological properties and human health are less well understood.

While information already exists on the interaction between farming practices, soil health and food, a structured synthesis is needed to obtain a comprehensive and up-to-date understanding of the relevant achievements on this field, in order to support the implementation of the soil mission. A clearer understanding of the possible links between soil health, plants, food and people is the key to improving the quality and healthiness of foods grown in all types of farming systems, including smaller scale urban farming. There is a need to build on the existing knowledge resulting from the latest EU R&I activities and infrastructures that elicit the link between soil, food, diets and human health.

Proposed activities will:

- Further develop and strengthen legitimacy and robustness of the nexus food quality-soil through an engaged, broad and effective European interdisciplinary community of scientists (including medical researchers), innovators and practitioners, while recognising regional and national specificities, contexts and needs.
- Elucidate the current state of knowledge deriving from former and still ongoing Horizon 2020 projects and other relevant state of the art research (e.g., EJP Soil) falling under the the nexus of soils, farming practices, food and human health and identify research and innovation areas where gaps need to be filled.
- Catalyse interdisciplinary collaboration as a holistic perspective, which is necessary to address the issues related to the topic.
- Seek and integrate qualitative and quantitative scientific evidence through *in situ* and lab experimentation and testing, literature review, surveys, analytical modelling (etc.) to support farming practices that positively influence the link between soil health and food quality.
- Develop easy to measure key performance indicators (KPIs) that elicit the connection between soil health, and four food quality-related characteristics (nutritional composition, tastiness, technological properties and safety).
- Adapt, integrate and demonstrate innovative methods to continuously measure the developed KPIs.
- Investigate how well current funding opportunities at all levels (EU, national, regional) address soils and human health research and innovation needs.

- Build upon existing knowledge and solutions designed and developed from previous projects such as the EIT Food initiative⁵¹⁵ that addresses the challenge of soil health in a holistic way, from farm to fork, involving multiple stakeholders, highlighting their stakes in soil health and identifying potential drivers to motivate them to take action in collaboration with farmers [\[1\] Regenerative Agriculture | EIT Food](#)
- Summarise the known factors influencing water, soil and plant health and how these are linked with food quality and human health.
- List the potential mechanisms for improved food nutritional quality through soil health and evaluate the current evidence.
- Provide conclusions and recommendation for future research and innovation.

Proposals are encouraged to build on past or ongoing EU-funded research and innovation projects. Proposal should also seek collaboration with relevant initiatives, and in particular deliver on key objectives of the Horizon Europe Soil Health and Food Mission.

Proposals should explain how they will deliver co-benefits to the four Food 2030 priorities as well as the EU Soil Strategy for 2030.

Proposals should set out a clear plan on how they should collaborate with other projects selected under this and any other relevant topic/call, by participating in joint activities, workshops, as well as common communication and dissemination activities and channels.

Proposals should bring together multiple types of scientific expertise in health and natural sciences, and social sciences and humanities. This topic should involve the effective contribution of SSH disciplines.

HORIZON-MISS-2021-SOIL-02-04: Social, economic and cultural factors driving land management and land degradation

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 10.00 million.
<i>Type of Action</i>	Research and Innovation Actions

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

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- increased evidence on the main factors driving land management and land degradation as a basis for actions by policy makers, land managers and other stakeholders;
- availability of a toolbox for policy solutions to shape conditions and promote practices that are conducive to better soil health and avoid land degradation;
- enhanced capacities for risk assessment and risk management through increased awareness and knowledge on hotspots of land degradation, in particular in Europe.

Scope: Avoiding soil degradation and fostering soil health is for a large part conditional upon the land management practices implemented by land managers, together with pressures on natural and semi-natural habitats. Those practices are framed by several factors (economic, social and cultural) and by the policies applied (agriculture, spatial planning, environment, economic, land tenure, etc.). It is necessary to understand those factors and the manner to influence them, so that farmers and other land managers in rural and urban areas are supported in implementing practices that are conducive to soil health and related ecosystem services.

Proposed activities will:

- study in-depth the role of the following factors in soil health and land degradation: (1) economic factors, e.g. in relation to subsidies and other policy instruments, the polluter pays principle, payments for ecosystem services, costs and benefits of prevention, price of agricultural products, income, land markets, land tenure and prices; (2) social factors, e.g. in relation to civil society, social cohesion, income inequality, population density, farm structures, rural economy, farm demography; (3) cultural aspects, e.g. in relation to values and norms, strength of governance and public institutions, environmental awareness, product preferences, representation of soil and land in Member State rural cultures, education;
- identify the most important aspects that drive land management and land degradation with a view to elaborate integrated approaches, policies and (funding) strategies contributing to lifting the constraints impeding soil health recovery and land improvement and enable sustainable land management;
- develop and test (interactive) tools to assess risks as well as identify and visualise hotspots of land degradation across Europe;
- provide testing grounds for the demonstration of solutions in response to specific types of land degradation⁵¹⁶.

In carrying out the tasks, projects should

⁵¹⁶ see objectives of Soil Deal mission: https://ec.europa.eu/info/publications/implementation-plans-eu-missions_en

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- take account of the diversity of land uses (agriculture, forests, abandoned land, residential, mining and industry, recreational, etc.) and of geographical diversity in the EU;
- work in an interdisciplinary manner and involve the effective contribution of social sciences and humanities (SSH) disciplines (including economics, sociology, history, geography);
- include a task to collaborate with other projects financed under this topic;
- take due account of the potential of digital technologies including artificial intelligence;
- capitalise on activities and results from on-going, relevant Horizon 2020 and Horizon Europe projects such as projects financed under Horizon 2020 RUR-03-2018 (CONSOLE⁵¹⁷, Contract2.0⁵¹⁸ and EFFECT⁵¹⁹) and under topic HORIZON-CL6-2021-GOVERNANCE-01-13 “Modelling land use and land management in the context of climate change”.

While having a main focus on Europe, activities should tap into international expertise and encourage international cooperation, as deemed necessary to implement the above listed tasks.

HORIZON-MISS-2021-SOIL-02-05: Incentives and business models for soil health

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 10.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility and admissibility conditions</i>	The conditions are described in General Annex B. 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:

517 <https://console-project.eu/>
518 <https://www.project-contracts20.eu/>
519 <https://project-effect.eu/>

- increased awareness about the value of investing in soil health and its various co-benefits for land managers, businesses (incl. the financial and insurance sectors), local authorities and civil society;
- increased opportunities for investments in soil health across value chains;
- novel opportunities for developing and diversifying income for land managers;
- enhanced cooperation and new partnerships across different sectors to significantly improve soil health and support the manifold soil functions;
- emergence of new value chains and products based on sustainable soil practices allowing consumers to make more informed decisions.

Scope:

Healthy soils are the basis of many ecosystems services that we take for granted such as sufficient and safe food, clean water, clean air and an abundant biodiversity. They also underpin sustainable and resilient value chains (food and non-food) and contribute to our quality of life in urban and rural areas. The importance of soil health and the wider environmental, social and economic risks and consequences of land degradation are increasingly recognised across society (e.g. land managers, businesses incl. the financial and insurance sectors, local authorities and citizens overall).

The business case for investing in soils is diverse. It can include increasing revenues and developing novel income streams such as from Carbon Farming, reducing or avoiding risks and costs, enhancing reputation, open up finance opportunities and others. Investing in sustainable soil management and restoration is a long-term endeavour. Incentives are therefore needed to help sharing risks and costs, provide innovative finance options and/or reward production and consumption that promotes sustainable land use. Payment for ecosystem services such as carbon capture, clean water, clean air or biodiversity are possible mechanisms but many more are being applied and developed in accordance with the various needs (e.g. crowd-sourcing, certification schemes, funds for impact investment or from citizens and philanthropy).

Proposed activities will

- highlight the multiple dimensions of business cases for investing in soil health by the private and public sectors;
- provide a detailed analysis of existing models in Europe and internationally for creating incentives and for generating revenues from healthy soils. Financial and non-financial incentives shall promote a) sustainable soil management across various land uses and climatic conditions, b) products based on practices promoting soil health, c) consumption and certification practices conducive to soil health, d) the reuse of land and e) sustainable soil management in the context of the EU Taxonomy Regulation and the Sustainable Finance Disclosure Regulation;

- showcase “good examples” from Europe and internationally for investments in soil health and other types of incentives as well as for “innovators” that lead the transition towards sustainable soil practices, taking into account along with the context in which the presented measures work;
- co-design with stakeholders (e.g. businesses, citizens, local authorities) new models for promoting soil health where existing ones do not sufficiently cover the manifold needs;
- provide testing grounds for soil business cases and identify avenues for scaling up action on soil health, thus making sustainable soil management more profitable for farmers, foresters, businesses, municipalities and other actors;
- develop a comprehensive toolbox of incentives (existing and newly proposed ones) including recommendations on innovative ways of blending finance streams and policy measures. Tools shall be tailored to the needs of various stakeholders (incl. farmers and farmer organisations, foresters, businesses, non-for profit organisations, municipalities, civil society) and address the delivery of various ecosystem services (e.g. carbon capture, clean water, clean air, biodiversity) and land uses (e.g. agriculture, forestry, urban areas);
- provide recommendations for policy measures at EU and national levels to support the development of business models which promote soil health;
- establish communities of practice/roundtables for environmentally and socially responsible soil health “investors” (including civil society);
- develop material and carry out promotion events or campaigns to raise awareness regarding opportunities for soil investments;
- explore the potential of digital technologies to support the development of business cases for soil health.

In carrying out the tasks, consortia should build on existing studies for carbon farming, in particular those carried out under contract by the European Commission, such as the recently published “Technical Guidance Handbook – setting up and implementing result-based carbon farming mechanisms in the EU”⁵²⁰.

Proposals must apply the multi-actor approach, thus ensure the participation of a range of stakeholders with complementary expertise.

HORIZON-MISS-2021-SOIL-02-06: Engage with and activate municipalities and regions to protect and restore soil health

Specific conditions

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<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 3.30 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 10.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	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.
<i>Legal and financial set-up of the Grant Agreements</i>	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.
<i>Eligibility and admissibility conditions</i>	The conditions are described in General Annex B. 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:

- increased and more structured dialogue on soil health challenges and solutions at regional and local levels with involvement of a large number of stakeholders and citizens with balanced representation of interests leading to the co-creation of public (including policy response) and private solutions, in coherence with existing EU strategies;
- substantially increased awareness and understanding of the value of soils and soil health challenges and their drivers (both bio-physical and socio-economic dimensions) across Europe;
- increased cooperation between public and private actors, co-implementing solutions aimed at the protection and restoration of soil health;
- more effective exchange of experiences between municipalities and regions across Europe, sharing effectively experiences through an established forum or other

mechanisms, also in view of making best use of opportunities for sustainable soil managements provided by European Funds (e.g. EFRE⁵²¹, EAGF⁵²², ERDF⁵²³).

Scope:

In line with the European Green Deal priorities, with the European Commission's commitment to democracy and equality, and the role that Horizon Europe Missions play in engaging citizens in R&I activities dealing with grand societal challenges, the successful proposals will involve and activate local, and regional (when applicable) authorities to co-design strategies and actions for the protection and restoration of soil health with citizens and stakeholders, including through social innovation. The successful proposals should contribute to the soil mission specific objective 8 soil literacy ⁵²⁴.

The main objective of this topic is to create spaces and practices for regional and local dialogues on soil health and land management, in order to develop a shared understanding of the nature of the challenges and co-create public (including policy response) and private solutions for the protection and restoration of soil health.

Creating effective and societally desirable ways of changing land use to achieve soil health outcomes will necessarily be locally specific, dynamic and allow for co-design, co-implementation and co-assessment with citizens and relevant stakeholders to make solutions more aligned with societal needs, values and expectations and ensure longevity.

Proposals should enable citizen participation both in the local and regional (when applicable) decision-making process and in the implementation of activities related to soil and land management.

The proposed activities will:

- support a large number of municipalities and regions throughout Europe, and related networks, including across borders, to identify, mobilise and engage a critical mass of relevant actors, stakeholders (e.g. farmers and farmers' association, foresters, land managers, urban and spatial planners, civil society organisations, bio-industries, market actors and research institutions), citizens and existing networks of citizens for substantially stepping up the protection and restoration of soil health in all ecosystems (natural, managed, rural and urban);
- explore with regional and local authorities opportunities for making better use of EU financial instruments for sustainable soil management, taking into account programming options taken at the level of Member States and regions;

⁵²¹ https://ec.europa.eu/regional_policy/de/funding/erdf/

⁵²² https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes/european-agricultural-guarantee-fund-eagf_en

⁵²³ https://ec.europa.eu/regional_policy/en/funding/erdf/

⁵²⁴

https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/soil_mission_implementation_plan_final_for_publication.pdf

- enable and support municipalities and regions to co-design strategies and actions for the protection and restoration of soil health with citizens, in coherence with EU soil policy and regional strategies for smart specialisation (RIS3⁵²⁵) and for smart specialisation for sustainability (RIS4⁵²⁶), as applicable;
- develop and implement effective participatory processes which enable and stimulate an extensive dialogue on soil and land related activities at local and regional (when applicable) levels. For these processes to be effective, participants should be equipped with appropriate tools and information, they should be strongly connected to decision-making bodies and they should be empowered to reflect, deliberate and propose public (including policies) and private solutions for sustainable land management and spatial planning at their local or regional levels;
- enhance knowledge sharing among municipalities and regions on best practice processes and outcomes, matching knowledge needs with knowledge produced;
- strengthen inclusive and extensive European networks of municipalities and regions (e.g. the European Land and Soil Alliance⁵²⁷), in interlink, synergy and complementarity with other relevant networks, pursuing citizen-identified soil related objectives, engaged in peer-to-peer learning and co-implementing the co-created solutions;
- substantially increase the capacity of these networks to contribute to meeting the objectives and targets of the Soil Mission;
- include a task to collaborate with the other projects funded under this topic to ensure complementarities, synergies and clear communication to stakeholders around the open calls for third party funding.

The successful proposals will ensure that regional and local governments and administrations are closely associated from an early stage in the projects' lifetime. The involvement of the Committee of the Regions (CoR) and of the Council of European Municipalities and Regions (CEMR), as well as of other relevant networks representing regional and local governments should be sought. Clear channels for the uptake of participatory outcomes in decision-making processes should be identified at local, regional (when applicable) national and/or EU levels and feedback to citizens should be ensured.

Proposals should seek for a balanced representation of regions across Member States and Associated Countries, covering a wide range of geo-climatic zones, socio-economic conditions and land uses. Vulnerable and marginalised categories of the population, minorities and various age groups, including both youth and the elder generation, in urban, peri-urban and rural areas, should be adequately involved and engaged in the process. Gender balance should be ensured in all activities.

⁵²⁵ <https://s3platform.jrc.ec.europa.eu/home>

⁵²⁶ <https://s3platform.jrc.ec.europa.eu/s4>

⁵²⁷ <https://alpinesoils.eu/gspesp/elsa/>

The proposals selected under this topic should dedicate the necessary resources to work closely together to maximise synergies, in particular with regard to the geographic coverage of regions. They should cooperate as well with the mission secretariat and the project funded under HORIZON-MISS-2021-SOIL-02-07. In addition, proposals should take stock of publicly available results obtained by the EJP Soil⁵²⁸ on the knowledge and use of citizen science across Europe and engage with relevant innovation networks (e.g. Smart specialisation platforms⁵²⁹, EIP-AGRI⁵³⁰, Climate-KIC⁵³¹, EIT FOOD⁵³²).

Consortia must apply the multi-actor approach to include expertise in deliberative democracy, civic participation and public engagement. The Joint Research Centre (JRC) may participate as member of the consortium in particular to bring in expertise from its Competence Centre on Participatory and Deliberative Democracy⁵³³.

Applicants should be flexible enough to accommodate for some adjustments that may be requested by the Commission before the grant agreement signature to ensure complementarity of activities between the three selected projects.

HORIZON-MISS-2021-SOIL-02-07: National engagement sessions and support to the establishment of soil health living labs

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Evaluation Procedure</i>	The European Commission should be part of the evaluation panel.

Expected Outcome:

This topic contributes to the Soil Deal mission’s objective to set up 100 soil health living labs⁵³⁴ by 2027 that will co-create innovations (all types of innovation including social and

⁵²⁸ <https://ejpsoil.eu/>

⁵²⁹ <https://s3platform.jrc.ec.europa.eu/>

⁵³⁰ <https://ec.europa.eu/eip/agriculture/en>

⁵³¹ <https://www.climate-kic.org/>

⁵³² <https://www.eitfood.eu/>

⁵³³ https://knowledge4policy.ec.europa.eu/participatory-democracy_en

⁵³⁴ Living labs are collaborative initiatives to co-create knowledge and innovations. More precisely, for the purpose of this mission, “Soil health living labs” are defined as “user-centred, place-based and transdisciplinary research and innovation ecosystems, which involve land managers, scientists and other relevant partners in systemic research and co-design, testing, monitoring and evaluation of solutions, in real-life settings, to improve their effectiveness for soil health and accelerate adoption.” These living

technological) to improve soil health in all places, hence helping to restore ecosystems and biodiversity and sustainably manage natural resources. The successful proposal will ensure an effective launch of the first soil health living labs and lighthouses by preparing and supporting stakeholder communities across Member States and Associated countries and ensuring land managers⁵³⁵, industries, consumers and society at large work together and take effective action on soil health across sectors and land uses.

More specifically, project results are expected to contribute to all of the following expected outcomes:

- a common understanding of the concept of soil health living labs in relation with mission objectives among potential applicants, including awareness of the selection criteria established for living labs and lighthouses in the implementation plan of the soil mission and of the most pressing soil health challenges in the different parts of Europe;
- increased awareness and skills of potential applicants on how to setup and run a soil health living lab and improved access to a pool of capacity building material;
- a varied range of proposals to future calls received in terms of geography, soil types and uses, actors involved and coverage of mission objectives, addressing the main soil health challenges faced in the participating regions; and
- high-quality, collaborative, multi-actor consortia selected to create the first soil health living labs that meet the criteria established in the mission implementation plan, effectively bringing a range of different actors together in joint proposals within each living lab area or region and across borders to create complementary transnational clusters of living labs.

Scope:

The implementation plan of the Soil Deal mission⁵³⁶ provides for the gradual creation of 100 soil health living labs in 100 different European regions. The first living labs will be funded through annual calls under the Horizon Europe work programme 2023-2024. These calls will support collaborative projects, each of the projects assembling three to four living labs located in three to four different regions and countries. At the same time, Horizon Europe will also support the creation of a European network coordination body to support stakeholders in creating and running soil health living labs and to organise exchange of knowledge and innovation between them.

⁵³⁵ labs are collaborations between multiple partners that operate at regional or sub-regional level and coordinate experiments on several sites within a regional or sub-regional area (or working landscapes). The term "land manager" includes farmers, foresters, urban and spatial planners and other decision-makers in the public or private domain with regard to land use in urban and rural areas.

⁵³⁶ https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/soil_mission_implementation_plan_final_for_publication.pdf

The success of the soil mission will depend on how well the community of stakeholders and actors is prepared to implement living labs, in particular the first ones following the 2023-2024 work programme call.

The successful project will organise a stream of support activities including two sets of national engagement sessions complemented by hands-on support of potential applicants based on capacity building material.

The project should work in close cooperation with national and regional authorities, Horizon Europe national contact points (NCPs), mission national hubs, on-going projects preparing for the implementation of the soil mission and structures established at national level on or with interest to soil research and innovation, especially in the context of the European Joint Programme EJP-Soil⁵³⁷. It will, in particular, build on the mapping of existing living labs and lighthouses carried out by the Soil Mission Support project (SMS⁵³⁸) and on the identification of priority challenges and regional needs for living labs identified by the project to be funded under HORIZON-MISS-2021-SOIL-01-01⁵³⁹.

Through national engagement sessions the project should:

- raise awareness and build ownership of the soil mission's objectives as well as the definitions, concept and criteria for soil health living labs and lighthouses, as foreseen in the mission's implementation plan⁵⁴⁰;
- raise awareness on key soil health challenges identified in the different regions and steer a conversation on the regions or areas and sites which would be most suitable to set up the first living labs in each country;
- provide key information and capacity building material on the living lab approach and how to start and run living labs, including a range of different inspiring examples from the EU and beyond;
- provide coaching sessions to potential applicants to start testing and improving their initial ideas; and
- identify potential applicants and facilitate matchmaking between applicants in various countries to support the creation of transnational proposals for living labs.

To ensure equal opportunities for stakeholders in all countries, these engagement sessions should be organised in all 27 Member States and participating Associated Countries in national languages. The sessions should ensure the participation of a diverse group of actors who are most suitable to take part in soil health living labs, covering various land use types and climatic conditions in a balanced manner (e.g. urban, industrial, forestry and agriculture).

⁵³⁷ <https://ejpsoil.eu/>

⁵³⁸ <https://www.soilmissionsupport.eu/>

⁵³⁹ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-mis-s-2021-soil-01-01>

⁵⁴⁰ Reference to specific objectives in mission implementation plan

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In addition, engagement sessions should take into account the mission's eight specific objectives as described in the mission implementation plan and the diversity of soil challenges in each country.

The two sets of national engagement sessions should take place ideally in the first trimester of 2023 (for call 2023) and in the last trimester of 2023 (for call 2024). A well-developed plan for the organisation of the meetings should be part of the proposal, so that the consortium selected for funding can start the engagement sessions immediately following grant agreement signature. The proposal should include options for physical or hybrid sessions with a digital-only option as a back-up. National engagement sessions should be complemented by a series of capacity-building webinars.

In addition to the national engagement sessions, the successful project will act as a helpdesk to provide on-demand support to stakeholders involved in developing proposals for soil health living labs. It will also produce capacity building material capitalising on the national engagement sessions for future use by other entities engaged in supporting the creation of living labs, notably the aforementioned European network coordination body (to be set up).

The consortium should demonstrate outstanding capacities in terms of participatory approaches, facilitation of groups composed of multiple types of stakeholders with varying backgrounds and expertise, and running of living labs and support networks. To this end, the consortium should be composed of partners with varying expertise and capacities to engage with the relevant actors expected to take part in future living labs. The consortium should also include members with a sound understanding of the subject of soil health.

The successful project is expected to last two years. In addition to its collaboration with the Horizon 2020 project SMS and the project funded under HORIZON-MISS-2021-SOIL-01-01, it should work in close coordination and synergy with the mission secretariat. The project should also engage with relevant innovation networks (Smart specialisation platforms, EIP-AGRI, European Institute of Technology and its knowledge and innovation communities (KICs), Enterprise Europe network etc.). Applicants should take note of the content of the mission's implementation plan and be flexible enough to accommodate some adjustments to developments that will have happened between the publication of this call and the grant agreement signature, especially on living lab definitions and selection criteria.

HORIZON-MISS-2021-SOIL-02-08: Next generation soil advisors

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 5.00 million.

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<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility and admissibility conditions</i>	The conditions are described in General Annex B. 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 activities are expected to contribute to all of the following outcomes:

- advisory services are strengthened in their knowledge and skill base to provide impartial advice on soils and their sustainable management, based on a thorough understanding of soil functions and ecosystems services supported by soils across land uses and climate zones throughout Europe;
- new forms of advice are tested and established, making more effective use of digitization and new models for advisor-farmer-data interactions;
- land managers (including owners leasing their land) and other practitioners in rural and urban areas (e.g. farmers, foresters, local authorities in charge of managing green spaces and natural areas) have increased opportunities for access to tailored, practice-oriented knowledge and for exchange of experiences on how to manage land and soils in more sustainable ways;
- the farming sector is better equipped to contribute to meeting targets from the Farm to Fork Strategy^{541 542} and the new EU Soil Strategy⁵⁴³, in particular with regard to the management of nutrients;
- more interactive and effective agricultural and forestry knowledge and innovation systems are in place;
- local/regional authorities are in a position to integrate considerations on soil health (e.g. reuse of soils, reduction of soil sealing, management and increase of green spaces in urban areas) into spatial planning and decision-making.

Scope: Land managers and land owners (including farmers, foresters, gardeners, local/regional authorities, spatial and urban planners) often do not sufficiently apply or promote practices that maintain and/or restore soil health because of a lack of knowledge and tailored advice on locally adapted practices. Impartial advisors with ample theoretic and practical knowledge on soils, their functions and management are key to address this gap. It is therefore essential that advisors' knowledge is constantly updated, standardised to some extent and responds to the evolving needs of land managers and policies.

⁵⁴¹ https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en
⁵⁴² https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en
⁵⁴³ Reference to be included once strategy is adopted and of November 2021

The objective of this topic is to promote the emergence of specialised “soil advisors” and to strengthen the skills of existing advisors and in view of promoting the uptake of innovations for sustainable land management practices by farmers, foresters and other land managers and owners throughout Europe.

The proposed activities will:

- identify, map, and connect – also within the framework of Agricultural Knowledge and Innovation Systems (AKIS) - the main actors relevant to the development, acquisition, exchange and application of knowledge to improve soil health related practices. This can include advisory services, farmers, foresters, other land managers and land owners or land managers’ associations as well as relevant civil society organisations, researchers, and public authorities;
- screen existing educational resources and tools (i.e. digital tools, networks, educational resources etc.) applicable to the various aspects of land management and the prevention of soil degradation;
- develop, test and share best practices on curricula, tools and methods to strengthen the skills and competences of soil advisors taking due account of novel approaches for interactive innovation and of the potential of digital technologies for acquiring, exchanging and disseminating knowledge and know-how;
- create testing grounds for new forms of soil advice and (digital) tools, peer-to-peer knowledge exchange and practitioner-driven experimentation, in particular on the management of nutrients, soil organic carbon and biodiversity. This task should be undertaken by making use – where available - of the FaST tool developed in Member States as part of the Common Agricultural Policy (CAP) and by assessing its effectiveness and benefits (in economic, agronomic and environmental terms). The future Regulation establishing rules on support for the CAP Strategic Plans includes, within the provision on the farm advisory services, the Farm Sustainability Tool (FaST). FaST has to provide on-farm decision-support for the use of nutrients, based on the available data and knowledge and compliant with the existing environmental legislation. The legal text mentions that the FaST has to be implemented by Member States and that “the Commission may provide support to the MS in the design of the FaST, in order to ensure a level playing field between farmers and across the Union”. The FaST has to be implemented no later than 2024;
- develop a comprehensive toolbox of resources in various EU languages for the training of soil advisors and their interactions with land managers and propose strategies (including financial models) to sustain and update training outputs and tools developed and compiled throughout the project.

Proposed activities should take due account of the different situation of advisory services in EU Member States and Associated Countries and ensure wide access (also language-wise) to main resources for soil advisors across Europe. While focusing on agriculture where advisory

services already exist, activities shall explore avenues for introducing soil advice into management and decision-making regarding other land uses (e.g. forest and urban land), taking into account different pedo-climatic and socio-economic conditions across Europe.

Projects are expected to make use of the opportunities provided by the European Innovation Partnership “Agricultural productivity and sustainability (EIP AGRI), national AKIS and the EU Soil Observatory (EUSO), e.g. with regard to dissemination of project outputs and exchange of experiences. They should build as appropriate on existing education programmes and training modules (e.g. from EIT KICs) that provide a knowledge resource relevant for the protection and restoration of soil health and of soil ecosystem services. Similarly, they should take into account results of relevant Horizon 2020 projects⁵⁴⁴.

Proposals must apply the “multi-actor approach”, thus ensure a balanced mix of actors from various sectors and include expertise from behavioural and social sciences.

Call - Research and Innovation actions to support the implementation of the Soil health and Food Mission

HORIZON-MISS-2022-SOIL-01

Conditions for the Call

Indicative budget(s)⁵⁴⁵

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁵⁴⁶	Number of projects expected to be funded
		2022		
Opening: 12 May 2022 Deadline(s): 27 Sep 2022				
HORIZON-MISS-2022-SOIL-01-01	IA	6.00 ⁵⁴⁷	Around 6.00	1

⁵⁴⁴ See e.g. projects NUTRIMAN Thematic Network: (<https://nutriman.net/project>) and Best4Soil - Boosting 4 BEST practices (<https://www.best4soil.eu/>)

⁵⁴⁵ 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 years 2021 and 2022.

⁵⁴⁶ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁵⁴⁷ Of which EUR 4.67 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.01 million from the 'Digital, Industry and Space' budget and EUR 0.16 million from the 'Civil Security for Society' budget and EUR 0.17 million from the 'Culture, creativity and inclusive society' budget.

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HORIZON-MISS-2022-SOIL-01-02	RIA	14.00 ⁵⁴⁸	Around 7.00	2
HORIZON-MISS-2022-SOIL-01-03	RIA	16.00 ⁵⁴⁹	Around 8.00	2
HORIZON-MISS-2022-SOIL-01-04	RIA	21.00 ⁵⁵⁰	Around 7.00	3
HORIZON-MISS-2022-SOIL-01-05	RIA	14.00 ⁵⁵¹	Around 7.00	2
HORIZON-MISS-2022-SOIL-01-06	CSA	3.00 ⁵⁵²	Around 3.00	1
HORIZON-MISS-2022-SOIL-01-07	RIA	6.00 ⁵⁵³	Around 6.00	1
HORIZON-MISS-2022-SOIL-01-08	FPA			0
HORIZON-MISS-2022-SOIL-01-09	RIA	6.00 ⁵⁵⁴	Around 6.00	1
HORIZON-MISS-2022-SOIL-01-10	IA	9.00 ⁵⁵⁵	Around 3.00	3
Overall indicative budget		95.00		

General conditions relating to this call

- ⁵⁴⁸ Of which EUR 10.89 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.36 million from the 'Digital, Industry and Space' budget and EUR 0.37 million from the 'Civil Security for Society' budget and EUR 0.39 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁴⁹ Of which EUR 12.44 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.69 million from the 'Digital, Industry and Space' budget and EUR 0.42 million from the 'Civil Security for Society' budget and EUR 0.44 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁵⁰ Of which EUR 16.33 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 3.54 million from the 'Digital, Industry and Space' budget and EUR 0.56 million from the 'Civil Security for Society' budget and EUR 0.58 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁵¹ Of which EUR 10.89 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.36 million from the 'Digital, Industry and Space' budget and EUR 0.37 million from the 'Civil Security for Society' budget and EUR 0.39 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁵² Of which EUR 2.33 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.51 million from the 'Digital, Industry and Space' budget and EUR 0.08 million from the 'Civil Security for Society' budget and EUR 0.08 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁵³ Of which EUR 4.67 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.01 million from the 'Digital, Industry and Space' budget and EUR 0.16 million from the 'Civil Security for Society' budget and EUR 0.17 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁵⁴ Of which EUR 4.67 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.01 million from the 'Digital, Industry and Space' budget and EUR 0.16 million from the 'Civil Security for Society' budget and EUR 0.17 million from the 'Culture, creativity and inclusive society' budget.
- ⁵⁵⁵ Of which EUR 7.00 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 1.52 million from the 'Digital, Industry and Space' budget and EUR 0.24 million from the 'Civil Security for Society' budget and EUR 0.25 million from the 'Culture, creativity and inclusive society' budget.

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

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-SOIL-01-01: Building the mission's knowledge repository and advancing the European Soil Observatory

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 6.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 5-7 by the end of the project – see General Annex B.

Expected Outcome: In addition to supporting the roll-out of the Mission ‘A Soil Deal for Europe’ and the development of the European Soil Observatory (EUSO), project outcomes will support the implementation of the European Digital Strategy and the European Strategy for Data and act as a digital enabler for the European Green Deal.

Project results should contribute to all of the following outcomes:

- Enhanced capacities for mission implementation and use of mission results through efficient knowledge management.
- Enhanced access to soil relevant knowledge and data including the outcomes from R&I activities for a wide range of stakeholders.
- Land managers and other actors are able to take more informed soil management decisions and have improved access to knowledge on soils, drivers of soil health and land degradation as well as solutions to improve the status of soils.
- The EU Soil Observatory (EUSO) is populated with comprehensive, interoperable datasets and information on soil health.
- Increased potential for new business opportunities from products, technologies and services derived from improved access to valuable soil datasets and from their reuse.

Scope: Data and knowledge on soils are widely distributed and generally not sufficiently structured, which hampers their discovery and usability. A particular difficulty is the integration of outputs and results from research projects that would support a holistic understanding of soil health challenges and potential solutions or allow for the re-use of available knowledge and data for various purposes (e.g. follow-up research, practical applications).

To address this bottleneck, proposals should:

- Develop a strategy, standardised methods and recommendations for the collection, processing, visualisation and exploitation of soil data and knowledge resulting in particular from R&I projects. Data and information gathered should take into account representation from all types of soils, geographic regions and land uses in Europe. Attention should be given to issues of compatibility and interoperability with relevant existing databases and knowledge repositories (e.g. including data from long-term experiments, modelling and monitoring) as well as with services from digital infrastructures, platforms and services.
- Develop and test a prototype for a long-term knowledge and data repository, taking due account of the requirements emerging from the evolution of the EUSO. The repository developed under the project should be open-access, user-friendly and allow to integrate knowledge from research projects and harmonised scientific data from different sources and technologies including in-situ and remote measurements (e.g. from earth observation). The repository is expected to become later part of the EUSO.
- Explore and take advantage of the potential of artificial intelligence (AI) and machine learning to process and use information and data while enhancing their FAIRness (findability, accessibility, interoperability and re-usability) and turning them into relevant, open and accessible knowledge to support potential users.

- Provide examples for practice-oriented “user cases” to show how potential users (e.g. researchers, land managers, businesses or public authorities, decision-makers) can capitalise on and re-use existing information and data from the knowledge repository.

Activities should be implemented in close cooperation with the European Commission’s Joint Research Centre (JRC) and the EUSO, also in view of ensuring the longevity, sustainability and interoperability of data, knowledge and services. The proposals shall include dedicated tasks and allocate appropriate resources for this coordination.

Proposals should take due account of on-going developments with regard to knowledge, information and data management in areas relevant to the Soil Deal mission. This includes EU R&I Horizon Europe tools for data collection and storage, Open Science and FAIR principles, IPR and data ownership issues as well as the INSPIRE GEO portal and the EU Destination Earth (DestinE) initiative and its data lake concept. To this end, proposals should set out a clear plan on how to collaborate with other relevant projects and initiatives.

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

HORIZON-MISS-2022-SOIL-01-02: Improving food systems sustainability and soil health with food processing residues

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 14.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility and admissibility conditions</i>	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 should contribute to all of the following outcomes:

- Improved management and recycling of food-processing residues (solid and liquid) for increased soil health.
- Reduced discharge of nutrients (i.e., nitrogen, phosphorus, potassium) into sewage/natural watercourses and landfills relieving eutrophication in water bodies.
- Empowered interdisciplinary design processes to create soil improvers and to valorise food by-products in food systems (e.g., land managers, industry, SMEs, local authorities, educational institutions and civil society).

- Higher number of co-developed solutions and investments (public and private) in circular bioeconomy projects.

Scope: The predominantly linear economic models of food production are unsustainable and heavily rely on finite and scarce resources, such as phosphorus and water. In spite of recent achievements in resource efficiency gain, the food production and processing industry still requires large volumes of clean water; while also contributing to the discharge of nutrients and organic matter into publicly owned streams and waterbodies. Those nutrients and organic matter can be valorised and used as soil improvers,⁵⁵⁶ instead of being wasted. Food systems actors need to recognise that the re-use of water and food by-products is key to achieve circularity in the industry and contribute to soil health.

Circularity is a key component of the European Green Deal, especially the Circular Economy Action Plan, the Farm to Fork and the Bioeconomy strategies, and the supporting FOOD 2030 research and innovation policy. Circularity will allow to reverse the trends of unsustainability and provides opportunities to transform by-products into valuable resources for soils, while taking into account the current legislation on animal by-products and fertilizers^{557,558}. An untapped opportunity lies in the valorisation of food waste streams containing nutrients and organic matter that can contribute to soil health, fertility and restoration while considering the food waste hierarchy⁵⁵⁹. The food waste hierarchy focuses on prevention actions, followed by reuse and recycling pathways, and should guide the development of strategies that tackle food processing residues for soil improvement, when those residues cannot be used for other higher value uses (e.g., re-use for animal feed or use as by-products).

Proposed activities should:

- Develop high quality standardized processes and strategies for the re-use of food processing residues streams for soil improvers production, which would be in compliance with EU regulatory requirements.
- Assess existing best practices (e.g., from H2020 projects⁵⁶⁰ and EIT Food initiatives such as Regenerative Agriculture⁵⁶¹) identifying key economic, environmental and social factors that enable/hinder the replicability/scalability of using food waste streams as soil improvers (e.g., food by-products collection and treatment, bio-waste composting) and

⁵⁵⁶ 'Soil improver' means a material added to soil in situ, whose main function is to maintain or improve its physical and/or chemical and/or biological properties, with the exception of liming materials.

⁵⁵⁷ Animal by-product regulation (EC) No 1069/2009

⁵⁵⁸ EU Circular Economy Fertilising Products Regulation (EU 2019/1009).

⁵⁵⁹ Sanchez Lopez, J., Patinha Caldeira, C., De Laurentiis, V. and Sala, S., [Brief on food waste in the European Union](#), Avraamides, M. editor(s), European Commission, 2020, JRC121196t

⁵⁶⁰ For example, [LEX4BIO](#) – Optimizing Bio-based Fertilisers in Agriculture – Knowledgebase for New Policies (call H2020-RUR-2018-2, <https://cordis.europa.eu/project/id/818309>); [CIRCULAR AGRONOMICS](#) - Efficient Carbon, Nitrogen and Phosphorus cycling in the European Agri-food System and related up- and down-stream processes to mitigate emissions (call H2020-SFS-2017-2, <https://cordis.europa.eu/project/id/773649>) ; [NOMAD](#) - Novel Organic recovery using Mobile Advanced technology (call H2020-SFS-2019-1, <https://cordis.europa.eu/project/id/863000>); [WATERAGRI](#) - Water Retention And Nutrient Recycling In Soils And Streams For Improved Agricultural Production (call H2020-SFS-2019-2, <https://cordis.europa.eu/project/id/858375>).

⁵⁶¹ <https://www.eitfood.eu/projects/the-regenerative-agriculture-revolution-2020>

addresses the challenge of soil health in a holistic way, from farm to fork, involving multiple stakeholders (e.g., farmers, food industries) as well as by engaging ordinary citizens in defining their matters of concerns and co-creating solutions.

- Elaborate a list of actions and priorities to overcome efficiently potential challenges and trade-offs (e.g., potential biological or chemical risks, storage, transport, lack of awareness of circular potential), and outline innovative techniques by which food waste can be transformed into a safe valuable input for soil amelioration, while reducing the loss of nutrients in nature.
- While taking into account current EU regulatory frameworks and the role of different actors, set up an evaluation framework for the design, implementation and monitoring of the performance of actions and strategies that will lead to an optimised use of food processing waste streams, including the best way for applying each type of these residues into the soil.
- Identify public and private funding streams that can be used to support circular bioeconomy projects and initiatives that boost nutrient use for soil health.
- Create societal awareness by bringing together public authorities, the private sector, educators, researchers, media, NGO and citizens to foster circularity of the food system to develop activities targeted to different actors.
- Implement a participatory and multi-actor approach by engaging a wide range of food system actors to co-create research and improve co-ownership of results.

The proposed activities should take into account animal health legislation in order to prevent animal and public health risks.

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs through close collaboration with the EU Soil Observatory and other projects to be funded under the mission.

HORIZON-MISS-2022-SOIL-01-03: Soil biodiversity and its contribution to ecosystem services

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 16.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility</i>	The conditions are described in General Annex B. The following

<i>conditions</i>	exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.
<i>Eligibility and admissibility conditions</i>	Proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.

Expected Outcome: This topic contributes to the objectives and targets of the EU Soil Strategy⁵⁶² which foresees that by 2050, all soils in the EU should be healthy, i.e. are in good chemical, physical and biological conditions, and thus able to continuously provide as many ecosystem services as possible. It also contributes to the Mission ‘A Soil Deal for Europe’⁵⁶³, in particular to its specific objective 6 “Improve soil structure to enhance habitat quality for soil biota and crops”.

Project results should contribute to all of the following outcomes:

- Significantly improved understanding of ecosystem services related to soil biodiversity as well as of the role of soil biodiversity in the provision of relevant soil functions and ecosystem services.
- Enhanced protection, sustainable management and restoration of soil ecosystems through more targeted (policy) incentives and wide-spread knowledge on sustainable soil management practices and solutions, including a better integration of soil within land use planning and frameworks to evaluate ecosystem services.
- Significantly improved availability of soil biodiversity indicators which support the implementation, assessment and monitoring of policy at large scale (i.e. EU).

Scope: Soils underpin the delivery of a range of ecosystem services which are essential for the environmental, social and economic wellbeing of people. Many of these services such as the production of biomass for food and other uses, removal of pollutants, support of above-ground biodiversity (e.g. farmland birds), provision of soil structure, nutrient cycling and carbon storage depend on the activities of a fascinating and complex network of soil organisms such as insects, invertebrates, bacterial and fungal organisms.

While our knowledge about individual components of soil biodiversity has significantly increased, the links between soil biodiversity, the multifunctionality of soils and the delivery of ecosystem services needs to be further explored. Furthermore, there is still a need to better understand the overall organisation of soil organisms (e.g. in terms of abundance, species richness, relationships of interdependence, evolution through time and community structure) and how pressures and drivers (including their interactions) resulting from different forms of

⁵⁶² https://ec.europa.eu/environment/publications/eu-soil-strategy-2030_en

⁵⁶³ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/soil-health-and-food_en

land use and climate change affect the composition, functions, resilience and adaptation capacities of soil biota and their capacity to support multiple ecosystem services (ES).

Proposed activities should:

- Provide a comprehensive view of the composition, functions, and dynamics of the network of soil-living communities (e.g. species distribution, abundance, ecological interactions and belowground-aboveground relationship) under different types and intensities of land use in agricultural, forest, (semi-) natural and urban areas.
- Establish the links between soil biodiversity, soil functions and ecosystem services taking into account potential trade-offs between different ES.
- Propose indicators for capturing and measuring soil biodiversity (beyond red list species) and the provision of ES and demonstrate practical approaches for the use of these indicators by land managers and policy-decision makers.
- Identify drivers and pressures (including their interactions) of soil biodiversity in different types of land use and explore their effects on soil community composition and functioning and how ES provision is altered and hampered as a consequence of these pressures. Due attention should be given to under-studied pressures and drivers, as justified by proposals.
- Provide a framework to assess and value the contribution of soil biodiversity to ES in economic terms, building on existing work including the one undertaken under the initiative “Mapping and Assessment of Ecosystem Services”⁵⁶⁴ (MAES).
- Translate the knowledge created into practical applications for land managers and policy-decision makers to increase the uptake of practices that promote soil biodiversity and optimise its contribution to soil functions ES.

In carrying out activities, proposals should consider various land uses such as urban, agriculture, forest, (semi)-natural, wetlands, drylands, industrial and mining, and highlight those types of soils where previous research has shown significant knowledge gaps. With regard to agriculture, work should draw on sustainable practices, applied across a range of farming systems and benefit both conventional and organic farming. Activities should be carried across a range of climatic/biogeographical regions in the EU and Associated Countries and take into account different spatial scales (e.g. field, landscape). Transdisciplinary approaches should be applied and include social sciences and humanities. The project should follow a multi-actor approach.

Activities should be undertaken in close cooperation with the European Commission’s Joint Research Centre (JRC) and the European Environment Agency (EEA). The cooperation with the JRC is particularly relevant in view of further developing the LUCAS Soil survey and the Soil Health Dashboard under the European Soil Observatory (EUSO). Proposals should

⁵⁶⁴ https://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/index_en.htm

demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs through close collaboration with the EUSO and other projects to be funded under the Soil Deal mission.

Projects funded under this topic should also take into account major R&I initiatives such as the European Joint Programme EJP Soil⁵⁶⁵, the European Biodiversity Partnership Biodiversa+⁵⁶⁶, the Global Soil Partnership^{567 568}, the Global Soil Biodiversity Initiative SoilBON⁵⁶⁹, EuropaBON⁵⁷⁰ and other projects working on soil biodiversity. To this end proposals should foresee dedicated tasks and allocate appropriate resources.

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

HORIZON-MISS-2022-SOIL-01-04: Remediation strategies, methods and financial models for decontamination and reuse of land in urban and rural areas

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 21.00 million.
<i>Type of Action</i>	Research and Innovation Actions

Expected Outcome: This topic will help to progress towards Green Deal objectives, notably the Zero Pollution Strategy. It contributes to the Mission 'A Soil Deal for Europe'⁵⁷¹, in particular to its specific objective 4 “Reduce soil pollution and enhance restoration”.

Project results should contribute to all of the following outcomes:

- Private and public land managers can better prioritise and plan activities and investments for soil restoration and decontamination based on increased knowledge on the state of land and soil pollution.
- Knowledge on technical solutions for soil decontamination and restoration is more widespread and better integrated in a wider sustainable land use and spatial planning approach.

⁵⁶⁵ <https://ejpsoil.eu/>

⁵⁶⁶ <https://www.biodiversa.org/1759>

⁵⁶⁷ <https://www.fao.org/global-soil-partnership/en/>

⁵⁶⁸ <https://www.fao.org/documents/card/en/c/cb1928en/>

⁵⁶⁹ <https://www.globalsoilbiodiversity.org/soilbon>

⁵⁷⁰ <https://europabon.org/>

⁵⁷¹ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/soil-health-and-food_en

- Effective measures for soil restoration are in place and contribute to noticeable improvements in soil health on the medium term as well as to the circular use of land and to the achievement of no net land take in the EU by 2050.
- Better insights into origin, fate and hotspots of pollution are made available to support assessments of hazard, exposure and risks from soil pollution.
- MS regions affected by the need for a green transition are supported in their efforts to remediate and reuse contaminated soils such as from former mining sites and benefit from new opportunities for soil use.

Scope: Soil contamination is widely acknowledged as a severe hazard to humans as well as to soil health, affecting the ability of soils to provide ecosystem services including the provision of safe and sufficient food, clean water or habitats for biodiversity. There is a need to better understand the precise sources (both point source and diffuse pollution) and the status of soil pollution as well as its effects on soil health, the environment, and its socio-economy consequences as a basis for more effective and wide-spread remediation of soils. Given the diversity of situations regarding the type and severity of pollution as well as an incomplete view on the scale of polluted soils, effective strategies need to be in place that allow to prioritise investments, identify the most appropriate methods and financial strategies for decontamination and prepare the ground for concrete actions.

Proposed activities should:

- Provide an overview of the state-of-play of the various types of soil pollution in Europe across the different land uses in urban and rural areas. Work should build on publicly available national contamination maps (e.g. in GIS format) to develop interactive, combined soil pollution maps that allow amongst others the identification of particular pollution hotspots.
- Identify, quantify and characterise sources, pathways, receptors and risks of soil pollution in urban and rural areas.
- Develop comprehensive strategies for soil restoration targeting various types of soil contamination and land uses. These strategies shall consider main areas of pollution (hotspots) and propose priorities for actions based on a site-specific risk-based approach.
- Identify and further develop methods, tools and approaches for the monitoring and remediation of polluted soils, giving due consideration to Nature Based Solutions (NBS) and bioremediation techniques (including biotechnologies) while considering their level of development (TRL) and cost-effectiveness.
- Develop financial and spatial planning models (taking into account social criteria) which promote the reuse of land and support the private and public sector in their decision-making for soil restoration and decontamination, in particular in areas with high investment needs.

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- Enhance the capacity for outlook and foresight reporting on soil pollution and the development of an EU priority list for contaminants of major and/or emerging concern that pose significant risks for European soil quality, and for which vigilance and priority action at European and national level is needed.
- Explore the potential for decontamination and reuse of former mining sites to support the regions most negatively affected by the green transition through synergies with the polluter pays' principle and the Just Transition Fund (JTF).

In implementing the work, due account should be taken of soil contamination in urban, peri-urban and rural areas.

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs through close collaboration with the JRC's EU Soil Observatory.

Proposals should include dedicated tasks and appropriate resources for coordination measures and joint activities with other relevant projects funded under Horizon 2020, Horizon Europe and the Research Fund for Coal and Steel, and in particular with other projects funded under this topic. Potentially, projects financed under this topic could cooperate with future Living Labs created under the Mission 'A Soil Deal for Europe' and working in the area of soil remediation.

HORIZON-MISS-2022-SOIL-01-05: Monitoring, reporting and verification of soil carbon and greenhouse gases balance

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 14.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility conditions</i>	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: This topic supports the implementation of key actions of the European Commission Communication on sustainable carbon cycles and carbon farming⁵⁷² and the upcoming regulatory framework on carbon removals certification⁵⁷³.

Project results should contribute to all of the following outcomes:

- The relationships between carbon flux dynamics of typical carbon farming practices and its driving factors (ecophysiology of ecosystems) as well as the impact of climate change on soil organic carbon (and as a consequence on soil fertility and food production) are better understood.
- The development of standards to track payment systems for carbon farming and, of methods to consider the maintenance of carbon already stored in soils in carbon farming schemes is enhanced.
- Reduced administrative and financial burden associated with carbon farming management practices.
- Increased stakeholder faith and robustness of standards in voluntary (or other) carbon markets, leading to increased potential for revenue opportunities.

Scope: The success of carbon farming in Europe will be judged on the quantity and longevity of the sequestration of carbon in plants and soils (by enhancing carbon capture and/or reducing the release of carbon to the atmosphere). To upscale carbon farming successfully, and to establish long-term business perspectives, it will be essential to standardise methodologies and rules for monitoring, reporting and verifying (MRV) the gains or losses in the carbon sequestered. Currently, private schemes apply very different benchmarks and rules to the carbon credits placed on the voluntary markets. Without a high degree of transparency, environmental integrity, and methodology standardisation buyers will be hesitant about the quality of the offered carbon farming credits. Furthermore, land managers will find it difficult to estimate their potential revenues and policy makers will be reluctant to allow the use of such credits for compliance in the regulatory framework. In consequence, it will be challenging to develop a successful market.

Carbon accumulation and storage in soil and biomass is the result of the interaction of several biotic and abiotic factors. The development and use of biogeochemical models permits a better scientific understanding of soil response to specific or alternative management decisions, together with the impact of climatic variations.

It would be important to carry out complete balances of greenhouse gases (GHG), not only CO₂, to verify that the increase in carbon storage or the decrease in CO₂ emissions are not offset by an increase in emissions of other GHG (N₂O for example). Interdependence of biogeochemical cycles should be considered, at minimum the coupling of C and N cycles.

⁵⁷² COM(2021) 800 final, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0800>.

⁵⁷³ The Commission will propose an EU regulatory framework for the certification of carbon removals by end of 2022; see <https://europa.eu/!W3JmfU>.

Proposals should address various (as many as possible) types of the following land cover or land uses, particularly agricultural lands, in the EU and Associated Countries: agricultural croplands (both conventional and organic), grasslands and pasture land (both intensive, organic and semi-natural/low inputs range lands), agroforestry and regenerative managed land, and paludiculture; forest lands (including afforested and deforested land); historical (drained, exploited) peatlands; managed wetlands; peri-urban areas subject to conversion.

Proposals should therefore look to a range (as wide as possible) of climatic/biogeographical regions in the EU and Associated Countries. Proposals should favour a landscape approach to their framing and analysis. In addition, proposals should address the largest geographical area possible.

Proposed activities should:

- Refine and develop procedures for, and execute, direct on-field measurements and estimation of carbon and GHG accumulation and fluxes exchange in soil and biomass, reflecting the specificities of the different ecosystems, climates and land uses. Special attention should be drawn to the integration of existing databases, the application of digital technologies (including Artificial Intelligence) and the combination of remote sensing with in-situ monitoring. Links to the EU Soil Observatory (by incorporating the data from on-field measurements), the LUCAS Soil module and the European-wide Integrated Carbon Observation System (ICOS) GHG standardised data⁵⁷⁴ should be considered.
- Develop (biogeochemical) process models⁵⁷⁵ incorporating new and diverse data streams (e.g. on nutrient cycles, from earth observation systems, drones and precision agriculture) to provide higher temporal and spatial resolution on the biological, chemical and physical drivers of fluxes, accumulation and storage of soil organic carbon and matter.
- At a landscape level, assess the effect of, and the soil's capacity for, the implementation of different carbon-capture practices on land (e.g. subsoil carbon storage). Results should be geographically explicit (at sub-landscape, e.g. farm holding level), for example, on (short-term) carbon accumulation, as well as on its vulnerability related to natural and human disturbances, for the landscape object (land use or land cover) subject to the research work.
- Develop, standardise and demonstrate methodologies and rules for cost-effective monitoring, reporting and verifying the gains or losses in carbon sequestered in soil and through carbon farming at sub-landscape (e.g., farm holding level). Indicators should include soil carbon stability and permanence considerations.
- Assess the economic and social impacts of carbon farming on the local (landscape level) rural economy. Identify effective means for ensuring access to financial support (incl.

⁵⁷⁴ <https://www.icos-cp.eu/>

⁵⁷⁵ Generally referred to as Tier 3 in IPCC literature.

small-scale and remote farmers, gender considerations, etc.). Provide information on which management options are economically viable and have optimal potential for soil organic carbon formation. Results could lead to decision-supporting tools for policy makers and land managers, to support participative policy design and impact for carbon accumulation as well as to better quantify the effects of climate change on soil organic carbon (and possibly on soil fertility).

All activities should include or take into account the impacts of climate change, whenever relevant.

In carrying out the tasks, consortia should:

- Build on existing studies for carbon farming, in particular those carried out under contract by the European Commission, such as the recently published “Technical Guidance Handbook – setting up and implementing result-based carbon farming mechanisms in the EU”⁵⁷⁶;
- Take into account and build on relevant previous initiatives on soil carbon monitoring (e.g. ESA World Soils⁵⁷⁷, Joint Research Centre’s SEPLA (Satellite based mapping and monitoring of European peatland and wetland for LULUCF and agriculture) project⁵⁷⁸) and EU projects (e.g. EJP Soil⁵⁷⁹, ClieNFarms⁵⁸⁰, HOLISOILS⁵⁸¹ and other relevant projects including under LIFE).
- Establish contact with complementary initiatives to develop integrated soil monitoring systems (e.g. EU Soil Observatory, Member States);

Proposals should include dedicated tasks and appropriate resources for coordination measures and foresee joint activities with the projects selected under HORIZON-MISS-2021-SOIL-02-05 (Incentives and business models for soil health), HORIZON-MISS-2022-SOIL-01-06 (Network on carbon farming for agricultural and forest soils).

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs through close collaboration with the EU Soil Observatory.

HORIZON-MISS-2022-SOIL-01-06: Network on carbon farming for agricultural and forest soils

Specific conditions	
<i>Expected EU</i>	The Commission estimates that an EU contribution of around EUR 3.00

⁵⁷⁶ <https://op.europa.eu/en/publication-detail/-/publication/10acfd66-a740-11eb-9585-01aa75ed71a1/language-en>

⁵⁷⁷ <https://www.world-soils.com/>

⁵⁷⁸ The first interim report should be published in April 2022.

⁵⁷⁹ <https://ejpsoil.eu/>

⁵⁸⁰ <https://cordis.europa.eu/project/id/101036822>

⁵⁸¹ <http://holisoils.eu>

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<i>contribution per project</i>	million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 3.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	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.
<i>Eligibility and admissibility conditions</i>	Proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.

Expected Outcome: This topic supports the implementation of the European Commission Communication on sustainable carbon cycles⁵⁸² and the upcoming regulatory framework on carbon removals certification⁵⁸³, and thereby contributes to the design and implementation of carbon-farming practices in Europe.

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

- Increased knowledge about carbon farming practices through networking and exchange of experiences.
- Enhanced uptake and development of standards for carbon farming in Europe.
- Increased capacities for measuring, monitoring and standardising carbon fluxes, in particular at landscape level through a robust network for data collections.

Scope: The success of carbon farming in Europe will be judged on the quantity and longevity of the sequestration of carbon in plants and soils (by enhancing carbon capture and/or reducing the release of carbon to the atmosphere). To upscale carbon farming successfully and to establish long-term business perspectives, it will be essential to standardise the methodologies and rules for monitoring, reporting and verifying (MRV) the gains or losses in carbon sequestered. Currently, private schemes apply very different benchmarks and rules to the carbon credits placed on the voluntary markets. Without a high degree of transparency, environmental integrity, and methodology standardisation, buyers will be hesitant about the quality of the offered carbon farming credits. Land managers will also find it difficult to estimate their potential revenues and policy makers will be reluctant to allow the use of such credits for compliance into the regulatory framework. Thus it will be challenging to develop a successful market.

⁵⁸² COM(2021) 800 final, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0800>.

⁵⁸³ The Commission will propose an EU regulatory framework for the certification of carbon removals by end of 2022; see <https://europa.eu/!W3JmfU>.

Proposed activities should:

- Build and coordinate a network of key stakeholders drawn from European research facilities, systems developers, solution providers, land advisors and managers and others, involved in soil and biomass programmes linked to carbon sequestration, in particular at the landscape scale level.
- Develop a platform for knowledge sharing, exchange of experiences, mutual learning, best practices and support facilitating the development (design, implementation and evaluation) of result-based carbon farming schemes.
- Underpin the establishment of data collection networks (such as carbon flux measurements stations, ground sampling campaigns, etc.), promoting the practice of data sharing and standardisation, retrieval and aggregation of information.
- Identify gaps and opportunities at the landscape level in ecosystem monitoring and soil carbon flux mitigation practices, leveraging EU level geographically-explicit monitoring systems and solutions.

A substantial part of the resources of the project should be dedicated to co-creating solutions, enhance communication and engage with stakeholders, thereby ensuring co-ownership of solutions and supporting the interest, knowledge and uptake of carbon farming.

Special attention should be given to the promotion and integration of existing databases and datasets, the application of digital technologies, and the combination of Earth observation techniques (drones, airborne, satellite based) with in-situ monitoring for the enhancement of robustness and provision of timely, accurate estimates.

Proposals should take into account and build on relevant previous initiatives on soil carbon monitoring (e.g. ESA World Soils, SEPLA) and EU projects (e.g. EJP Soil ⁵⁸⁴, ClieNFarms ⁵⁸⁵, HOLISOILS ⁵⁸⁶, International Research Consortium on (agricultural) soil carbon (CSA)⁵⁸⁷, and other relevant projects including under LIFE).

Activities should be coordinated with the projects selected under HORIZON-MISS-2022-SOIL-01-05: Monitoring, reporting and verification of soil carbon and GHG balance, and development of carbon farming business models.

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs through close collaboration with the EU Soil Observatory.

Proposals should apply a multi-actor approach, thus involve expertise from various sectors and disciplines.

⁵⁸⁴ <https://ejpsoil.eu/>

⁵⁸⁵ <https://cordis.europa.eu/project/id/101036822>

⁵⁸⁶ <http://holisoils.eu>

⁵⁸⁷ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl6-2021-climate-01-07>

HORIZON-MISS-2022-SOIL-01-07: Foster soil education across society

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 6.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility and admissibility conditions</i>	Proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this work programme part.

Expected Outcome: This topic contributes to the implementation of the Mission ‘A Soil Deal for Europe’⁵⁸⁸, in particular to its specific objective 8 “Increase soil literacy in society across Member States”. It supports the objectives of the European Green Deal, the European Climate Pact⁵⁸⁹ and the EU Soil Strategy for 2030⁵⁹⁰. In addition, results obtained under this topic should contribute to the objectives of the European Education Area⁵⁹¹, the Education for Climate Coalition⁵⁹² and improve the European sustainability competence framework (GreenComp) to prepare people to face the challenges of a changing climate world.

Project results should contribute to all of the following outcomes:

- teaching programmes and targeted communication, education and engagement materials on soil are more widely available in numerous European languages;
- higher uptake and diffusion of good practices and hands-on activities related to soil education across the EU and Associated Countries;
- soil literacy is more firmly embedded in educational curricula at all levels and supports behavioural change and the adoption of sustainable practices both individually and collectively based on a better understanding of the vital importance of soils for human life and planetary health;
- increased awareness of the importance of soil and its functions, as well as of the Mission objectives, amongst pupils, students and professionals across Europe.

⁵⁸⁸ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/soil-health-and-food_en

⁵⁸⁹ European Climate Pact: https://europa.eu/climate-pact/index_en

⁵⁹⁰ EU Soil Strategy https://ec.europa.eu/environment/publications/eu-soil-strategy-2030_en

⁵⁹¹ European Education Areas: https://ec.europa.eu/education/education-in-the-eu/european-education-area_en

⁵⁹² Education for Climate: <https://education-for-climate.ec.europa.eu/en>

Scope: As highlighted in the EU Soil Strategy for 2030 and in the implementation plan of Mission ‘A Soil Deal for Europe’, soil is a scarce and non-renewable resource which is vital to ensure life on Earth. However, the value of soil is not fully recognised in society. Individuals are often unaware of the relevance of soil in their daily lives and of the pressures that human activities pose on soil health. To improve society’s understanding of soils and incentivise behavioural change, there is a need to embed soil related subjects more firmly into the various levels of education and link enhanced information on soils with people’s values. Activities under this topic will foster soil education in schools, universities and professional education in EU Member States and Associated Countries.

Projects are expected to:

- Provide an overview of the current level of soil related knowledge (including on soils’ vital functions) and the educational needs amongst pupils (primary and secondary levels), students (tertiary level), and society overall across the EU and Associated Countries.
- Develop courses/modules for soil education in primary and secondary schools as well as in universities (building particularly on EJP Soil ⁵⁹³ relevant results) and in professional/technical training by developing and testing pedagogical techniques for effective knowledge flows. Work should make use a variety of learning tools (including e-learning content⁵⁹⁴) and carry-out activities targeted at different age groups and types of learning.
- Identify, further develop, and demonstrate/pilot exemplary sustainable practices on soil related educational settings (e.g. vegetable gardens, composting activities, etc.), in rural, peri-urban and urban areas. Examples identified should be geographically balanced and draw on experiences from a wide number of EU Member States and Associated Countries, ideally targeting at least half the number of EU Member States.
- Disseminate and make widely available educational and training material gathered and developed throughout the project. Information and material shall be oriented to different target groups and available in numerous European languages, making use of advanced tools, channels and network for education and communication (e.g. School Education Gateway, EU Academy, Education for Climate platform). In addition, communication campaigns should be implemented to give visibility to the project, the Mission objectives and the importance of soil and its manifold functions.
- Enhance knowledge exchange and peer-to-peer learning amongst the different target groups (e.g. school pupils and university students including beneficiaries of relevant Marie Skłodowska-Curie Actions ⁵⁹⁵, teachers, professors, trainers, and organisations)

⁵⁹³ EJP Soil: <https://ejpsoil.eu/>

⁵⁹⁴ The online course developed by the Joint Research Centre on soil biodiversity is a good example of such a content targeting teachers and pupils which aims at raising awareness and increasing knowledge about soil: <https://academy.europa.eu/courses/soil-a-burst-of-life-the-hidden-world-beneath-our-feet>

⁵⁹⁵ Marie Skłodowska-Curie Actions: <https://ec.europa.eu/research/mariecurieactions/>

through existing networks (e.g. EIT graduates⁵⁹⁶) and empower them to act on fostering strong links with the Education for Climate Coalition to co-create concrete education solutions;

- Engage with public authorities and institutions responsible for primary, secondary and tertiary education on the findings resulting from the work undertaken in view of promoting their uptake. This should include the preparation of targeted recommendations for policy makers and the organisation of events such as a conference at EU level and a series of national conferences to exchange on the results.

Proposals should apply a multi-actor approach where soil experts, behavioural scientists, specialists in pedagogy, in education, and in communication are working closely together with teachers, professors and students in synergy with the Education for Climate Coalition and relevant initiatives of National Coalitions. In addition, consortia should tap into the expertise of organisations and institutions with experience in citizen science and in running science shops.

Potentially, the project financed under this topic could also cooperate with Living Labs and lighthouses that will be created in future calls under the Mission ‘A Soil Deal for Europe’.

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs through close collaboration with the European Soil Observatory (EUSO)⁵⁹⁷ and other projects to be funded under the mission, in particular under the topic HORIZON-MISS-2021-SOIL-01-01⁵⁹⁸. The proposals shall include dedicated tasks and appropriate resources for this coordination.

Activities under this topic should be in line with the Council recommendation on education for environmental sustainability (EES), and should contribute to the European community of practice on EES, Education for Climate Coalition⁵⁹⁹.

HORIZON-MISS-2022-SOIL-01-08: Framework Partnership Agreement (FPA) for a Living Lab network support structure

Specific conditions	
<i>Type of Action</i>	Framework Partnership Agreement
<i>Evaluation criteria, scoring and threshold</i>	The specific award criteria for Framework Partnership Agreements are specified in the General Annex D of the Horizon Europe Work

⁵⁹⁶ EIT alumni: <https://eitalumni.eu/>

⁵⁹⁷ EU Soil Observatory, <https://ec.europa.eu/jrc/en/eu-soil-observatory>

⁵⁹⁸ Preparing the ground for healthy soils: building capacities for engagement, outreach and knowledge, Topic ID: HORIZON-MISS-2021-SOIL-01-01

⁵⁹⁹ Education for Climate Coalition is a flagship project of the Education Area. It is the European participatory community for teachers, students and education stakeholders to act collectively on innovative education solutions for environmental sustainability: <https://education-for-climate.ec.europa.eu/community/home>

	Programme
<i>Evaluation Procedure</i>	Only one proposal will be selected under this topic. The evaluation committee will be composed partially by representatives of EU institutions.

Expected Outcome: This Framework Partnership Agreement (FPA) aims at supporting the effective implementation of the Mission ‘A Soil Deal for Europe’ (hereafter referred to as the Soil Deal Mission) and in particular its overall goal of setting up a network of 100 living labs and lighthouses by 2030.

The FPA will allow to establish an effective support structure (hereafter referred to as LL support structure) to coordinate and promote activities under the mission’s network of living labs and lighthouses. The LL support structure will cater for the needs of living labs and lighthouses that will be selected through open calls in forthcoming Work Programmes of the Soil Deal Mission (from 2023 onwards).

Following the evaluation of proposals submitted under this FPA call⁶⁰⁰, one consortium of partners is going to be retained. The FPA will specify the objectives, the nature of the actions planned and the procedure for awarding specific grants through subsequent calls resulting in Specific Grant Agreements (SGA). The FPA will thereby contribute to all of the following expected outcomes:

- The network of living labs is effectively performing and expanding, ensuring a comprehensive representation of all types of soils, land uses and soil health challenges across the EU and Associated Countries.
- Potential applicants and selected projects are well equipped with information and advice (e.g. formal, technical) to set up and run living labs in line with the criteria established in the Mission’s implementation plan⁶⁰¹.
- Approaches between living labs and lighthouses are harmonised and the interface between the living labs / lighthouses and other mission activities is well established.
- Participants in living labs and lighthouses benefit from comprehensive exchange of experiences as well as from thematic, technical advice provided by the LL support structure.
- Social capital and citizen engagement on soil health challenges is increased and solutions developed and tested in living labs are effectively disseminated.

⁶⁰⁰ See General Annexes of the Horizon Europe Work Programme (box listing other types of actions and forms of funding): https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-13-general-annexes_horizon-2021-2022_en.pdf

⁶⁰¹ See criteria listed in section 8.D of the mission implementation plan: https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/soil_mission_implementation_plan_final_for_publication.pdf

- The uptake and scaling up of good practices by land managers is promoted by the LL support structure within and beyond living lab areas.
- Experiences across the Living Lab network can be assessed based due to common monitoring and evaluation procedures.

Scope: Living labs and lighthouses are a core element of the mission ‘A Soil Deal for Europe’. They are meant to bring together a variety of actors to co-create and test solutions on the ground, thereby delivering innovations with high potential for rapid uptake by land managers and other relevant actors (e.g. industry, consumers etc.) across Europe.

This FPA will establish the conditions and identify the consortium of partners who – through subsequent calls and one or more Specific Grant Agreements - will run a support structure for the coordination of Living Labs funded under the Soil Deal Mission. The mission’s implementation plan foresees that the LL support structure should start operating in 2024, at the same time as the first waves of living labs are effective⁶⁰². In this way, the LL support structure will provide timely and targeted services to the emerging network of living labs.

Applicants should develop a draft action plan to broadly describe how they foresee to implement the following activities:

- Set up a structure that will act as a one-stop shop catering for the needs of living labs and lighthouses funded under the Soil Deal mission and providing tailor made advice to participants of living labs and lighthouses. The structure will serve as a contact point for interaction with counterparts in Europe and beyond.
- Build on the engagement sessions organised by the project funded under topic HORIZON-MISS-2021-SOIL-02-07⁶⁰³ to further promote the creation of transnational clusters of living labs. This will include a continued methodological support provided to stakeholders concerning the building of the consortia, the setting-up and the running of the living labs under the Soil Deal Mission. Due attention shall be given to a balanced geographic and thematic coverage of living labs and lighthouses.
- Facilitate the exchange of knowledge and innovation among the different actors involved in the funded living labs and lighthouses, e.g. through the organization of workshops, seminars, annual network meetings, cross-visits. The facilitation could involve the creation of joint working groups on transversal aspects (e.g. digital knowledge, behavioural sciences, data management) as well as specific technical themes (e.g. on particular soil challenges or land uses).

⁶⁰² Calls for Living labs will be launched in Work Programme 2023 and continue throughout subsequent Work Programmes such as to reach the target of 100 living labs by 2030. See section 3.2 of the implementation plan: https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/soil_mission_implementation_plan_final_for_publication.pdf

⁶⁰³ HORIZON-MISS-2021-SOIL-02-07: National engagement sessions and support to the establishment of soil health living labs

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- Provide a web-portal and other tools for information, exchange of experiences and outreach. This should include the continuation and further development of an interactive map of all living labs and lighthouses funded under the soil deal mission, building on the work undertaken by the Horizon 2020 project SMS⁶⁰⁴ and the project selected under topic HORIZON-MISS-2021-SOIL-01-01⁶⁰⁵. The web-portal and associated tools should benefit both participants in the network of living labs and lighthouses and a wider public beyond the network.
- Monitor and assess activities of living labs and lighthouses and report on the main outcomes and experiences. This will include providing feedback on the links between activities under the Living lab and lighthouse network and other parts of the mission (i.e. the R&I programme, monitoring and citizen engagement).
- Disseminate solutions created, tested and demonstrated in living labs and lighthouses so that these are widely known and can be accessed by potential users outside the living lab areas.

Applicants under the FPA topic should demonstrate relevant expertise to implement successfully the foreseen activities listed above. They should possess a good understanding of the concept of soil health living labs and lighthouses as well as sound skills in project management, coordination and monitoring, including the implementation of actions for stakeholder and citizen engagement, communication, dissemination and knowledge sharing.

The work should be implemented in close connection with the European Partnership EIP-AGRI⁶⁰⁶ and its activities at EU, national and regional levels. Synergies should be developed as well with activities carried out under other relevant programmes and initiatives such as INTERREG⁶⁰⁷ and the Smart Specialisation Platform⁶⁰⁸. Where possible, work should make use of the Education for Climate platform⁵⁹³.

Partners should connect with other projects and initiatives relevant for the Soil Deal Mission's network of living labs and lighthouses, both in Europe and beyond. This includes EU projects ALL-Ready⁶⁰⁹ and AE4EU⁶¹⁰, the upcoming Horizon Europe partnership on agroecology living labs⁶¹¹ and like-minded international activities such as the Canadian Agroecosystem Living Labs Network (CALL)⁶¹² and the US Long Term Agroecosystem Research Network (LTAR)⁶¹³.

⁶⁰⁴ www.soilmissionsupport.eu

⁶⁰⁵ HORIZON-MISS-2021-SOIL-01-01: Preparing the ground for healthy soils – building capacities for engagement, outreach and knowledge.

⁶⁰⁶ <https://ec.europa.eu/eip/agriculture/en>

⁶⁰⁷ <https://interreg.eu/>

⁶⁰⁸ <https://s3platform.jrc.ec.europa.eu/>

⁶⁰⁹ <https://www.all-ready-project.eu/>

⁶¹⁰ <https://www.ae4eu.eu/>

⁶¹¹ https://ec.europa.eu/info/research-and-innovation/research-area/agriculture-forestry-and-rural-areas/partnership-agroecology_en

⁶¹² [Living Laboratories Initiative: International engagement and partnerships - agriculture.canada.ca](https://www.livinglaboratoriesinitiative.org/)

⁶¹³ [The Long-Term Agroecosystem Research Network \(usda.gov\)](https://www.ltar.gov/)

Close cooperation with Commission’s Joint Research Centre is essential in view of further developing the European Soil Observatory (EUSO), and ensuring the longevity, sustainability and interoperability of data, knowledge and services arising from Mission implementation.

The cooperation between the European Commission and selected partners under this FPA will cover – through subsequent Specific Grant Agreements - the period 2023-2030. The FPA needs to be in place during this whole period in order for the SGAs to be awarded to fund the LL support structure that will run until the conclusion of the Soil Deal Mission in 2030.

HORIZON-MISS-2022-SOIL-01-09: Citizen science for soil health

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 6.00 million.
<i>Type of Action</i>	Research and Innovation Actions

Expected Outcome: This topic contributes to the implementation of the Mission 'A Soil Deal for Europe'⁶¹⁴, in particular to its specific objective 8 “Increase soil literacy in society across Member States”.

Project results should contribute to all the following outcomes:

- The public's awareness of the value of soil is significantly increased.
- Citizens are empowered to take an active role in science and in increasing the knowledge base on soils by monitoring and gathering data on soil biodiversity and becoming more aware of the importance of soils and the soil food web in their daily lives.
- Greater availability of local scale data on soil health. This will expand and complement established soil databases to support critical landscape decisions and policy development.
- The EU Soil Observatory scope is enlarged and populated with citizen science data.

Scope: Citizen science is an important vehicle in bringing science to the people and promoting the goal of universal and equal access to scientific data and information. For example, there is a tremendous potential to foster education and learning opportunities through the involvement of students in real world issues. Citizen science also engages society at large in key policy developments through direct participation to assess impacts.

⁶¹⁴ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/soil-health-and-food_en

Crowdsourced data is being used, for example, by UN agencies for humanitarian activities and citizen scientists are providing data relevant to monitoring the sustainable development goals (SDGs).

Citizen science projects amplify scientific research and support scientists to accomplish their research objectives. Citizen science data are used extensively in a range of environmental studies such as in the areas of above-ground biodiversity and water pollution. In relation to soils however, citizen science has received less attention. Yet, it has huge potential to raise awareness on the importance of soils, gather a wide range of site-specific data and thereby complement “formal” soil sampling programmes and existing data sets.

The engagement of citizens, including land managers in soil mapping and soil monitoring provides novel opportunities, also through the use of digital technologies. Main challenges however remain the integration of data from citizen science with data from professional observations due to issues of quality control, methodologies and potential observer bias.

Proposed activities should:

- Develop a strategy for the standardised collection, processing and visualisation of soil health data that are submitted by citizens directly from the field. Attention should be given to issues of location, characterisation and harmonisation of measurements and observations as well as the quality, compatibility and interoperability of data from citizens with related established databases (e.g. national monitoring programmes, earth observation systems and long-term experiments). Consideration should be given to potential privacy aspects.
- Formulate recommendations, guidelines, protocols and field guides to gather data and observations by the public in a more systematic way.
- Demonstrate and test user-friendly tools for the assessment of soil health related issues by soil users and the wider community (i.e. considering physical, chemical and biological properties) considering the language diversity of the EU.
- Propose and test methods for quality control of citizen science data as well as for the integration of heterogeneous data from citizen science activities.
- Run citizen science initiatives, ideally concurrently in all Member States, contributing to enhanced soil sampling, mapping, reporting and the understanding of pressures affecting soil health. Initiatives should address as a minimum the areas of soil biodiversity and soil pollution. Activities should encourage broad participation of citizen groups across Europe, especially young people, with a genuine interest in environmental issues, soil and land management.
- Create a prototype for a long-term repository of data resulting from the citizen science initiatives implemented under the project. The repository should display information in all official EU languages and take due account of the requirements emerging from the

evolvement of the European Soil Observatory (EUSO)⁶¹⁵ as an eventual host of the repository. The repository should be user-friendly and be capable of integrating data from different in-situ sources and technologies. Tools should be put in place to ensure quality control and assess possible systematic discrepancies during the collection of the data. It should support the findability, accessibility, interoperability and re-usability of data while turning them into relevant, open and accessible knowledge for potential users including decision makers. Data uploaded to repository should be supported by metadata.

- Develop case studies demonstrating how the collected data can be used e.g. by farmers, other land managers, scientists, businesses, educators or institutions responsible for soil management.
- Provide training and build capacities for soil related citizen science initiatives.

In implementing activities, attention should be given to

- a. addressing the diversity of soil types in relation to biogeographic regions and different land uses across the EU.
- b. issues of integration, compatibility and interoperability with existing soil monitoring systems, especially LUCAS and monitoring programmes from Member States and Associated Countries.
- c. technical (hardware/software) considerations associated with the IT environment of the EU's Joint Research Centre (JRC).

Consortia should ensure participation from partners with ample social sciences expertise. They should also provide a clear plan on how they intend to collaborate with other soil-focused citizen science initiatives that can further raise awareness of issues affecting soil health as well as with the project emerging from topic HORIZON-MISS-2022-SOIL-01-01.

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs through close collaboration with the Joint Research Centre and its EUSO.

HORIZON-MISS-2022-SOIL-01-10: Innovations for soil improvement from bio-waste

Specific conditions	
<i>Expected EU contribution per project</i>	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.

⁶¹⁵ The EUSO is developed by the EU's Joint Research Centre: <https://ec.europa.eu/jrc/en/eu-soil-observatory>

<i>Indicative budget</i>	The total indicative budget for the topic is EUR 9.00 million.
<i>Type of Action</i>	Innovation Actions

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

- Enhanced entrepreneurship on circularity and regenerative processes and, in particular, increased number of highly innovative start-ups and industrial hubs developing and scaling up soil improvers⁶¹⁶ from bio-waste⁶¹⁷.
- Significant reduction of bio-waste for landfill.
- Improved nutrient recovery from bio-waste for soil improvers production.
- Improved environmental, health and safety performance of soil improvers from bio-waste and related production operations, including improved testing methods throughout the entire life cycle.
- New improved and demonstrated products, value chains and services available for soil improvers derived from bio-waste.

Scope: Bio-waste is a potential valuable resource to improve soil fertility. Fostering the production of soil improvers and optimizing bio-waste recycling can help maximise the uptake of circular innovations for sustainable soil products and services, in line with the new Circular Economy Action Plan⁶¹⁸ and Waste Framework Directive⁶¹⁹. As a result, new business opportunities will be created, while increasing the availability in the market of soil improvers derived from circular production systems. Projects should support the achievement of the sustainable development goals (SDGs), in particular SDG 11 ‘Sustainable Cities and Communities’, whenever relevant.

Proposed activities should:

- Develop and pilot innovations to support large-scale product validation and market replication of soil improvers from bio-waste that allow a major step increase in technological maturity of products and or services (Technology Readiness Levels 7-8).
- Develop and pilot appropriate business models that consider different market outlets and marketing strategies for the proposed innovations while significantly decreasing bio-waste incinerated or destined for landfills.

⁶¹⁶ ‘Soil improver’ means a material added to soil in situ, whose main function is to maintain or improve its physical and/or chemical and/or biological properties, with the exception of liming materials.

⁶¹⁷ See definition in the Waste Framework Directive (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0098>).

⁶¹⁸ A new Circular Economy Action Plan (https://eur-lex.europa.eu/resource.html?uri=cellar:9903b325-6388-11ea-b735-01aa75ed71a1.0017.02/DOC_1&format=PDF)

⁶¹⁹ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Text with EEA relevance) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008L0098>

- Demonstrate the safety of soil improvers, and their production phase, in accordance with relevant EU regulatory frameworks related to their placing on the market and generate data to support improved social and environmental performance.
- Analyse vulnerabilities, dependencies, and need for critical infrastructure that may hinder the upscaling of production and marketing of soil improvers from bio-waste.
- Monitor the pre-market processes (i.e., design, production, testing, etc.) to demonstrate upscaling feasibility and economic profit.
- Implement a multi-actor approach by involving a large number of stakeholders (e.g., SMEs, city councils, research centres, civil society) to improve upscaling capacity.

In carrying out the tasks, consortia should take into account and build on relevant previous EU projects (e.g., Scalibur,⁶²⁰ WaysTUP!,⁶²¹ VALUEWASTE⁶²²) and coordinate work with projects to be funded under HORIZON-MISS-2022-SOIL-01-02: Improving food systems sustainability and soil health with food processing residues and HORIZON-MISS-2021-CIT-02-01: Urban planning and design for just, sustainable, resilient and climate-neutral cities by 2030. The proposals shall include dedicated tasks and appropriate resources to deliver on these coordination and collaboration activities.

When addressing a bio-waste which may include parts of animal origin it is crucial that proposal should align to the requirements of the EU legislation on animal by-products – in particular Regulation (EC) No 1069/2009 of the European Parliament and of the Council of 21 October 2009⁶²³ laying down health rules as regards animal by-products and derived products not intended for human consumption and Commission Regulation (EU) No 142/2011 of 25 February 2011⁶²⁴ implementing Regulation (EC) No 1069/2009.

Proposal should consider the bio-waste hierarchy⁶²⁵ - a priority order in waste prevention and management legislation and policy, which starts with prevention actions, followed by reuse and recycling pathways. This hierarchy should guide the development of strategies that tackle bio-waste for soil improvement.

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs through close collaboration with the EUSO and other projects and initiatives to be funded under the mission.

⁶²⁰ <https://cordis.europa.eu/project/id/817788>

⁶²¹ <https://cordis.europa.eu/project/id/818308>

⁶²² <https://cordis.europa.eu/project/id/818312>

⁶²³ <https://eur-lex.europa.eu/eli/reg/2009/1069/2019-12-14>

⁶²⁴ <https://eur-lex.europa.eu/eli/reg/2011/142/2021-12-05>

⁶²⁵ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Text with EEA relevance) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008L0098>

Other Actions not subject to calls for proposals

Procurement actions

1. Mission Implementation platform

Main tasks: to assist the EU Commission (in particular the mission secretariat) in the implementation of the mission. This will include

- support to the overall coordination of activities under the various building blocks of the mission;
- developing KPIs and a framework for monitoring and reporting on the portfolio of projects and activities;
- monitoring and assessing activities funded under the mission in quantitative and qualitative ways and tracking progress towards achievement of the mission's targets, objectives and overall goal;
- support to reporting on progress of the mission, in particular in view of the mid-term evaluation which is planned to take place in 2024;
- reaching out to stakeholders in Member States and internationally as well as support communication and dissemination activities. This will include the organisation of events to promote the involvement of a range of stakeholders in mission activities.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative budget: EUR 3.00 million from the 2021 budget

Indicative timetable: 2nd Quarter 2022 (initial contract duration: 2022-2025, with a possible extension until 2027)

Form of Funding: Procurement

Type of Action: Public procurement

Indicative budget: EUR 3.00 million from the 2021 budget⁶²⁶

⁶²⁶ Of which EUR 2.27 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.54 million from the 'Digital, Industry and Space' budget, EUR 0.13 million from the 'Civil Security for Society' budget, EUR 0.07 million from the 'Culture, creativity and inclusive society' budget.

Scientific and technical services by the Joint Research Centre

1. Technical and scientific support for the development of an EU soil monitoring framework

The JRC will

- provide technical expertise and operational capacity to support the coordination of activities and exchanges with Member States, Associated Countries (AC), ESTAT, the, the EEA and scientific community;
- oversee the mission's activities in relation to soil monitoring and update approaches as new science from R&I activities become available (e.g. on specific targets or new methods, technologies and metrics for measuring indicators);
- engage with Member States/Associated Countries in view of further developing the LUCAS Soil Module and developing a shareable soil information system that supports a harmonised EU reporting structure for soil health monitoring. In doing so, the JRC will work closely together with the project selected under topic Soil-02-03;
- use data from activities funded under the mission to feed into the EUSO;
- develop an integrated sampling framework to be implemented in 2025/2026 (tbc) by the LUCAS campaign and be available for policy implementation (e.g. related to EU-wide soil condition assessments, registers for contaminated sites, LULUCF greenhouse gas inventories);
- make use of the potential of Earth Observation, digital tools and AI as appropriate;
- build on INSPIRE principles to ensure interoperable data sets and compatibility with Global Soil Partnership Global Soil Information System (GLOSI) initiative.

Form of Funding: Direct action grants

Type of Action: Provision of technical/scientific services by the Joint Research Centre

Indicative timetable: 2nd/3^d Quarter of 2022

Indicative budget: EUR 2.00 million from the 2021 budget

Form of Funding: Direct action grants

Type of Action: Provision of technical/scientific services by the Joint Research Centre

Indicative budget: EUR 2.00 million from the 2021 budget⁶²⁷

⁶²⁷ Of which EUR 1.51 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.36 million from the 'Digital, Industry and Space' budget, EUR 0.09 million from the 'Civil Security for Society' budget, EUR 0.04 million from the 'Culture, creativity and inclusive society' budget.

Missions' joint actions

Joint action between Mission Ocean, Seas and Waters and Mission Adaptation to Climate Change

This call is implemented jointly by Mission “Adaptation to Climate Change” and Mission “Restore our ocean and waters by 2030” to ensure integrated approaches. As such, activities under this joint call will address the objectives and impacts of these two Missions as stated in their respective introductory statements.

Call - Joint Demonstration

HORIZON-MISS-2022-OCEANCLIMA-01

Conditions for the Call

Indicative budget(s)⁶²⁸

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁶²⁹	Number of projects expected to be funded
		2022		
Opening: 12 May 2022 Deadline(s): 27 Sep 2022				
HORIZON-MISS-2022-OCEANCLIMA-01-01	IA	20.00 ⁶³⁰	Around 20.00	1
Overall indicative budget		20.00		

General conditions relating to this call

⁶²⁸ 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 years 2021 and 2022.

⁶²⁹ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁶³⁰ Of which EUR 4.21 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.62 million from the 'Digital, Industry and Space' budget and EUR 12.32 million from the 'Climate, Energy and Mobility' budget and EUR 0.41 million from the 'Civil Security for Society' budget and EUR 0.43 million from the 'Culture, creativity and inclusive society' budget.

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

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-OCEANCLIMA-01-01: Mission Climate adaptation and Mission Ocean and waters - Joint demonstration for coastal resilience in the Arctic and Atlantic sea basin

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 20.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 20.00 million.
<i>Type of Action</i>	Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>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).</p> <p>The following additional eligibility criteria apply: in addition to the standard eligibility conditions, proposals must include demonstration activities to be carried out in at least 5 different regions located in at</p>

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	least 3 different countries in the Atlantic and/or the Arctic geographical area, involving and including in the consortium entities from these countries.
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 5 to 7 by the end of the project – see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties. 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 100,000, to showcase the feasibility, replicability and scale up of the solutions developed within the project in the “associated regions”. An “associated region” can benefit from the Financial Support to Third Parties provided under this topic within the duration of the project only once.

Expected Outcome:

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

- Upscaling of innovative solutions building climate resilience for coastal areas, making communities climate-proof and weather-resilient, in particular by adapting to extreme weather events and sea level rise;
- Collaboration and twinning between most advanced and front-runners regions on climate adaptation and other regions vulnerable to similar climate impacts;
- Acceleration of synergetic transformation to climate neutrality and climate resilience in coastal areas, supporting the development of the blue and low carbon economy;
- Technological, logistical, social and economic innovation for the restoration of marine, coastal and river ecosystems;
- Basin-scale cooperation, including through transition arrangements that create socially and economically sustainable propositions for local stakeholders, including, where appropriate, for indigenous people;
- Contributing to the implementation of the European Green Deal, the EU Adaptation Strategy, the EU Biodiversity Strategy, as well as the Galway Statement, the Belém Statement, the OSPAR Convention in connection with the implementation of EU marine environment, biodiversity and Arctic policies, the EU Arctic Joint Communication, the Atlantic Action Plan 2.0 with the aim to work for the benefit of all communities of stakeholders around the Atlantic and the Arctic and the Arctic Action Plan enhancing collaborative efforts to address the challenges in the Arctic;

- Contribution to the Mission's Digital Ocean and Water Knowledge system through marine observations and open data and knowledge sharing;
- Contributing to better informed citizens and decision makers, for a better governance and coastal resilience planning

Scope: This topic relates to the Adaptation to Climate Change Mission's third objective, aiming to support at least 75 full scale deep demonstrations of climate resilience and to Mission Ocean, and waters' objective 1 aiming at protection and restoration of marine and freshwater ecosystems and biodiversity. It also contributes to the objectives of the Marine Strategy Framework Directive (MSFD) and the Water Framework Directive (WFD) - including in terms of Good Environmental Status and restoration of aquatic ecosystems - and the Marine Spatial Planning Directive (MSPD).

Proposals should demonstrate solutions to build resilience to climate change in coastal areas in the Atlantic and Arctic sea basin, through the deployment of nature-based solutions, including nature-based infrastructures. Thus, proposals under this joint Missions topic should identify and demonstrate solutions that contribute to the objectives of both Missions at once.

Proposals under this topic must deploy full-scale demonstrations of innovative solutions with concrete measurable impacts leading to a measurable increase of the resilience and adaptation capacity of the regions involved, whilst contributing to climate change mitigation and biodiversity conservation.

Proposals should focus on demonstration activities for the restoration of marine and coastal ecosystems through nature-based solutions/infrastructures that boost coastal resilience, such as oyster reefs, kelp forests, seagrass, coastal wetlands and salt marshes. The proposals should also explore different pressures and climate change adaptation needs in a systemic way, such as the soil erosion and its impact on coastal areas resulting in marine ecosystem pressures. Combination of nature-based measures with hybrid solutions and relevant Blue-Green engineering may be considered, provided these combined solutions are sustainable and integrated in coastal resilience planning and decision-making processes and provide adequate social and environmental safeguards.

Citizen engagement is a key concept for the Missions. The proposals should involve local actors, communities and citizens in actively shaping solutions for marine ecosystem restoration and protection and holistic socio-ecological management of restored and valuable ecosystems, including where appropriate European volunteer/solidarity corps and citizens science activities in the restoration activities. As the regions and communities need to undergo significant transformation to become climate-proof, measures need to be co-owned and respond to local needs and shared sustainability visions. The involvement of local authorities and local communities, including indigenous peoples, is required in order to ensure that the solutions designed are best suited, co-created and with the necessary ownership. Activities should, therefore, promote the involvement of local communities in order to hear from them the impact of intended actions, and to co-create measures that meet the Missions' aims while taking local communities' needs and values on board.

Proposals may involve coastal communities particularly vulnerable to the risks of extreme weather events, sea level rise, permafrost and/or ice melting. Islands and the EU Outermost Regions urgently needing restoration measures to adapt to climate change thus ensuring their population safety and climate-proof and weather resilient infrastructure may be covered by proposals.

Proposals should:

- Carry out demonstration activities in 5 different regions belonging to the Atlantic and/or Arctic sea basin, involving and including in the consortium entities from these three countries;
- Involve at least 10 ‘associated regions⁶³¹’ as third parties to showcase the feasibility, replicability and scale up of the solutions developed. The consortium will proactively reach out to the “associated regions” to enable them to follow closely the project and its demonstration activities, providing knowledge transfer to them and with technical assistance to build capacity and to implement coastal resilience solutions in their territories;
- Identify further areas and locations where the solutions are replicable and draw up an action plan and roadmap to replicate and scale up the ecosystem and biodiversity restoration solutions and actions.

As a mechanism to provide knowledge transfer and technical assistance to the “associated regions”, the selected projects will be able to provide support to third parties in the form of grants. The maximum amount of the envisaged Financial Support to Third Parties is EUR 100,000 per third party for the entire duration of the action. Proposals should outline the selection process of the third parties to which financial support would be granted based on principles of transparency, objectivity and fairness.

Proposals should (when relevant) build upon existing knowledge and solutions and support the upscaling of successful pilots, including from beyond the EU, designed and developed in the frame of projects funded by current and previous European and national programmes, in particular the European Union framework programmes for Research and Innovation (such as Horizon 2020, and the All-Atlantic Ocean Research Alliance⁶³²), as well as the LIFE programme, Erasmus+, the national and regional programmes in the Atlantic/Arctic basins, such as INTERREG⁶³³ and European Maritime and Fisheries Fund, as well as the activities of the Sustainable Blue Economy Partnership and the Atlantic Action Plan 2.0.

⁶³¹ ‘Associated regions’ are understood as areas with similar ecosystems (e.g. neighbouring regions and/or in a different sea basin) and/or less-developed regions, with the view to build capacity to implement the innovative solutions to restore ecosystems. The proposals should ensure that the associated regions are located in Member States/Associated countries other than those that are part of the project consortium. An “associated region” should benefit from the Financial Support to Third Parties provided under this topic only once.

⁶³² <https://allatlanticocean.org/howeare>

⁶³³ <https://www.atlanticarea.eu/> and <https://www.interreg-npa.eu/>

In addition, the projects granted under this topic will be requested to contribute to the networking and coordination activities led by the soon to be established Mission Implementation Platform, amongst all the projects funded under the Horizon 2020⁶³⁴, the European Green Deal call and under Horizon Europe, when particularly relevant for climate adaptation knowledge and solutions. Applicants should acknowledge this request and already account for these obligations in their proposal, making adequate provisions in terms of resources and budget to engage and collaborate with the Adaptation to Climate Change Mission and with Mission Ocean and waters governance structures. Projects funded under this topic are strongly encouraged to participate in networking and joint activities also with other activities and projects within the Atlantic and/or Arctic basin on restoration of marine ecosystems and climate adaptation.

The projects funded under this topic will:

- build links with other Mission activities and other relevant activities within the basin to maximize synergies, as well as with the European Blue Parks, other Missions' activities;
- include a mechanism and the resources to establish operational links with the Climate-ADAPT platform (run by the European Environment Agency (EEA) together with DG CLIMA) that will act as a central element for the monitoring, support and visualisation of the Adaptation to Climate Change Mission progress in European Regions. To this purpose, projects will feed their results to the Climate-ADAPT and EEA assessments;
- support the Ocean and Water Knowledge System, in particular by contributing to biodiversity monitoring, modelling and knowledge creation and data.

As appropriate, the projects should also link with other Missions relevant initiatives. These networking and joint activities could, for example, involve the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities.

To this extent, proposals should provide for dedicated activities on knowledge exchange and networking and earmark appropriate resources.

⁶³⁴ LC-CLA-13-2020 https://cordis.europa.eu/programme/id/H2020_LC-CLA-13-2020 and LC-CLA-2020 12a Advancing climate services | Programme | H2020 | CORDIS | European Commission (europa.eu)

Destination: Complementing missions through national activities

The goal is to develop a coordination network to engage Member States and Associated Countries, and in particular their respective programmes and actions, in support of the missions and towards achieving mission objectives. Missions are rooted in research and innovation. However, EU-level research and innovation actions alone will not be sufficient to achieve the societal impact they aim to deliver. Complementary actions from Member States and countries associated to Horizon Europe will significantly increase the chance of success of missions. This network will facilitate alignment and where possible coordination of these actions, in support of the missions and increase their impact.

Proposals for topics under this Destination should set out a credible pathway to contributing to the Destination's goal and objectives, and more specifically to all the following impacts:

- Increased commitment at institutional level in EU Member States and Associated Countries to implement complementary actions in support of missions;
- Facilitate exchanges of ideas and knowledge on how to achieve mission goals and how to support them through national, regional and local actions;
- Increased preparedness for mission implementation.

The following call(s) in this work programme contribute to this mission:

Call	Budgets (EUR million)	Deadline(s)
	2021	
HORIZON-MISS-2021-COOR-01	2.00	14 Sep 2021
Overall indicative budget	2.00	

Call - Coordination of complementary actions for missions

HORIZON-MISS-2021-COOR-01

Conditions for the Call

Indicative budget(s)⁶³⁵

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁶³⁶	Number of projects expected to be funded
		2021		
Opening: 22 Jun 2021 Deadline(s): 14 Sep 2021				
HORIZON-MISS-2021-COOR-01-01	CSA	2.00 ⁶³⁷	Around 2.00	1
Overall indicative budget		2.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex

⁶³⁵ 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 years 2021 and 2022.

⁶³⁶ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁶³⁷ Of which EUR 0.38 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.58 million from the 'Digital, Industry and Space' budget and EUR 0.29 million from the 'Health' budget and EUR 0.07 million from the 'Civil Security for Society' budget and EUR 0.58 million from the 'Climate, Energy and Mobility' budget and EUR 0.09 million from the 'Culture, creativity and inclusive society' budget.

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	D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-COOR-01-01: Coordination of complementary actions for missions

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 2.00 million.
<i>Type of Action</i>	Coordination and Support Actions

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

- Cooperation between national officials on implementation modalities of complementary actions across the European Union and Associated Countries;
- Appropriate mechanisms are in place to facilitate the multi-level deployment of complementary actions for missions;
- A common vision on the achievement of missions objectives is shared at a national, regional and local level across the European Union and Associated Countries.

Scope: This action aims to foster cooperation and coordination between EU-level actions and complementary national, regional and local actions in support of the implementation of missions.

The mission concept aims to deliver societal impact. The missions will require commitment and a sense of ownership across the European Union. The support of Member States and Associated Countries, regional and local actors and actions that are complementary to EU level action is needed to deliver on the envisaged societal impacts of missions.

This action should also leverage opportunities raised by the digital transition. It should enhance the missions' potential for rapid testing, piloting, demonstrating, scaling up and de-risking of large place-based R&I projects/initiatives, after the conclusions of their preparatory phase⁶³⁸.

The above described expected outcome and scope should be achieved by establishing a Missions Core Network that will:

- Support alignment and where possible coordination between national, regional and local initiatives for the implementation of missions;
- Exchange best practice on how complementary national, regional and local efforts and related funding can contribute to missions objectives;
- Facilitate engagement of regional and local actors in support of EU-level activities or complementary national activities in support of the implementation of missions;
- Map the relevant national, regional and local, stakeholders, civil society organisations and institutions, which are key actors to support the implementation of missions and can support delivery of their objectives.
- Map different existing funding streams – both at EU and national or global level (including private sector investments) and explore their mobilisation and possible combining in support of mission implementation;
- Prepare for potential hubs at national level. The core network will have the role of advising the specific mission hubs, as missions will need new implementation modalities. Each mission specific hub will be linked to this cross-cutting network.
- Develop the basis for a governance model supporting the coordination of complementary actions to implement the missions.

The consortium should include organisations capable of coordinating national level representatives (e.g. representative from relevant Ministries or national agencies, academia) and relevant regional and local actors (e.g. representatives from city councils).

The network should also deliver specific events, in consultation with the European Commission:

- **‘Meet & Monitor, Missions’** event as part of citizen engagement and supported through the coordination network;
- **‘Annual missions innovation fair’** – gathering relevant stakeholders such as ERC, EIC grantees, industry, charities, EIB, among others to meet around mission-specific thematic areas.

⁶³⁸ The European Commission is assessing the implementation plans of the 5 Mission areas and a decision will be made on the basis of assessment criteria set by the HE Regulation.

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These actions should be developed in close coordination with the European Commission. The European Commission will identify targets for the specific missions, after assessment, and will communicate the specific missions to the Missions Core Network. The European Commission should be an active member of the Missions Core Network.

The European Committee of the Regions and the European Economic and Social Committee should be closely associated to these activities as sources of reflection.

Destination: Deployment of NEB lighthouse demonstrators in the context of missions

The New European Bauhaus (NEB) initiative wants to make the European Green Deal a cultural, human-centred, positive and tangible experience. It aims to improve how we live together in the built environment⁶³⁹, by fostering innovative solutions that articulate the three NEB core principles of sustainability, aesthetics and inclusion. Horizon Europe missions aim to solve major environmental and societal challenges using ambitious, creative, inclusive and interdisciplinary solutions, bringing the European Green Deal closer to citizens.

Missions share many objectives with the NEB initiative. Through a mutually supportive relationship, the NEB and the missions will collaborate on key shared challenges. Missions are ambitious and daring, closely involve stakeholders and citizens, and aim to produce public goods on a European scale. There are therefore numerous similarities with the NEB initiative. The goal is to launch five lighthouse demonstrators for the NEB initiative, providing valuable lessons and knowledge for the missions' deployment.

This destination will showcase how a co-design process, with architecture, design and culture at its core, can deliver highly innovative solutions to address environmental and societal challenges at the territorial level.

Proposals for the topic under this Destination should set out a credible pathway to contributing to the Destination's goal, and more specifically to all the following impacts:

- Strengthen connections between the missions and the NEB on key environmental and societal challenges;
- Increased preparedness for mission implementation in a multi-level and multidisciplinary approach;
- Demonstrate the benefit of applying an NEB approach (combining sustainability with aesthetics and inclusion) to territorial transformation.

The following call(s) in this work programme contribute to this mission:

Call	Budgets (EUR million)	Deadline(s)
	2021	
HORIZON-MISS-2021-NEB-01	25.00	25 Jan 2022

⁶³⁹ The 'built environment' encompasses everything people live in and around –materials, products, buildings, public spaces, infrastructures, service networks, and districts and settlements up to villages, towns and cities. The term includes attributes linked to physical and mental health (through accessibility, bikeability and walkability). It also includes the process of working with land, planning and designing its use, managing existing structures, and final stages of demolition and recycling. Source: <https://ec.europa.eu/docsroom/documents/40541/attachments/1/translations/en/renditions/pdf>

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Overall indicative budget	25.00	
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Call - Support the deployment of lighthouse demonstrators for the New European Bauhaus initiative in the context of Horizon Europe missions

HORIZON-MISS-2021-NEB-01

Conditions for the Call

Indicative budget(s)⁶⁴⁰

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁶⁴¹	Number of projects expected to be funded
		2021		
Opening: 28 Sep 2021 Deadline(s): 25 Jan 2022				
HORIZON-MISS-2021-NEB-01-01	CSA	25.00 ⁶⁴²	3.00 to 5.00	5
Overall indicative budget		25.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.

⁶⁴⁰ 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 years 2021 and 2022.

⁶⁴¹ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁶⁴² Of which EUR 4.77 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 7.28 million from the 'Digital, Industry and Space' budget and EUR 3.67 million from the 'Health' budget and EUR 0.85 million from the 'Civil Security for Society' budget and EUR 7.28 million from the 'Climate, Energy and Mobility' budget and EUR 1.16 million from the 'Culture, creativity and inclusive society' budget.

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<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2021-NEB-01-01: Support the deployment of lighthouse demonstrators for the New European Bauhaus initiative in the context of Horizon Europe missions

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 3.00 and 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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 25.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	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).
<i>Award criteria</i>	The criteria are described in General Annex D. The following exceptions apply: The following exceptions apply: <ul style="list-style-type: none"> • The quality criteria will include the following additional aspects: demonstration of broad engagement and consultation of citizens and all relevant stakeholders to define the needs analysis and the understanding of implications of the challenge in the given territory (e.g. neighbourhood, district, ecosystem) in terms of sustainability (in line with the European Green Deal), inclusiveness (including

	<p>accessibility and affordability) and aesthetics (including functionality, comfort, attractiveness, etc.).</p> <ul style="list-style-type: none">• The impact criteria will include the elaboration of a two-year programme for further design and implementation of the whole or part of the complete territorial transformation plan as well as demonstration of the long-term vision and commitment of territorial agents to implement the transformation through partnerships and integrated funding.• To ensure a balanced portfolio covering geographical areas, grants will be awarded to applications not only in the order of ranking but at least also to the projects that are the highest ranked covering different parts of the territory of the European Union and Associated Countries, provided that the applications attain all thresholds.• Given the nature of the action, Option 2 of the model grant agreement will be applicable: <p>Purchases of equipment, infrastructure or other assets specifically for the action (or developed as part of the action tasks) may be declared as full capitalised costs if they fulfil the cost eligibility conditions applicable to their respective cost categories. ‘Capitalised costs’ means:</p> <ul style="list-style-type: none">* costs incurred in the purchase or for the development of the equipment, infrastructure or other assets and* which are recorded under a fixed asset account of the beneficiary in compliance with international accounting standards and the beneficiary’s usual cost accounting practices. <p>If such equipment, infrastructure or other assets are rented or leased, full costs for renting or leasing are eligible, if they do not exceed the depreciation costs of similar equipment, infrastructure or assets and do not include any financing fees.</p>
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Expected Outcome: Through a mutually supportive relationship, Horizon Europe missions and the New European Bauhaus (NEB) initiative will develop connections on a wide range of topics. For example, there are shared objectives in areas such as climate-neutral and smart cities, adaptation of the built environment to the effects of climate change (while respecting existing aesthetic and historical values), including flooding and sea level rise, sustainable use of soils through better spatial planning, urban greening and nature-based solutions, and cancer prevention and quality of life through healthy lifestyles and a healthy living environment.

This action will offer opportunities to engage with communities on an environmentally sustainable, socially fair, and aesthetically appealing transition, using architecture, design and culture as core resources for a sustainable society. These shared qualities between Horizon

Europe missions and the NEB should be capitalised on, leading to increased impact for both initiatives, and providing guidance and insight for the missions' implementation. Horizon Europe missions and the NEB both emphasise the importance of involving citizens in the green transition at the local level, in pursuit of broader societal transformation. Linking the two initiatives can help solidify the concept in the public's collective conscious that the missions embody research and innovation's capacity to positively impact their daily lives.

Proposals are expected to demonstrate all of the outcomes listed below:

- The projects should have a clear expected transformational impact both on the built environment, and on how people live and interact in that environment. The pilots will fully embrace the mission objectives and NEB principles, acting as "lighthouse demonstrators", serving as test-beds for the implementation of Horizon Europe mission objectives and innovative solutions.
- Deliver, by the end of the project, 'tangible' and replicable results, leading to benefits in the long-term.
- The grants leading to the design and deployment of the initial implementation phase are meant to catalyse substantial additional investments (e.g. partnerships of national, regional, local public and private sources, including EU Structural Funds) to ensure the implementation of the full-scale project after the design phase.
- A clear demonstration effect in relation to the operationalisation of the triangle of sustainability, inclusion and aesthetics, serving as reference for the broader implementation of the NEB initiative, as well as for the uptake and support of the Horizon Europe missions by national, regional and local authorities, other stakeholders, and European citizens, thus enabling a rapid scale-up of Horizon Europe missions' activities.

Scope: This action will contribute to the Delivery Phase of the NEB, by deploying mission-oriented pilot projects that will act as 'lighthouse demonstrators' across the territory of the European Union and Associated Countries. They should embrace the key principles of the NEB initiative (sustainability, inclusion and aesthetics), using architecture, design and culture as core resources for a sustainable society, and the mission-oriented approach (impactful, measurable, targeted) in an innovative and exemplary manner. They should address one or more relevant challenges that represent the wide scope of the NEB initiative, such as:

- Environmental and climate adaptation challenges, environmental and climate risks, prevention and resilience
- Economic and territorial changes linked to the green transition
- Social challenges (poverty, segregation, social exclusion, etc.)
- Challenges linked to the use, preservation and reconversion of existing infrastructure and heritage

- Demographic challenges (ageing, migration, depopulation, changes in property market due to tourism, etc.)

Proposals should include:

- The development of an ambitious, mission-oriented, quality co-design process, based on citizens' and stakeholders' participation and multidisciplinary (e.g. arts, architecture, design, heritage, engineering, physical and spatial planning, manufacturing, technology, environmental and social sciences, etc.) and multilevel collaboration (e.g. civil society, public and private actors), also capable of addressing the relevant objectives of the Horizon Europe missions.
- An ambitious and credible executive plan that identifies and analyses the challenges and resources of a given territory (e.g. neighbourhood, district, ecosystem) in terms of sustainability (in line with the European Green Deal), inclusiveness (including accessibility and affordability) and aesthetics (including functionality, comfort, attractiveness, etc.).
- The detailed outlined, through feasibility studies, of highly innovative, cutting-edge solutions, associating meaningful, inclusive social purpose with strong aesthetic values and sustainability, in line with the European Green Deal, to address emblematic environmental and societal challenges at the territorial level.
- Deployment of an initial set of solutions as demonstrators within a two-year timeframe, accompanied by a rigorous impact evaluation methodology, measuring the impact of the adopted methodologies. Involvement and testing of the demonstrators with international experts.
- A detailed roadmap for implementation, with a sustainable financial plan quantifying and identifying substantial additional investment based on involvement and partnerships with different actors (national, regional, local, public and private sources).
- Evidence of developed relationships and partnerships with responsible authorities and/or representatives (on planning, permits, property rights, financing, impact assessments, etc.).
- Exchange and dissemination of co-design methodology at European Union and Associated Countries level.
- Contribution to the outreach, dissemination and communication strategy and plan of the NEB and of Horizon Europe missions.
- The NEB initiative, launched in late 2020, will undergo rapid development in an open community. Potential applicants are invited to join this community under [https://europa.eu/new-european-bauhaus/index_en] to contribute to the discussion on the application of the NEB principles in the 21st, and their role in the twin green and digital transitions, and recovery from the COVID-19 crisis.

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- Projects are expected to participate in European-level networking opportunities in the context of the NEB initiative.

Missions' cross-cutting actions in support of the achievement EU Missions goals

Missions aim to address some of the greatest challenges facing our society. They are bold and inspirational with clear objectives that are time-bound, realistic, measurable and targeted. Rooted in research and innovation, missions aim to tackle societal challenges with systemic solutions, leading to societal transformations and social impact.

To achieve their objectives, missions may necessitate societal engagement that goes beyond dialogue and leads to action. They may call for the involvement of not only citizens, but also academics, entrepreneurs, social partners and public administrators as co-designers, co-developers, and co-implementers.

In addition, they may require changes in societal practices at European scale at an unprecedented speed. To address these specific needs and to promote synergies across the activities and constituencies of the Missions.

Proposals for topics under this destination should set out a credible pathway to contributing Cross cutting actions in support of the achievement EU Missions goals, and more specifically the following impacts:

- enhanced strategic intelligence and capacities including organisation, awareness and communication vertically and horizontally across national, regional and local levels, for full deployment of missions solutions;
- effective mission implementation following shared approaches

The following call(s) in this work programme contribute to this mission:

Call	Budgets (EUR million)	Deadline(s)
	2022	
HORIZON-MISS-2022-SOCIALCAT-01	30.00	21 Sep 2022
HORIZON-MISS-2022-NCP-01	1.50	27 Sep 2022
Overall indicative budget	31.50	

**Call - A European Social Innovation Catalyst Fund to Advance EU Mission Objectives
by Replicating and Scaling-up Existing, Demonstrably Successful Social Innovations**

HORIZON-MISS-2022-SOCIALCAT-01

Conditions for the Call

Indicative budget(s)⁶⁴³

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁶⁴⁴	Number of projects expected to be funded
		2022		
Opening: 12 May 2022 Deadline(s): 21 Sep 2022				
HORIZON-MISS-2022-SOCIALCAT-01-01	CSA	30.00 ⁶⁴⁵	Around 30.00	1
Overall indicative budget		30.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.

⁶⁴³ 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 years 2021 and 2022.

⁶⁴⁴ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁶⁴⁵ Of which EUR 7.53 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 3.42 million from the 'Digital, Industry and Space' budget and EUR 5.44 million from the 'Health' budget and EUR 0.51 million from the 'Civil Security for Society' budget and EUR 12.72 million from the 'Climate, Energy and Mobility' budget and EUR 0.38 million from the 'Culture, creativity and inclusive society' budget.

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<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-SOCIALCAT-01-01: A European Social Innovation Catalyst Fund to Advance EU Mission Objectives by Replicating and Scaling-up Existing, Demonstrably Successful Social Innovations

Specific conditions	
<i>Expected EU contribution per project</i>	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.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 30.00 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: Legal entities established in non-associated third countries may exceptionally participate in this Coordination and support action. The following additional eligibility criteria apply: In addition, consortia must include at least three foundations ⁶⁴⁶ with proven experience in social innovation ventures.
<i>Legal and financial set-up of the Grant Agreements</i>	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 by the EU to each third party is EUR 1 million in light of the estimated social innovation replication

⁶⁴⁶ “For present purposes, foundations are [...] bodies with their own source of funds which they spend according to their own judgement on projects or activities of public benefit.

	costs. The funding rate of this CSA is 25% of eligible costs as the European Social Innovation Catalyst Fund aims at increasing the impact of EU funding and increasing the support of public and private actors to social innovation by attracting additional public and private contributions.
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Expected Outcome: The Project is expected to contribute to the following outcomes:

- Leveraging social innovation to achieve the objectives of the five EU Missions, namely, [“Adaptation to Climate Change: Support at least 150 European regions and communities to become climate resilient by 2030”](#), [“Restore our Ocean and Waters by 2030”](#), [“Cancer: Improving the lives of more than 3 million people by 2030 through prevention, cure and for those affected by cancer including their families, to live longer and better”](#), [“100 Climate-Neutral and Smart Cities by 2030”](#), and [“A Soil Deal for Europe: 100 living labs and lighthouses to lead the transition towards healthy soils by 2030”](#).
- Empowering citizens, local communities, and social innovators and entrepreneurs by offering them the possibility to become champions of the transition
- Securing significant impact with a high probability of success by replicating existing, demonstrably successful social innovations.
- Capitalizing on the underutilized stock of existing, demonstrably successful social innovations and helping local or regional projects achieve impact at continental scale.
- Increasing the impact of EU funding by attracting additional public and private contributions by setting up a European Social Innovation Catalyst Fund for the replication of existing, demonstrably successful social innovations.
- Combining quantitative and qualitative support to the Missions and to social innovation, respectively through funding and mentoring.

Scope: This coordination and support action serves the Missions, namely, [“Adaptation to Climate Change: Support at least 150 European regions and communities to become climate resilient by 2030”](#), [“Restore our Ocean and Waters by 2030”](#), [“Cancer: Improving the lives of more than 3 million people by 2030 through prevention, cure and for those affected by cancer including their families, to live longer and better”](#), [“100 Climate-Neutral and Smart Cities by 2030”](#), and [“A Soil Deal for Europe: 100 living labs and lighthouses to lead the transition towards healthy soils by 2030”](#), by replicating and enhancing existing, demonstrably successful product, services, business model, organizational, governance, and other social innovations capable of addressing objectives appropriate for the Missions at European scale.

Social innovation concerns the development of new products, methods, and services for and with society involving not only citizens, but also public authorities, business and industry, and academia—i.e., the four constituencies of the “Quadruple Helix”—in their design, development, and execution. Social innovation engages and empowers citizens, enhances the

resilience of communities, increases the relevance, acceptance and uptake of innovation, and helps foster lasting changes in social practices, therefore acting as a system changer. It thus helps answering societal and environmental challenges, connecting society with innovation.

EU Framework Programmes for Research and Innovation provide many examples of existing, demonstrably successful social innovations in very diverse thematic areas. Quantitative and/or qualitative indicators demonstrating success may include, e.g., reductions in energy costs expressed in EUR, Joules, or kWh, reductions in greenhouse gas emissions or increases in greenhouse gas capture in t(CO₂eq), adoption of climate-related emergency plans or climate-resilient cropping systems, or number of jobs secured by a reskilling programme in areas traditionally depending on fossil fuel exploitation for employment; increases in fish population/school sizes, reductions in counts of microplastic particulates in water samples, area of coral reef restored in square kilometers, number of clean-up campaigns and cleaned-up areas in square kilometers; number of fatal cancers prevented, additional years of quality life or reduction in disability-adjusted life year (DALYs) in years; number of users switching to carbon-neutral modes of transportation or number of climate-neutral buildings; surfaces of rehabilitated soils in hectares, or increases in counts of species/individual of a given fungus, plant, animal, etc. species. Yet, the development of synergies with other public or private funding schemes may lead to the selection of social innovations elaborated independently.

The call targets

- i. for the consortium that will manage the project, a diverse assemblages of actors of social innovation, i.e., public authorities, academia, business, citizens and citizens' organizations;
- ii. for the creation of the fund, national research and innovation funding agencies, philanthropists, and other public or private investors; and
- iii. for the replication of social innovations, as beneficiaries of third party financing through open calls, social innovators, social enterprises, companies working for reaching social impact and/or with a specific consideration of social impact, etc.

In relation with item (i), applicants are therefore encouraged to constitute a consortium that includes representatives of the public sector, the private sector, academia, and civil society. E.g., respectively, national, regional, and local government administrations and agencies; foundations, venture philanthropists, impact investors, industry, entrepreneurs, local businesses, and social enterprises; universities and research and technology organisation; social service providers, social innovators, Living Labs, Fab Labs, [*Third Places/Tiers-Lieux*](#), and participants in the Makers Movement. Applicants are also encouraged to build on relevant ongoing activities undertaken by the Missions such as Missions Platforms.

In order to help Missions achieve their objectives, the consortium will undertake the following activities, i.e.,

1. set up a European Social Innovation Catalyst Fund ("the Fund") to ensure adequate financial support for replicating existing, demonstrably successful social innovations.

The Fund will be funded jointly by the European Commission and by funding secured by the members of the consortium. The consortium is invited to combine Horizon Europe and other public and private funding including philanthropic sources to form a dedicated facility to support successful social innovations. Blending Horizon Europe and other public and private resources would translate into a meaningful innovation in terms of EU co-investment schemes for social and environmental good, building on the [Horizon 2020 European Social Catalyst Fund pilot](#)⁶⁴⁷. The EU will contribute a maximum of one quarter of the Fund. Accounting for financial investment calendars, the creation of the Fund should take no more than six months to a year;

2. put forward open calls for proposals for the replication of existing social innovations demonstrated as successful based on quantitative and qualitative data that combine (i) a high potential to help each of the Missions achieve a selected number of their key objectives and (ii) a high potential for replication as documented by a replication plan. Notably, some of the existing, demonstrably successful social innovation projects could support more than one Mission by helping them achieve objectives that they share. The Fund will support third parties not only in terms of financing, but also of advisory, networking, and any other means objectively increasing the chances of success of the replication projects. The open call must be published widely, including on the Horizon Europe Participant Portal and through National Contact Points. Proposals should clearly indicate which mission(s) their social innovation will support;
3. select the most promising and relevant social innovations on the basis of (i) their relevance to the Missions, (ii) the documentation of their success, and (iii) the credibility of their replication plan, including their ability to start delivering results within two to three years after the start of their implementation. Cross-Mission social innovation projects that serve several Missions at once are encouraged. Specifically, the proposal should define the process for selecting the plans for replication for which the consortium will grant financial support. This should include the process of selecting, allocating and reporting on the use of independent experts and ensuring no conflicts of interest. The description of the selection process should also clearly detail the criteria for awarding financial support and simple and comprehensive criteria for calculating the exact amount of such support. The consortium should refer to the [Mission Implementation Plans](#) when developing selection criteria. The selection process must also ensure that one or more replication plans are implemented per Mission and that the portfolio of selected projects covers all the Missions in a balanced, comparable, and equitable manner. The selected replication plans should make evident the potential to replicate different existing, demonstrably successful social innovations at European, national, regional and/or local scale in at least three different Member States and/or Associated Countries. The selection process should take no more than six months to a year;

⁶⁴⁷

See also the Cordis Fact Sheet: <https://cordis.europa.eu/project/id/870757>.

4. support through funding and mentoring the execution of the replication plans that will have been selected. The EU contribution to funding the execution of each replication plan will account for a maximum of one quarter of its cost;
5. oversee—rather than manage—and monitor the roll out of the replication plans by their authors. The roll out of the execution of the plans should take no more than two to three years; and
6. measure and communicate on the impact achieved via online platforms.

The consortium may wish to run the creation of the Fund (activity 1), and the publication of a calls for proposals and the selection of social innovations (activities 2 and 3) partially or totally in parallel.

The proposal should include detailed management and financial plans. The consortium should, in particular, specify how it will monitor and report call results, assess the quality of the outcomes, allocate funding to replication plans, support the roll out of the replication plans through funding and mentoring, and evaluate impact.

For information, it is estimated that the roll out of one social innovation at national scale takes indicatively three years and requires around EUR 1 million per year. The figures are neither minima, nor maxima—only estimates. Indeed, the actual total budget necessary will depend on the nature and specifics of the social innovation, and the time and scale of deployment.

The proposal should establish the capacity of the consortium to manage portfolios of projects in different countries.

The EU estimates that a maximum 6% of the EU contribution is enough to operate the Fund. Nonetheless, this does not preclude the consortium using a different percentage of the EU contribution for its operation when duly justified. As the EU will contribute 25% of the total budget and expects the consortium to spend around 6% of the EU contribution on management costs, the EU expects around 98.5% ($100\% - (25\% \times 6\%)$) of the fund to support third parties.

The consortium will cooperate with the relevant Commission services to ensure that the Project contributes to the objectives of the Missions and, in particular, when it develops selection criteria to select the most promising and relevant social innovations. The consortium should constitute portfolios of projects covering all Missions in an equal manner. The consortium will have to document that it has done so.

Actions funded by the Fund should envisage, as appropriate, cooperation with other ongoing and future social innovation projects funded under Horizon 2020 or Horizon Europe projects for, inter-alia, cross-project co-operation, consultations and knowledge exchange, joint activities on crosscutting issues as well as participating in joint meetings and communication events, especially where they relate to Missions. Applicants should plan the necessary budget to cover those activities without the need to define concrete common actions at this stage.

Call - National Contact Points Network

HORIZON-MISS-2022-NCP-01

Conditions for the Call

Indicative budget(s)⁶⁴⁸

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁶⁴⁹	Number of projects expected to be funded
		2022		
Opening: 12 May 2022 Deadline(s): 27 Sep 2022				
HORIZON-MISS-2022-NCP-01-01	CSA	1.50 ⁶⁵⁰	Around 1.50	1
Overall indicative budget		1.50		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.

⁶⁴⁸ 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 years 2021 and 2022.

⁶⁴⁹ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁶⁵⁰ Of which EUR 0.37 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.18 million from the 'Digital, Industry and Space' budget and EUR 0.27 million from the 'Health' budget and EUR 0.03 million from the 'Civil Security for Society' budget and EUR 0.63 million from the 'Climate, Energy and Mobility' budget and EUR 0.02 million from the 'Culture, creativity and inclusive society' budget.

*Horizon Europe - Work Programme 2021-2022
Missions*

<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-MISS-2022-NCP-01-01: Creating a transnational network of National Contact Points (NCPs) for EU Missions

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 1.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 1.50 million.
<i>Type of Action</i>	Coordination and Support Actions
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: Applicants must be Horizon Europe national support structures (e.g. NCP) responsible for EU Missions and officially nominated to the Commission, from a Member State or Associated Country.

Expected Outcome: This topic aims at supporting activities that are enabling or contributing to all the expected impacts of all destinations of the Missions Work Programme.

To that end, proposals under this topic should aim for delivering results that are directed towards and contributing to all of the following expected outcomes:

- An improved and professionalised NCP service across Europe, thereby helping simplify access to EU Missions calls, lowering the entry barriers for newcomers, and raising the average quality of proposals submitted.
- A more consistent level of NCP support services across Europe.
- Mobilising expertise from across all of the clusters, as well as from the other pillars of Horizon (a whole of programme approach) and into other policy areas thus reflecting the ‘beyond R&I’ nature of the missions, as well as outreach activities to the most relevant

national and regional networks that support dissemination of other major EU funding programmes and support EU-wide engagement of major relevant EU policy actions.

- Triggering societal transformations by encouraging applicants to enhance citizen engagement and actions widely relevant to society.

Scope:

- Proposals should aim to facilitate transnational cooperation between National Contact Points (NCPs) for EU Missions with a view to identifying and sharing good practices and raising the general standard of support to programme applicants.
- The network will organise NCP Information Days, NCP trainings, brokerage events for potential participants and provide suitable tools and instruments to support NCPs, as well as to Missions' target group (government, researchers and innovators, education institutions, small and large businesses, investors and civil society). Other matchmaking instruments may be used as appropriate. Where relevant, synergies should be sought with relevant networks targeting the Missions' target group. Activities supporting the societal dimension of the Missions should be put forward.
- To achieve its expected outcomes and objectives the NCP network should establish close cooperation and exploit synergies with other relevant thematic and horizontal HE NCP support structures. Close coordination and/or integration with the current Horizon Europe NCP Portal is expected to maximize synergies and efficiency in this respect.
- The proposed structure and activities of the EU Missions NCP network should interact with the mission hubs established within Member States and Associated Countries, which will build national structures (at national and regional level) between ministries and agencies for example, in ways that foster information exchanges related to the missions.
- Special attention should be given to enhancing the competence of NCPs, including helping less experienced NCPs rapidly acquire the know-how built up in other countries.
- In this sense, contributions from this network to the Virtual Campus hosted under the Horizon Europe NCP Portal is more that welcomed to achieve such objective.
- The consortium should have a good representation of experienced and less experienced NCPs.
- Submission of a single proposal is encouraged and it should cover the whole duration of Horizon Europe.

Other Actions not subject to calls for proposals

Indirectly managed actions

1. EIB Innovation Finance Advisory to support the implementation of EU Missions

Expected Outcomes:

The action is expected to contribute to all of the following outcomes, tailored to the specific needs and activities of each of the missions that enter the full implementation phase:

- Increased investor engagement;
- Development of new/better financing ecosystems;

Expected Impact:

Proposals should set out a credible pathway to contributing to several of the following impacts:

- Financial viability of missions: Long term financial viability of a mission through the European Multiannual Financial Framework and the mobilising of other sources of funding which will together enable the missions to achieve their ambitious objectives and societal impact. This will be enabled through effective use of appropriate financing tools, instruments and models.
- Sound financing of large projects: Sound financing of large, complex demonstration or flagship projects, which are expected to play an important part in achieving the missions' objectives.
- Missions implemented through a portfolio of different activities planned over time and building on each other.

Scope:

This action supports initial Innovation Finance Advisory services for the first year of the implementation of the missions under an advisory agreement with the EIB Group for the implementation of the InvestEU Advisory Hub, or any other contractual/legal agreement that is deemed appropriate by the implementing partners. The scope and budget of the activity will be aligned to reflect the Commission's decision making with regard to the full implementation phase of missions and the cooperation between the European Commission and the EIB⁶⁵¹.

EU missions, rooted in research and innovation, aim to deliver public goods and societal impact. In order to reach their ambitious objectives, significant financing needs are expected

⁶⁵¹ The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for years 2021 and 2022.

along the entire value chain, including basic research, high risk innovation, demonstration, deployment and market penetration.

Part of this financing will be come from funding instruments under the European Multiannual Financial Framework. However, these will not be sufficient and other sources of funding will need to be mobilised.

Taking into account other relevant actions in particular those being supported by Horizon Europe, the Innovation Finance Advisory services will support the identification of investment sources and outreach and engagement with potential investors or other types of funding models and mechanisms including through social innovation. This will contribute to the development of a pool of public and private actors and a variety of approaches that contribute to achieving a mission's objectives. Special attention will be given to identify investment sources in those Member States or Associated Countries that are lagging behind in terms of such investments. Relevant existing and new financial advisory activities will be taken into consideration.

The foreseen advisory services will contribute to the understanding and use of appropriate financing tools and models and instruments of actions, including the development of blended instruments under InvestEU, ensuring effective financing to reach mission objectives. For each of the missions (and their implementation teams) that enter the full implementation phase, based on their specific needs and activities, the scope of the advice and assistance will be:

- identification of investment sources and outreach and engagement with potential investors or other types of funding models and mechanisms including through social innovation to contribute to the development of a pool of public and private actors and a variety of approaches that contribute to achieving a mission's objectives;
- mobilising of the EU Multiannual Financial Framework and other sources of funding including Venture Capital, Corporate Venture Capital, National Promotional Banks, Private Equity, commercial banks and strategic investors;
- Identification and dissemination of knowledge on the use and development of financial / blended instruments, investor interest to catalyse private and public capital and investment gaps;
- Making recommendations on financing models which specifically target the delivery of public goods;
- Providing upstream financial structuring advice for mission demonstration/pilot projects and other funding intensive mission activities;
- Acting as financial advisory to individual (complex) flagship projects and other investment of mission activities.

The use of an indirectly managed action on the basis that the beneficiary, the EIB Innovation Finance Advisory, is uniquely placed to deliver this wide range of financing advisory services, which will be of high added value to deliver the missions' objectives, has proven capacity to make the required expertise available, building on the track record developed under the joint EC-EIB InnovFin Advisory programme.

Legal entities:

EIB Innovation Finance Advisory, 98-100, boulevard Konrad Adenauer L-2950 Luxembourg

Form of Funding: Indirectly managed actions

Type of Action: Indirectly managed action

Indicative timetable: 2nd quarter of 2021

Indicative budget: EUR 2.00 million from the 2021 budget⁶⁵²

Procurement actions

1. Informing citizens and stakeholders about EU Missions and engaging them in the implementation of EU Missions

Description:

The success of missions depends to a great extent on the engagement of an informed community of stakeholders and citizens. Therefore, the objective of this action - a continuation of the current communication and citizens' engagement actions for missions - is to inform and engage citizens and stakeholders to be able to effectively launch and start implementing the missions. Actions will include:

- a Europe-wide, multilingual communication campaign to raise the awareness of missions among relevant audiences;
- a series of interactive offline and online events in the Member States, EEA and Associated countries;
- setting up of a digital platform to ensure transparency and to facilitate stakeholder and citizen engagement, including building of EU missions community through a multilingual approach.

Form of Funding: Procurement

⁶⁵² Of which EUR 0.38 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.58 million from the 'Digital, Industry and Space' budget, EUR 0.29 million from the 'Health' budget, EUR 0.58 million from the 'Climate, Energy and Mobility' budget, EUR 0.07 million from the 'Civil Security for Society' budget, EUR 0.09 million from the 'Culture, creativity and inclusive society' budget.

Type of Action: Public procurement

Indicative timetable: 2nd Quarter 2021 – 2nd Quarter 2022

Indicative budget: EUR 2.00 million from the 2021 budget⁶⁵³

Other budget implementation instruments

1. External expertise for advice on the next phases of the design and implementation of missions for Horizon Europe ⁶⁵⁴

Objectives and scope:

Subject to the decision to launch missions to the full implementation phase, and in line with the Specific Programme implementing Horizon Europe – the Framework Programme for Research and Innovation, the objective is to create five new expert groups (mission boards), with up to 15 experts in each, to provide advice which will support the work of the European Commission in the implementation phase of specific missions for Horizon Europe.

These specific missions are based on five mission areas:

- Cancer
- Adaptation to climate change
- Ocean, seas and waters
- Climate-neutral and smart cities
- Soil health and food

Missions are currently in the preparatory phase and subject to confirmation will be launched in full by the end of 2021. The scope of work for the expert groups will be centred on the whole of the Pillar 'Global Challenges and Competitiveness of European Industry' under Horizon Europe.

Type of advice:

The experts to be included in the expert groups will be required to provide advice based on deep knowledge on fields corresponding to the implementation of mission oriented programmes corresponding to those of the missions that are proposed above, including knowledge in business, economic social and environmental programmes, research and innovation and expertise in cross-sector/cross-border collaboration, governance, citizen

⁶⁵³ Of which EUR 0.38 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.58 million from the 'Digital, Industry and Space' budget, EUR 0.29 million from the 'Health' budget, EUR 0.07 million from the 'Civil Security for Society' budget, EUR 0.58 million from the 'Climate, Energy and Mobility' budget, EUR 0.09 million from the 'Culture, creativity and inclusive society' budget.

⁶⁵⁴ This action was not implemented in year 2021 and it will be implemented instead in year 2022 with the action HORIZON-MISS-2022-EC.

engagement etc., as well as country and regional interests. It will include advice on achieving synergies between Horizon Europe missions and other EU programmes and policy areas, and with similar style missions at the national level, taking into account the international research and innovation field.

Description of the mandate/tasks

Each informal expert group will have the same set of advisory tasks, relevant to its mission. It will advise, without having decision-making powers, the Commission upon the following:

- a. Input to the preparation of content of Work Programmes and their revision as needed for achieving the mission objectives, with input from stakeholders and, where relevant, the general public;
- b. characteristics of project portfolios for missions;
- c. adjustment actions, or termination if appropriate, based on implementation assessments according to the defined objectives of the mission;
- d. strategic advice on the profile of independent expert evaluators following the provisions of the Framework Programme, briefing of expert evaluators and evaluation criteria and their weighting;
- e. framework conditions which help achieve the objectives of the mission;
- f. communication, including on the performance and the achievements of the mission;
- g. policy coordination between relevant actors at different levels, in particular regarding synergies with other Union policies;
- h. key performance indicators.

The advisory role of the mission boards will be very closely managed in support of the dialogue with the Member States and countries associated to Horizon Europe, and to respect conflict of interest and confidentiality notably when pertaining to the Horizon Europe work programme and on evaluation aspects.

The mission boards will provide high-level advice to the Commission of such a nature that without their input the implementation of missions would not achieve the desired large scale and breadth of impact. In light of this, and as highly qualified, specialised, independent experts who will be selected following a public call for applications, on the basis of objective criteria, it is justified that the members of the mission boards will be remunerated for the services they offer pursuant Article 21 of the horizontal rules.

A special allowance of EUR 450/day for each full working day spent assisting the Commission in terms of Article 21 of Decision C (2016)3301 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 timetable: 3rd Quarter of 2021 to 4th Quarter of 2022 (to be extended subject to the confirmation of the missions in the implementation phase).

Indicative budget: EUR 1.50 million from the 2021 budget⁶⁵⁵

2. External expertise for advice on the next phases of the design and implementation of missions for Horizon Europe

Objectives and scope:

In line with the Specific Programme implementing Horizon Europe – the Framework Programme for Research and Innovation, the objective is to create five new expert groups (mission boards), with up to 15 experts in each, to provide advice which will support the work of the European Commission in the implementation phase of specific missions for Horizon Europe.

These specific missions are:

- Adaptation to Climate Change: support at least 150 European regions and communities to become climate resilient by 2030;
- Cancer: working with Europe's Beating Cancer Plan to improve the lives of more than 3 million people by 2030 through prevention, cure and solutions to live longer and better;
- Restore our Ocean and Waters by 2030;
- 100 Climate-Neutral and Smart Cities by 2030;
- A Soil Deal for Europe: 100 living labs and lighthouses to lead the transition towards healthy soils by 2030.

The scope of work for the expert groups will be centred on the whole of the Pillar 'Global Challenges and Competitiveness of European Industry' under Horizon Europe.

Type of advice:

The experts to be included in the expert groups will be required to provide advice based on deep knowledge on fields corresponding to the implementation of mission oriented programmes corresponding to those of the missions above, including knowledge in business, economic social and environmental programmes, research and innovation and expertise in cross-sector/cross-border collaboration, governance, citizen engagement etc., as well as country and regional interests. It will include advice on achieving synergies between Horizon

⁶⁵⁵ Of which EUR 0.29 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.44 million from the 'Digital, Industry and Space' budget, EUR 0.22 million from the 'Health' budget, EUR 0.44 million from the 'Climate, Energy and Mobility' budget, EUR 0.05 million from the 'Civil Security for Society' budget, EUR 0.07 million from the 'Culture, creativity and inclusive society' budget.

Europe missions and other EU programmes and policy areas, and with similar style missions at the national level, taking into account the international research and innovation field.

Description of the mandate/tasks

Each informal expert group will have the same set of advisory tasks, relevant to its mission. It will advise, without having decision-making powers, the Commission upon the following:

- a. Input to the preparation of content of Work Programmes and their revision as needed for achieving the mission objectives, with input from stakeholders and, where relevant, the general public;
- b. characteristics of project portfolios for missions;
- c. adjustment actions, or termination if appropriate, based on implementation assessments according to the defined objectives of the mission;
- d. strategic advice on the profile of independent expert evaluators following the provisions of the Framework Programme, briefing of expert evaluators and evaluation criteria and their weighting;
- e. framework conditions which help achieve the objectives of the mission;
- f. communication, including on the performance and the achievements of the mission;
- g. policy coordination between relevant actors at different levels, in particular regarding synergies with other Union policies;
- h. key performance indicators.

The advisory role of the mission boards will be very closely managed in support of the dialogue with the Member States and countries associated to Horizon Europe, and to respect conflict of interest and confidentiality notably when pertaining to the Horizon Europe work programme and on evaluation aspects.

The mission boards will provide high-level advice to the Commission of such a nature that without their input the implementation of missions would not achieve the desired large scale and breadth of impact. In light of this, and as highly qualified, specialised, independent experts who will be selected following a public call for applications, on the basis of objective criteria, it is justified that the members of the mission boards will be remunerated for the services they offer pursuant Article 21 of the horizontal rules.

A special allowance of EUR 450/day for each full working day spent assisting the Commission in terms of Article 21 of Decision C (2016)3301 will be paid to the mission board experts and their chairs 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 timetable: 1st Quarter 2022 – 2nd Quarter 2022

Indicative budget: EUR 1.50 million from the 2022 budget⁶⁵⁶

3. Experts assisting the monitoring of actions

This action will support the use of appointed independent experts for the monitoring of running actions (grant agreement, grant decision, public procurement actions, financial instruments) funded under Horizon Europe and previous Framework Programmes for Research and Innovation, and where appropriate include ethics checks.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative timetable: 2nd-3rd quarter 2022

Indicative budget: EUR 0.40 million from the 2022 budget⁶⁵⁷

4. Expert group for advice on the monitoring of EU Missions

The experts will support the development of a monitoring framework for EU Missions in order to provide evidence base for the strategic discussions and input to the review foreseen in 2023 by Article 11 of the Horizon Europe regulation. The group will focus, for example, on supporting the identification of gaps and emerging opportunities in the missions' landscape and supporting the preparedness of Member States and Associated Countries' participation in the process. Their work will also contribute to the implementation of the future revised policy approach for EU Missions. The activities carried out by the group will be essential to the development and monitoring of the Union policy on Research, technological development and demonstration. The specialist skills required and the demanding nature of the work necessitates highly qualified experts, which will be selected on the basis of objective criteria following a call for applications published in accordance with Article 10 of Decision C(2016)3301. Therefore, a special allowance of EUR 450/day for each full working day spent assisting the Commission will be paid to the experts appointed in their personal capacity who act independently and in the public interest in terms of Article 21 of Decision C(2016)3301. This amount is considered to be proportionate to the specific tasks to be assigned to the experts, including the number of meetings to be attended and possible preparatory work.

⁶⁵⁶ Of which EUR 0.29 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.44 million from the 'Digital, Industry and Space' budget, EUR 0.22 million from the 'Health' budget, EUR 0.44 million from the 'Climate, Energy and Mobility' budget, EUR 0.05 million from the 'Civil Security for Society' budget, EUR 0.07 million from the 'Culture, creativity and inclusive society' budget.

⁶⁵⁷ Of which EUR 0.10 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.05 million from the 'Digital, Industry and Space' budget, EUR 0.07 million from the 'Health' budget, EUR 0.01 million from the 'Civil Security for Society' budget, EUR 0.17 million from the 'Climate, Energy and Mobility' budget, EUR 0.01 million from the 'Culture, creativity and inclusive society' budget.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative timetable: 3rd quarter 2022- 4th quarter 2022

Indicative budget: EUR 0.30 million from the 2022 budget⁶⁵⁸

Scientific and technical services by the Joint Research Centre

1. Scientific and technical services to the Mission on ‘Climate-neutral and smart cities’⁶⁵⁹

The purpose of this action is to provide scientific and technical support towards achieving climate-neutrality at urban level, in line with the European Green Deal⁶⁶⁰ objectives and the proposed mission on climate-neutral and smart cities. The activities will provide extended data, methodologies and analysis for accelerating the transition towards climate-neutrality throughout European cities.

This activity will focus on mapping and supporting European cities’ needs and ambitions to achieve climate-neutrality, through a mission-oriented approach. It will increase cities’ awareness and preparedness, aiming at widening participation and tackling entry-level barriers. It will also increase knowledge on European cities wide challenges and support the definition of incentive schemes for a wide range of cities. This activity will capitalise on existing proved R&I solutions and packages of measures assessed against existing or new ‘climate-neutrality’ indicators, and will ensure conditions for their transferability between different urban contexts. It should therefore propose a set of indicators to assess impact of solutions, especially to prevent rebound effects and support positive spill-over and it will identify pathways for achieving climate neutrality. Such criteria should also include reflections on climate adaptation spill-over positive and negative effects, contributing to the upcoming New EU Strategy on Adaptation to Climate Change.⁶⁶¹

This activity will be implemented in close coordination with the Commission’s mission owners group.

The activity will be structured around three main outputs:

⁶⁵⁸ Of which EUR 0.07 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.04 million from the 'Digital, Industry and Space' budget, EUR 0.05 million from the 'Health' budget, EUR 0.01 million from the 'Civil Security for Society' budget, EUR 0.13 million from the 'Climate, Energy and Mobility' budget, EUR 0.00 million from the 'Culture, creativity and inclusive society' budget.

⁶⁵⁹ This activity directly aimed at supporting the development and implementation of evidence base for R&I policies and supporting various groups of stakeholders is excluded from the delegation to Executive Agencies and will be implemented by the Commission services.

⁶⁶⁰ COM(2019) 640 final: The European Green Deal_ <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019DC0640&from=EN>

⁶⁶¹ <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12381-EU-Strategy-on->

- Development of a ‘Self-assessment toolkit for cities’ climate-neutrality pathway’;
- Mapping of European cities’ preparedness level and ambition;
- Mapping of proved R&I solutions and conditions enabling their transferability.

The listed activities should ensure the uptake and capitalisation of the existing European urban initiatives and policies, while also considering the necessary interaction with the one-stop-shop to be established under the Horizon 2020 topic LC-GD-1-2-2020 on ‘Towards Climate-Neutral and Socially Innovative Cities’⁶⁶². The action should last indicatively one year, starting with the mapping of European cities preparedness level and ambition as an intermediate milestone.

Form of Funding: Direct action grants

Type of Action: Provision of technical/scientific services by the Joint Research Centre

Indicative timetable: 2nd Quarter of 2021

Indicative budget: EUR 1.00 million from the 2021 budget⁶⁶³

Grant to identified beneficiaries

1. OECD Benchmarking Study on Missions Implementation ⁶⁶⁴

Expected outcomes:

The action would be expected to provide:

- Principles and measures of performance built into design of missions’ governance, notably between national and regional and local actions;
- Adopted process and procedure for portfolio implementation, including selection criteria;
- Diffusion and extension of pathways for inter-connecting missions at national, regional and local level.

Expected impact:

- European eco-system for sustained mission performance.

Scope:

OECD to provide a benchmarking of practices in relevant countries.

⁶⁶² <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/lc-gd-1-2-2020>

⁶⁶³ Of which EUR 1.00 million from the 'Climate, Energy and Mobility' budget.

⁶⁶⁴ This activity directly aimed at supporting the development and implementation of evidence base for R&I policies and supporting various groups of stakeholders is excluded from the delegation to Executive Agencies and will be implemented by the Commission services.

Horizon Europe - Work Programme 2021-2022
Missions

This grant will be awarded without a call for proposals according to Article 195 (e) of the Financial Regulation and Article 20 of the Horizon Europe Framework Programme and Rules for Participation to the legal entity identified below as the OECD has unique access to countries where missions have been developed and expertise in the study of mission oriented innovation policies, and the proposed action would build on the recently completed study.

- The governance of the implementation of missions (allowing in practice to manage/steer a portfolio of activities/instruments);
- The processes related to the implementation of a portfolio approach (what selection criteria, what mode of portfolio management);
- The connections/interlinkages between EU missions and EU Member States, EEA and Associated countries related activities (e.g. joint governance, international cooperation etc.).

Legal entities:

Organisation for Economic Cooperation and Development, 2 Rue André Pascal, 75016 Paris, France

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: 3rd Quarter 2021 – 3rd Quarter 2022

Indicative budget: EUR 0.15 million from the 2021 budget⁶⁶⁵

⁶⁶⁵ Of which EUR 0.03 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget, EUR 0.04 million from the 'Digital, Industry and Space' budget, EUR 0.02 million from the 'Health' budget, EUR 0.04 million from the 'Climate, Energy and Mobility' budget, EUR 0.01 million from the 'Civil Security for Society' budget, EUR 0.01 million from the 'Culture, creativity and inclusive society' budget.

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Budget⁶⁶⁶

	Budget line(s)	2021 Budget (EUR million)	2022 Budget (EUR million)
Calls			
HORIZON-MISS-2021-CLIMA-01		5.00	
	<i>from 01.020240</i>	1.00	
	<i>from 01.020250</i>	2.50	
	<i>from 01.020260</i>	1.50	
HORIZON-MISS-2021-CLIMA-02		110.00	
	<i>from 01.020220</i>	1.33	
	<i>from 01.020230</i>	2.60	
	<i>from 01.020240</i>	10.78	
	<i>from 01.020250</i>	63.59	
	<i>from 01.020260</i>	31.70	
HORIZON-MISS-2022-CLIMA-01			115.32
	<i>from 01.020220</i>		2.40
	<i>from 01.020230</i>		2.30
	<i>from</i>		14.62

⁶⁶⁶

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 years 2021 and 2022.

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	<i>01.020240</i>		
	<i>from 01.020250</i>		68.64
	<i>from 01.020260</i>		27.36
HORIZON-MISS-2021-UNCAN-01		3.00	
	<i>from 01.020210</i>	3.00	
HORIZON-MISS-2021-CANCER-02		125.65	
	<i>from 01.020210</i>	92.35	
	<i>from 01.020220</i>	1.48	
	<i>from 01.020240</i>	31.81	
HORIZON-MISS-2022-CANCER-01			126.00
	<i>from 01.020210</i>		100.44
	<i>from 01.020220</i>		2.56
	<i>from 01.020240</i>		23.00
HORIZON-MISS-2021-OCEAN-01		5.00	
	<i>from 01.020250</i>	2.50	
	<i>from 01.020260</i>	2.50	
HORIZON-MISS-2021-OCEAN-02		57.00	
	<i>from 01.020220</i>	0.74	
	<i>from 01.020230</i>	1.44	

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	<i>from</i> 01.020240	5.98	
	<i>from</i> 01.020250	35.27	
	<i>from</i> 01.020260	13.57	
HORIZON-MISS-2021-OCEAN-03		19.00	
	<i>from</i> 01.020220	0.25	
	<i>from</i> 01.020230	0.48	
	<i>from</i> 01.020240	1.99	
	<i>from</i> 01.020250	11.76	
	<i>from</i> 01.020260	4.52	
HORIZON-MISS-2021-OCEAN-04		19.00	
	<i>from</i> 01.020220	0.25	
	<i>from</i> 01.020230	0.48	
	<i>from</i> 01.020240	1.99	
	<i>from</i> 01.020250	11.76	
	<i>from</i> 01.020260	4.52	
HORIZON-MISS-2021-OCEAN-05		9.00	
	<i>from</i> 01.020220	0.12	
	<i>from</i> 01.020230	0.23	

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	<i>from</i> 01.020240	0.94	
	<i>from</i> 01.020250	5.57	
	<i>from</i> 01.020260	2.14	
HORIZON-MISS-2022-OCEAN-01			106.00
	<i>from</i> 01.020220		2.36
	<i>from</i> 01.020230		2.26
	<i>from</i> 01.020240		14.38
	<i>from</i> 01.020250		67.54
	<i>from</i> 01.020260		19.46
HORIZON-MISS-2021-CIT-01		4.00	
	<i>from</i> 01.020250	4.00	
HORIZON-MISS-2021-CIT-02		117.00	
	<i>from</i> 01.020220	1.46	
	<i>from</i> 01.020230	2.83	
	<i>from</i> 01.020240	11.75	
	<i>from</i> 01.020250	69.35	
	<i>from</i> 01.020260	31.61	
HORIZON-MISS-2022-CIT-01			42.00

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	<i>from</i> 01.020220		0.86
	<i>from</i> 01.020230		0.84
	<i>from</i> 01.020240		5.72
	<i>from</i> 01.020250		25.32
	<i>from</i> 01.020260		9.25
HORIZON-MISS-2021-SOIL-01		5.00	
	<i>from</i> 01.020260	5.00	
HORIZON-MISS-2021-SOIL-02		62.00	
	<i>from</i> 01.020220	1.37	
	<i>from</i> 01.020230	2.67	
	<i>from</i> 01.020240	11.10	
	<i>from</i> 01.020260	46.86	
HORIZON-MISS-2022-SOIL-01			95.00
	<i>from</i> 01.020220		2.63
	<i>from</i> 01.020230		2.51
	<i>from</i> 01.020240		16.00
	<i>from</i> 01.020260		73.86
HORIZON-MISS-2022-			20.00

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OCEANCLIMA-01	<i>from</i> 01.020220		0.43
	<i>from</i> 01.020230		0.41
	<i>from</i> 01.020240		2.62
	<i>from</i> 01.020250		12.32
	<i>from</i> 01.020260		4.21
HORIZON-MISS-2021-COOR-01		2.00	
	<i>from</i> 01.020210	0.29	
	<i>from</i> 01.020220	0.09	
	<i>from</i> 01.020230	0.07	
	<i>from</i> 01.020240	0.58	
	<i>from</i> 01.020250	0.58	
	<i>from</i> 01.020260	0.38	
HORIZON-MISS-2021-NEB-01		25.00	
	<i>from</i> 01.020210	3.67	
	<i>from</i> 01.020220	1.16	
	<i>from</i> 01.020230	0.85	
	<i>from</i> 01.020240	7.28	
	<i>from</i>	7.28	

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	<i>01.020250</i>		
	<i>from 01.020260</i>	4.77	
HORIZON-MISS-2022-SOCIALCAT-01			30.00
	<i>from 01.020210</i>		5.44
	<i>from 01.020220</i>		0.38
	<i>from 01.020230</i>		0.51
	<i>from 01.020240</i>		3.42
	<i>from 01.020250</i>		12.72
	<i>from 01.020260</i>		7.53
HORIZON-MISS-2022-NCP-01			1.50
	<i>from 01.020210</i>		0.27
	<i>from 01.020220</i>		0.02
	<i>from 01.020230</i>		0.03
	<i>from 01.020240</i>		0.18
	<i>from 01.020250</i>		0.63
	<i>from 01.020260</i>		0.37
Other actions			

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Public procurement		See footnote ⁶⁶⁷	See footnote ⁶⁶⁸
	<i>from</i> <i>01.020210</i>	2.29	2.04
	<i>from</i> <i>01.020220</i>	0.35	0.09
	<i>from</i> <i>01.020230</i>	0.58	0.04
	<i>from</i> <i>01.020240</i>	2.69	0.71
	<i>from</i> <i>01.020250</i>	9.84	1.13
	<i>from</i> <i>01.020260</i>	6.89	0.33
Service Level Agreement		See footnote ⁶⁶⁹	See footnote ⁶⁷⁰
	<i>from</i> <i>01.020220</i>	0.03	0.02
	<i>from</i> <i>01.020230</i>	0.05	0.02
	<i>from</i> <i>01.020240</i>	0.20	0.11

⁶⁶⁷ To which EUR 6.89 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.69 million from the 'Digital, Industry and Space' budget and EUR 2.29 million from the 'Health' budget and EUR 0.58 million from the 'Civil Security for Society' budget and EUR 9.84 million from the 'Climate, Energy and Mobility' budget and EUR 0.35 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 22.64 million for these actions.

⁶⁶⁸ To which EUR 0.33 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.71 million from the 'Digital, Industry and Space' budget and EUR 2.04 million from the 'Health' budget and EUR 0.04 million from the 'Civil Security for Society' budget and EUR 1.13 million from the 'Climate, Energy and Mobility' budget and EUR 0.09 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 4.33 million for these actions.

⁶⁶⁹ To which EUR 0.60 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.20 million from the 'Digital, Industry and Space' budget and EUR 1.20 million from the 'Climate, Energy and Mobility' budget and EUR 0.05 million from the 'Civil Security for Society' budget and EUR 0.03 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 2.08 million for these actions.

⁶⁷⁰ To which EUR 0.21 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.11 million from the 'Digital, Industry and Space' budget and EUR 0.52 million from the 'Climate, Energy and Mobility' budget and EUR 0.02 million from the 'Civil Security for Society' budget and EUR 0.02 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 0.88 million for these actions.

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	<i>from</i> 01.020250	1.20	0.52
	<i>from</i> 01.020260	0.60	0.21
Grant to identified beneficiary according to Financial Regulation Article 195(e)		See footnote ⁶⁷¹	See footnote ⁶⁷²
	<i>from</i> 01.020210	0.02	0.80
	<i>from</i> 01.020220	0.01	0.02
	<i>from</i> 01.020230	0.01	
	<i>from</i> 01.020240	0.04	0.18
	<i>from</i> 01.020250	0.04	
	<i>from</i> 01.020260	0.03	
Grant awarded without a call for proposals according to Financial Regulation Article 195		See footnote ⁶⁷³	
	<i>from</i> 01.020220	0.07	
	<i>from</i> 01.020230	0.14	
	<i>from</i> 01.020240	0.56	

⁶⁷¹ To which EUR 0.03 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.04 million from the 'Digital, Industry and Space' budget and EUR 0.02 million from the 'Health' budget and EUR 0.04 million from the 'Climate, Energy and Mobility' budget and EUR 0.01 million from the 'Civil Security for Society' budget and EUR 0.01 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 0.15 million for these actions.

⁶⁷² To which EUR 0.18 million from the 'Digital, Industry and Space' budget and EUR 0.80 million from the 'Health' budget and EUR 0.02 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 1.00 million for these actions.

⁶⁷³ To which EUR 1.29 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.56 million from the 'Digital, Industry and Space' budget and EUR 3.31 million from the 'Climate, Energy and Mobility' budget and EUR 0.14 million from the 'Civil Security for Society' budget and EUR 0.07 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 5.37 million for these actions.

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	<i>from</i> <i>01.020250</i>	3.31	
	<i>from</i> <i>01.020260</i>	1.29	
Expert contract action		See footnote ⁶⁷⁴	See footnote ⁶⁷⁵
	<i>from</i> <i>01.020210</i>	0.22	0.35
	<i>from</i> <i>01.020220</i>	0.07	0.08
	<i>from</i> <i>01.020230</i>	0.05	0.07
	<i>from</i> <i>01.020240</i>	0.44	0.54
	<i>from</i> <i>01.020250</i>	0.44	0.81
	<i>from</i> <i>01.020260</i>	0.29	0.48
Specific grant agreement			See footnote ⁶⁷⁶
	<i>from</i> <i>01.020220</i>		1.79
	<i>from</i> <i>01.020230</i>		1.75

⁶⁷⁴ To which EUR 0.29 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.44 million from the 'Digital, Industry and Space' budget and EUR 0.22 million from the 'Health' budget and EUR 0.44 million from the 'Climate, Energy and Mobility' budget and EUR 0.05 million from the 'Civil Security for Society' budget and EUR 0.07 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 1.50 million for these actions.

⁶⁷⁵ To which EUR 0.48 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.54 million from the 'Digital, Industry and Space' budget and EUR 0.35 million from the 'Health' budget and EUR 0.07 million from the 'Civil Security for Society' budget and EUR 0.81 million from the 'Climate, Energy and Mobility' budget and EUR 0.08 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 2.32 million for these actions.

⁶⁷⁶ To which EUR 19.21 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 11.88 million from the 'Digital, Industry and Space' budget and EUR 52.60 million from the 'Climate, Energy and Mobility' budget and EUR 1.75 million from the 'Civil Security for Society' budget and EUR 1.79 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 87.24 million for these actions.

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	<i>from</i> <i>01.020240</i>		<i>11.88</i>
	<i>from</i> <i>01.020250</i>		<i>52.60</i>
	<i>from</i> <i>01.020260</i>		<i>19.21</i>
Provision of technical/scientific services by the Joint Research Centre		See footnote ⁶⁷⁷	
	<i>from</i> <i>01.020220</i>	<i>0.07</i>	
	<i>from</i> <i>01.020230</i>	<i>0.13</i>	
	<i>from</i> <i>01.020240</i>	<i>0.56</i>	
	<i>from</i> <i>01.020250</i>	<i>2.19</i>	
	<i>from</i> <i>01.020260</i>	<i>2.05</i>	
Indirectly managed action		See footnote ⁶⁷⁸	
	<i>from</i> <i>01.020210</i>	<i>0.29</i>	
	<i>from</i> <i>01.020220</i>	<i>0.09</i>	
	<i>from</i> <i>01.020230</i>	<i>0.07</i>	
	<i>from</i> <i>01.020240</i>	<i>0.58</i>	

⁶⁷⁷ To which EUR 2.05 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.56 million from the 'Digital, Industry and Space' budget and EUR 0.13 million from the 'Civil Security for Society' budget and EUR 2.19 million from the 'Climate, Energy and Mobility' budget and EUR 0.07 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 5.00 million for these actions.

⁶⁷⁸ To which EUR 0.38 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 0.58 million from the 'Digital, Industry and Space' budget and EUR 0.29 million from the 'Health' budget and EUR 0.58 million from the 'Climate, Energy and Mobility' budget and EUR 0.07 million from the 'Civil Security for Society' budget and EUR 0.09 million from the 'Culture, creativity and inclusive society' budget will be added making a total of EUR 2.00 million for these actions.

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	<i>from</i> <i>01.020250</i>	<i>0.58</i>	
	<i>from</i> <i>01.020260</i>	<i>0.38</i>	
Estimated total budget		606.39	631.60