

EN

Annex 12

Horizon Europe

Work Programme 2023-2024

12. Missions

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Introduction

EU 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.

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). In 2021 Missions went through an initial preparatory phase, during which implementations plans were developed. These included detailed objectives, specific interventions, investment strategy and performance indicators for each mission. In summer 2021, the implementation plans have been assessed against objective criteria¹ and all five proposed EU Missions have now entered their full implementation²:

- Adaptation to Climate Change: support at least 150 European regions and communities to become climate resilient 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;
- Restore our Ocean and Waters by 2030;
- A Soil Deal for Europe: 100 living labs and lighthouses to lead the transition towards healthy soils by 2030.

Missions will continue to 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 implementation and monitoring throughout their duration, also showcasing the added value of the EU.

The five EU Missions work programme part for 2023 contain actions to support the full implementation of missions according to their implementation plans. The work programme will contain actions in synergy and coordination with other missions, parts of Horizon Europe, in particular with European Partnerships and Clusters, and including also bottom-up parts

¹ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe/assessment-criteria_en
² [COM\(2021\) 609 final](#)

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.

Critical to the success of the missions will be the extent of wide engagement across the EU and Associated Countries and beyond, including citizens, in particular young people. To this end, Missions will contribute to the European Solidarity Corps scheme with the aim of engaging with the younger generation to deliver on the five EU Missions goals.

DRAFT

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 has launched a specific mission to foster the resilience of all, be it regions, cities, local communities, 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. Its implementation plan specifies the goal and objectives as well as implementation details of the mission “**Adaptation to Climate Change**”³.

Rooted in research and innovation, the Mission has set out concrete objectives and deliver tangible solutions, mainstreaming nature-based approaches, to Europeans. The work supported by the Mission will also be of particular relevance to the forthcoming Nature Restoration Law, that will set targets to restore degraded ecosystems.

A regional approach

The Mission 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, local authorities and communities 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 and local authorities that are more vulnerable to climate impacts and have low adaptive capacity will receive particular attention. The Mission approach is to ask front-runners European regions to share their experience and lessons learnt with others and accompany them in finding and possibly reapplying solutions adapted to their 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

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

3. Demonstrate systemic transformations to climate resilience: deliver at least 75 large-scale demonstrations of systemic transformations to climate resilience across European regions, local authorities and communities.

For 2023, the Mission will focus on supporting regions, local authorities and communities in demonstrating at real scale and in real life climate resilience solutions capable to address one or more of the systems locally identified as key for climate resilience building and as the most vulnerable to effects of climate change. Indeed, the Mission will support the innovation still needed to implement the solutions at scale, in the specific environment where the demonstration will take place, and to transform the key systems into a more climate resilient systems, with Nature-Based Solutions to be explored as priority. The demonstration projects would be ideally part of the adaptation roadmaps locally developed to address the identified climate risks, and in line with the National Adaptation Plan and regional adaptation pathway/strategy, where available. In the spirit of the Mission, those projects should also be co-designed, co-developed and co-implemented with the engagement and support of the local stakeholders, being them the citizens, the businesses and /or the social partners.

Engagement and commitment by the Regions and the local authorities directly in the demonstration activities will assure to maintain the solutions in place for the future, beyond the implementation duration of the project. This will contribute to the aim to deliver at least 75 large-scale demonstrations of systemic transformations to climate resilience across European regions and communities by 2030, scaling up and fostering large-scale deployment of tested innovative solutions for climate resilience, the enabling of their diffusion and the removal of barriers for their uptake. 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)
	2023	
HORIZON-MISS-2023-CLIMA-01	94.80	20 Sep 2023
Overall indicative budget	94.80	

Call - Demonstration of climate resilience solutions in support of the implementation of the Adaptation to Climate Change Mission

HORIZON-MISS-2023-CLIMA-01

Conditions for the Call

Indicative budget(s)⁴

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ⁵	Number of projects expected to be funded
		2023		
Opening: 10 Jan 2023 Deadline(s): 20 Sep 2023				
HORIZON-MISS-2023-CLIMA-01-01	IA	40.00 ⁶	8.00 to 10.00	4
HORIZON-MISS-2023-CLIMA-01-02	IA	34.80 ⁷	8.00 to 11.00	3
HORIZON-MISS-2023-CLIMA-01-03	IA	20.00 ⁸	5.00 to 7.00	3
Overall indicative budget		94.80		

General conditions relating to this call

⁴ 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 2023 and 2024.

⁵ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

⁶ Of which EUR 4.29 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 7.45 million from the 'Digital, Industry and Space' budget and EUR 0.87 million from the 'Civil Security for Society' budget and EUR 26.48 million from the 'Climate, Energy and Mobility' budget and EUR 0.91 million from the 'Culture, Creativity and Inclusive Society' budget.

⁷ Of which EUR 3.73 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 6.48 million from the 'Digital, Industry and Space' budget and EUR 0.76 million from the 'Civil Security for Society' budget and EUR 23.04 million from the 'Climate, Energy and Mobility' budget and EUR 0.79 million from the 'Culture, Creativity and Inclusive Society' budget.

⁸ Of which EUR 2.14 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 3.72 million from the 'Digital, Industry and Space' budget and EUR 0.44 million from the 'Civil Security for Society' budget and EUR 13.24 million from the 'Climate, Energy and Mobility' budget and EUR 0.46 million from the 'Culture, Creativity and Inclusive Society' budget.

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Missions**

<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 2023, 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.

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:

- 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, mainstreaming nature-based solutions in the approach.

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 be, therefore, foreseen in the design and/or implementation of the solutions, strategies and developments.

Proposals are invited against the following topic(s):

HORIZON-MISS-2023-CLIMA-01-01: Testing and demonstrating transformative solutions increasing climate resilience of the agriculture and/or forestry sector.

Specific conditions

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<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 8.00 and 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 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 conditions are described in General Annex B.</p> <p>In addition to the standard eligibility conditions, proposals must include demonstration activities to be carried out in 4 different regions/communities located in 3 different MS or associated countries, involving and including in the consortium partners from these three countries.</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>Evaluation and award procedure</i>	Proposals will be selected not only in order of ranking but selecting the highest ranked proposals for each biogeographical area ⁹ , provided that the applications attain all thresholds

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

- Regions and communities have undertaken action transforming into tangible projects their roadmaps designed with the aim of fostering a systemic approach to climate resilience towards the different and multi-risks locally identified as relevant, with particular emphasis on the development of nature-based solutions, biodiversity and climate mitigation synergies, and ecosystem restoration across a range of agricultural and/or forestry ecosystems.
- Regions and communities have taken the leadership and have been involved in development and testing of solutions that can transform the agriculture and the forestry sector, making it more resilient to foreseen climate change, while making progress in the sustainable transformation required implementing the European Green Deal.
- Solutions contribute to the implementation at the local level of the Common Agriculture Policy and the related national Strategic Plans, are well in line with the foreseen measures for drought management and/or the river basin management plans where those are in place.

⁹ As defined by the EEA: [Biogeographical regions — European Environment Agency \(europa.eu\)](https://www.eea.europa.eu/en/biogeographical-regions)

- Developed solutions are close to nature, are at least neutral or support biodiversity, improve or at least do not harm water quality and availability (retentiveness in the landscape), making both the sector and nature more resilient to climate change and supporting implementation of the EU Biodiversity Strategy for 2030.
- Solutions making the agriculture and/or forestry business more resilient to long term effects of climate change have been developed, tested and brought closer to the market.
- Potential economic, social and environmental losses caused by extreme weather events to the agriculture sector and other sectors, such as forestry, are reduced, making them more resilient through better preparation.
- Accompanying measures for enabling conditions, that would boost the outcomes, such as support instruments for environmental services, the use of digital monitoring, access to relevant data and knowledge, facilitation of financing and mobilisation of resources, are piloted.
- Agriculture and other related businesses in the sector, in particular those offering to the food-water nexus, are better prepared to cope with the changing climate, also through climate adaptation targeted education, up- and re-skilling programmes.
- Climate-resilient solutions dedicated to small farms, organic farms or farms in conversion or any type of farms looking for alternative to intensive agriculture are enabled, contributing to the implementation of the Farm to Fork Strategy.

Scope: This topic relates to the Mission's objectives to mobilise at least 150 regions in testing the solutions most locally needed to build climate resilience and to deliver at least 75 deep demonstrations of systemic transformations to climate resilience.

The proposal should **develop and test innovative solutions**, combining technological, social and business innovation, leading to an increase of the resilience and adaptation capacity to climate change in the involved regions and communities of the agriculture sector and the related value chains. Nature based solutions¹⁰ and the restoration of cropland and grassland should be explored as priority and at the very heart of the development whenever possible.

The proposed solution should address at least some of the following aspects:

- Improving resilience of the **agriculture and /or forestry sector**, improving the capacity of the sector to withstand dry periods and extreme droughts while protecting the ecological flows, preserving biodiversity in and around the catchment channels, preserving longitudinal connectivity of the flowing streams, slowing the falling level of

¹⁰ The EU Commission defines nature-based solutions as “Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.” Nature-based solutions must therefore benefit biodiversity and support the delivery of a range of ecosystem services.

the groundwater table and reversing the loss of biodiversity. This should include for example exploring value of culture rotation and other means to improve soil quality, improving soil structure by circular approaches, establishment and maintenance of landscape features (for example such as hedges reducing wind erosion), innovative silvo-pasture, management of genetic resources in an agro-ecological perspective and other agro-ecology approaches in farmland, in particular in relation to droughts and water multi-usage and management;

- Exploiting **agro-ecology** as an approach to enhance the climate resilience of the farming system, its functionality and sustainability, while bringing sustainable solutions and multiple benefits, such as enhanced yields from adapted food crops, water efficiency, enhanced farmer livelihoods from income generation, increased biodiversity, improved water quality and water use efficiency, the ecological status of waters, improved soil structure and health, reduced erosion, and/or a higher level of carbon sequestration.
- Exploring integration of available **smart farming** approaches (and improvements of the same based on updated data) and the use of technologies as the AI and the Internet of Things (IoT) to improve climate resilience through the modification and improvement of nutrient and crop protection processes, such as fertilization, pest control and irrigation, to ensure sufficient crop yields both in terms of quality and quantity, while also reducing emissions and preserving biodiversity.
- Development of **more natural ecosystems**, generating combined benefits for climate mitigation, reduction of water flooding and soil erosion, (by increasing recurring to green infrastructures, tree planting, or increasing of permeable green surfaces) and maintaining or restoring rivers, peatland, wetland and natural floodplain.
- Further demonstrate and increase awareness of the **value of maintaining and restoring existing natural systems**, preservation of cultural landscapes and socio-ecological systems as proving rich spectrum of climate services compared to other anthropogenic solutions, including integration of cultural heritage considerations as the legacy from the past, to be experienced in the present, and for transmitting to future generations. In line with the Mission Implementation Plan and moreover with the new EU Climate Adaptation Strategy, implementing nature-based solutions with adequate social and environmental standards 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, which uptake can be facilitated by better quantification and communication of their benefits. NBS essential role for sustaining 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. The forthcoming Nature Restoration Law will also play an important role in requiring MS to plan restoration activities across a range of ecosystems.

As climate impacts, adaptive capacities and disaster risk reduction capabilities differ greatly across regions, the proposed development and innovation should address specific needs identified **at regional and local scale** (both at the rural, urban-rural interface and eventually in urban context) 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**, design and implement a systemic solution to reduce the identified vulnerabilities of the agriculture and/or forestry sector to climate change and to mitigate its negative potential impacts.

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 4 demonstrations taking place in regions/local authorities/ communities**, collaborating in addressing the common climate change challenges identified and in testing the most suitable solutions. These at least 4 demonstrations must be **located in at least 3 different EU Member States or Horizon Europe associated countries**, 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 (totally, partially or with the required adjustments) in their territories is strongly encouraged; this could take the form of inclusion in the consortium of one or more partners 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, enterprises and NGOs, to ensure that all needed capabilities are available to develop and implement real life actions.

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.

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 the Mission Community of Practice that will be established amongst the Mission Charter signatories and **networking and joint activities** with other projects funded under other topics in the Mission Climate Adaptation as well as in other relevant Missions and partnerships, 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. Beyond the Mission, the projects funded under this topic are also encouraged to exchange and identify cooperation opportunities with other projects funded under Horizon Europe, in particular those funded under Cluster 6, the Mission A Soil Deal for Europe and the future partnership on agro-ecology living labs.

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 areas¹¹, 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 proposal as well as the climate risks assessed should also be specified in the free keywords section of the proposal.

HORIZON-MISS-2023-CLIMA-01-02: Testing and demonstrating transformative solutions to protect critical infrastructure from climate change, mainstreaming nature based solutions.

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 8.00 and 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 34.80 million.

¹¹ As defined by: <https://www.eea.europa.eu/data-and-maps/figures/biogeographical-regions-in-europe-2>

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<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 conditions are described in General Annex B.</p> <p>In addition to the standard eligibility conditions, proposals must include demonstration activities to be carried out in 4 different regions/communities located in 3 different MS or associated countries, involving and including in the consortium partners from these three countries.</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 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>In grants awarded under this topic, costs for infrastructure construction or renovation works shall not constitute more than 20% of the total eligible costs. Beneficiaries' own resources and/or mobilisation and leverage of additional investments from national and other EU programs and initiatives (such as EU Structural and Investment Funds) and/or other sources, private or public, should make up the remaining investment costs to secure the economic and financial sustainability of the project.</p>
<i>Evaluation and award procedure</i>	Proposals will be selected not only in order of ranking but selecting the highest ranked proposals for each biogeographical area ¹² , provided that the applications attain all thresholds

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

1. Regions and communities have taken the leadership and have been involved in identifying weaknesses and interlinkages between critical infrastructures¹³, and development and testing of solutions that will make their existing or new critical

¹² As defined by the EEA: [Biogeographical regions — European Environment Agency \(europa.eu\)](https://www.eea.europa.eu/en/biogeographical-regions)

¹³ as defined in art. 2(a) and 2(b) of Directive 2008/114/EC

infrastructure more resilient to climate change, in line with the most recent guidelines for climate proofing.¹⁴

2. Nature based solutions¹⁵ (with adequate social and environmental standards) protecting infrastructure from adverse effects of climate change have been developed, tested and brought closer to the market, increasing evidence for their viability and business potential. Green, climate neutral and zero pollution technology solutions are broadly supported and opportunities for further inter-sectorial cooperation are fostered.
3. Potential economic and social losses caused by extreme weather events and interruption of service due to critical infrastructures becoming unavailable are reduced, making the economy and the society as a whole more resilient through better preparation.
4. Businesses, public and private actors are made more prepared to cope with the changing climate, also through climate adaptation targeted education and training, up- and re-skilling programmes.
5. Prevention and management of emergency events linked to adverse climate effects is improved, thanks to “by design” integration of digital monitoring and relevant data sources in the solutions.

Scope: This topic relates to the Mission’s objectives to mobilise at least 150 regions in testing the solutions most locally needed to build climate resilience and to deliver at least 75 deep demonstrations of systemic transformations to climate resilience.

It complements the Climate Adaptation Mission topic 2021-CLIMA-02-03, which focussed on modelling aspects, as it mainly addresses demonstration of solutions on the ground, therefore providing a relevant context to eventually take further promising approaches already identified.

The proposal should identify weaknesses and interlinkages of critical infrastructures, in order to **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 moreover 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

¹⁴ “Technical guidance on the climate proofing of infrastructure in the period 2021-2027”, published in OJ C373 on 16.9.21

¹⁵ The EU Commission defines nature-based solutions as “Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.” Nature-based solutions must therefore benefit biodiversity and support the delivery of a range of ecosystem services

and help build climate resilience, which uptake can be facilitated by better quantification and communication of their benefits. NBS essential role for sustaining healthy water, oceans, ecosystems 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. The resilience of nature-based solutions to climate change should also be taken into account.

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. The successful methodologies and protocols are expected to be adapted to other regions, for further uptake.

In line with the Mission objective to **build systemic climate resilience**, the proposal should address the **risks locally identified** as climate vulnerabilities (being it as potential natural disasters, extreme weather events or long-term changes in average climate), as well as their potential negative impacts on critical assets and infrastructures and the interdependencies between those.

For example, the acceleration of deployment of renewable energy is not without consequences on other environmental and geopolitical challenges. The interdependency of water and energy is set to intensify in the coming years, with significant implications for both energy and water security. Coal and gas power plants require a lot of water, but also renewable sources could increase water stress or be challenged by it, either during operation or during the construction stage. For instance, hydropower requires water to be operated, so that droughts and water shortages that are foreseen in the future for the Southern member states may significantly affect its generation capacity, while the increased water availability in the Northern states is expected to increase hydropower generation potential. Simultaneously, hydropower reservoirs can help in mitigating floods and store water, providing it during droughts. While wind or solar technologies require little water for their operation, but a significant amount (per installed power capacity) during their manufacturer process, biofuels, concentrated solar power, carbon capture, renewable hydrogen produced through electrolysis or even low-carbon technologies like nuclear are water-intensive. Understanding these interlinkages and develop and test solutions is therefore critical for the resilience of our economy and society, and to reduce sources of conflict.

Similarly, the achievement of a more interconnected Europe has to face key challenges in the development of the interconnected transport networks and corridors, as changing groundwater levels, coastal storms frequency and their spatial incurrence, extreme temperatures, accelerated coastal erosion linked to sea level rise can have very negative effects on stability of rail and road infrastructures in coastal areas (clearly, this also affecting the development and lay down of energy and water networks laid in the proximity of coastal areas).

On that basis, the proposal will then design and test solutions with the potential to reduce negative impacts both of long terms climate change and also of sudden extreme events attributable to climate change.

More specifically, the proposed solution should address:

- **Protecting critical infrastructure** from climate impacts and make it ready to withstand the changing climate and its consequences, in particular in terms of maintaining efficiency of operations, reducing maintenance costs and protecting the capital invested;
- Solutions for building and/or managing new critical infrastructure and/or upgrading/regenerating/revitalising/refurbishing existing ones through green/blue/hybrid infrastructure and if needed different governance structures, in particular in relation to climate-proofing it towards extreme events. Lifecycle ecological and CO2 footprint considerations, from sourcing the materials, including water and energy needed, through transportation of the material, building, maintenance and utilisation, should be embedded in the decision concerning the type of infrastructure approach to pursue;
- Inclusion of digital solutions and services to better predict, monitor and report on climate events, in particular towards improve forecasts of adverse events and triggering adequate risk management and emergency procedures, to protect both business and population, in particular the most vulnerable and marginalised, taking into consideration the interconnections between critical infrastructures and their operation;

Under the Mission approach, collaborations to develop and test effective solutions between regions/communities facing similar climate risks and similar infrastructure challenges are highly encouraged. To this purpose, the proposals **should include at least 4 demonstrations taking place in at least 4 regions/cities/communities**, willing to collaborate in addressing the challenge. These (at least) 4 demonstrations must be **located in at least 3 different EU Member States or Horizon Europe associated countries**. 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 the innovative solutions, and a process for commitments (including funding and governance) in assuring their large-scale deployment and long-term operation beyond the time-life of the project itself. The consortium should seek guarantees for the non-reversibility, sustainability and continuity of the action after the end of the project.

The proposals should clearly identify the biogeographical area, as defined by the EEA¹⁶, 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 (totally, partially or with the required adjustments) in their territories is

¹⁶ 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)

strongly encouraged; this could take the form of inclusion in the consortium of one or more partners 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, enterprises, and NGOs to ensure that all needed capabilities are available to develop and implement real life actions.

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. 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 the Mission Community of Practice that will be established amongst the Mission Charter signatories and **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 areas¹⁷, 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.

HORIZON-MISS-2023-CLIMA-01-03: Testing and demonstrating transformative solutions to build resilience towards health risks caused by the effects of climate change

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 5.00 and 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 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>The conditions are described in General Annex B.</p> <p>In addition to the standard eligibility conditions, proposals must include demonstration activities to be carried out in 4 different regions/communities located in 3 different MS or associated countries, involving and including in the consortium partners from these three countries.</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 6 to 7 by the end of the project – see General Annex B
<i>Evaluation and award procedure</i>	Proposals will be selected not only in order of ranking but selecting the highest ranked proposals for each biogeographical area ¹⁸ , provided that the applications attain all thresholds

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

¹⁷ As defined by: <https://www.eea.europa.eu/data-and-maps/figures/biogeographical-regions-in-europe-2>
¹⁸ As defined by the EEA: [Biogeographical regions — European Environment Agency \(europa.eu\)](https://www.eea.europa.eu/en/biogeographical-regions)

- regions, local authorities and communities have been involved in development and testing of a whole range of transformative solutions that will help to mitigate the effect of climate change on health and human wellbeing, including making the health sector more climate resilient and better prepared to mitigate the climate change related health challenges.
- climate resilience solutions that protect human health have been developed, tested and are made largely available

Scope: This topic relates to the Mission's objectives to mobilise at least 150 regions in testing the solutions most locally needed to build climate resilience and to deliver at least 75 deep demonstrations of systemic transformations to climate resilience.

The proposals should test and demonstrate solutions that address both the two below aspects:

1. Improve prevention and policy-making, by:

- **Improved insights into short- and long-term health effects of climate-related stressors**, including **planetary health** considerations (interactions between global climate change, ecosystem, animal and human health as described in the One Health concept). Taking into consideration differences between infectious and non-communicable diseases, and the particularities of each. With regard to the infectious diseases, emphasis should be given on the surveillance and prevention of zoonotic diseases. These improved insights should be made available and be integrated by the regional and local authorities in their planning. The European Climate and Health Observatory can contribute to these efforts and, reversely, learnings from the projects supported under this topic would contribute to the Observatory knowledge basis.
- **Strengthening comprehensive and user friendly epidemiological surveillance and modelling and forecasting tools**, including socio-economic trajectories and adaptation scenarios of exposure and vulnerability to climate determinants. These tools should be suitable for assessing and predicting impact of moderate, extreme and record-breaking events and disasters associated with climate change, including impacts on mental health. Environmental stressors should also be considered when relevant for the prevention of major non-communicable such as cardiovascular and respiratory diseases e.g. combination of heat waves and air pollution or increase in pollens. Surveillance, modelling and forecasting tools should be piloted in the partner regions and communities. Reflecting the One Health concept, the link between animal health impacts due to climate change and subsequent human health impacts should also be considered, when relevant.
- Development of **better forecast, early-warning and early response systems and decision-making models for health impacts** of climate change which are able to monitor both the impact and the effectiveness of solutions.

- Development and **health impact assessment of adaptation measures** and monitoring of effectiveness of solutions to improve resilience of countries, regions and cities, including effective nature-based solutions (NBS).
2. Improve preparedness of health systems by:
- **Development of innovative solutions (technological solutions, NBS, etc) to reduce impact of climate change on human health and wellbeing.** Heat and cold waves and floods should be among the stressors considered, but proposals should not limit their work to only these two stressors and might consider the association with environmental conditions such as the association of heat waves and air quality or exposure to pollens. Solutions should be designed with a win-win objective so to not have a negative effect on climate mitigation efforts, after sufficient consideration of positive and negative interactions.
 - **Preparing training curricula on health and climate change** for medical and other healthcare professionals across Europe. The proposed curricula should be trailed in the partner regions and communities, training pilot group of professionals.
 - **Development of innovative, fit-for-purpose, end-user driven early warning and response systems or improving existing ones**, including a demonstration of their predictive/response capacity, to ensure a rapid response from health services and civil protection authorities and testing/pilot such systems in the partner regions and communities.
 - Providing feedback and sharing best practice from pilots to the new Health Emergency Preparedness and Response Authority. Such tests should be accompanied by **public awareness campaigns** in relation to climate forecasts and health early warning systems, identifying the warning communication chain, role, tasks and responsibilities of science advisors and decision-makers.

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 4 regions/local authorities/ communities**, collaborating in addressing the common challenge identified and conducting demonstration activities of the most suitable solutions. These (at least) 4 demonstrations must be **located in at least 3 different EU Member States or Horizon Europe associated countries**, 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 (totally, partially or with the required adjustments) in their territories is strongly encouraged; this could take the form of inclusion in the consortium of one or more partners 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, enterprises and NGOs, to ensure that all needed capabilities are available to develop and implement real life actions.

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.

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 the Mission Community of Practice that will be established amongst the Mission Charter signatories and **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. Beyond the Mission, the projects funded under this topic are also encouraged to exchange and identify cooperation opportunities with other projects funded under Horizon Europe, in particular those funded under Cluster 1.

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 areas¹⁹, grants will be awarded to applications not only in order of ranking

¹⁹ As defined by: <https://www.eea.europa.eu/data-and-maps/figures/biogeographical-regions-in-europe-2>

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 proposal as well as the climate risks assessed should also be specified in the free keywords section of the proposal.

DRAFT

Missions' Joint Calls

Joint Call between Mission 100 Climate Neutral and Smart Cities by 2030 and Mission Adaptation to Climate Change

Call - Demonstration of climate mitigation and resilience solutions in support of the implementation of the Adaptation to Climate Change and Cities Missions

HORIZON-MISS-2023-CLIMA-CITIES-01

Conditions for the Call

Indicative budget(s)²⁰

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ²¹	Number of projects expected to be funded
		2023		
Opening: 10 Jan 2023 Deadline(s): 27 Apr 2023				
HORIZON-MISS-2023-CLIMA-CITIES-01-01	IA	40.00 ²²	10.00 to 12.00	4
Overall indicative budget		40.00		

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

²⁰ 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 2023 and 2024.

²¹ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

²² Of which EUR 3.63 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 7.46 million from the 'Digital, Industry and Space' budget and EUR 27.06 million from the 'Climate, Energy and Mobility' budget and EUR 0.90 million from the 'Civil Security for Society' budget and EUR 0.95 million from the 'Culture, Creativity and Inclusive Society' budget.

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	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-2023-CLIMA-CITIES-01-01: Urban greening and re-naturing for urban regeneration, resilience and climate neutrality

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 10.00 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 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 Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</p> <p>The following additional eligibility criteria apply:</p> <p>Each action must include pilot demonstrations in at least four cities²³ situated each in different Member States or Associated Countries to demonstrate how urban planning and design can be optimally deployed to develop and implement greening and re-</p>

²³ 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.

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	<p>naturing solutions for regeneration, repurposing and rehabilitation purposes whilst enhancing their overall urban climate neutrality and resilience.</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><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 cities Mission Platform²⁴ and the soon to be established Climate adaptation Mission Platform is essential, and projects should ensure that appropriate provisions for activities and resources aimed at enforcing this collaboration are included in the work plan of the proposal. The collaboration with these Mission Platforms should be formalized through a Memorandum of Understanding to be concluded as soon as possible after the projects' starting date.</p> <p>In grants awarded under this topic, eligible costs for major infrastructure works (such as constructions works, road works, urban renovations, construction of buildings and other major public works), shall not constitute more than 20% of the total eligible costs. Beneficiaries' own resources and/or mobilisation and leverage of additional investments from other EU programs and initiatives (such as EU Structural and Investment Funds) and/or other sources, private or public, should make up the remaining investment costs to secure the economic and financial sustainability of the project.</p>
<p><i>Exceptional page limits to proposals/applications</i></p>	<p>The page limit of the application is 70 pages.</p>

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

²⁴ Conceived through the Horizon 2020 project NetZeroCities - Accelerating cities' transition to net zero emissions by 2030, Grant Agreement n. 101036519, 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*

- Regenerated, rehabilitated, climate-proofed, resilient, environmentally, socially and economically upgraded built environment and in particular areas such as large estate social housing districts, deprived districts and neighbourhoods, neglected or abandoned areas, derelict industrial sites, brownfields or other dysfunctional urban sites through greening and re-naturing interventions²⁵
- Improved liveability, functionality, quality of life and social cohesiveness of the urban areas by means of greener, renatured, regenerated, more bio-diverse, safer, mixed/multi-use and shared urban (public) spaces and built environments, whilst catering for climate change mitigation, adaptation, resilience and energy poverty of various social groups, including women and children, elderly and people with low socioeconomic status by:
 - Increasing the share of newly created and/or restored public green spaces, (such as green/blue infrastructures, parks, gardens, forests, green corridors, community allotments, green roofs, restored degraded urban ecosystems, nature-based solutions) by at least 25% over the total targeted under regeneration area, compared to the baseline at the start of the project;
 - Evidence-based urban regeneration, re-purposing and rehabilitation plans, blueprints, practical recommendations and guidelines, regulations and standards, focusing on greening and renaturing solutions for pollution abatement, cleaner air, water and soil and climate mitigation and adaptation plans compatible and coherent with the corresponding regional ones;
 - increased citizens satisfaction by at least 20% compared to the baseline at the start of the project due to increased greening/re-naturing of the urban space and improved quality of life, air, water, soil;
- Integrated, transdisciplinary, adaptive, transparent and participative urban planning practices and decision making processes to facilitate the integration and take-up of greening, renaturing and biodiversity-enhancing approaches and solutions in urban climate plans enabling for considerations of cross-scalar (cities/region) compatibility and coherence of climate planning frameworks and cross-sectorial interdependencies;
- Innovative methods, digital tools and data-driven models enabling identification, prioritization and visualization of place-based holistic solutions and scenario analysis, assessment of feasibility and cost-effectiveness and prediction of their short, mid and long term impact;
- Mutually compatible and supportive EU sectorial and urban/region cross-scalar planning for climate mitigation, adaptation and neutrality at both city and region level;

²⁵ Such as green and blue infrastructures, Nature-based solutions, green roofs and corridors, restoring degraded urban ecosystems and/or ecosystem-based approaches,

- Increased social awareness about urban climate related vulnerabilities (such as flooding, heat-waves, etc.), and the urgency for climate mitigation and adaptation and zero pollution strategies and solutions;
- Innovative monitoring²⁶ frameworks and key performance indicators, accounting, as appropriate, for the established ones, to monitor the performance and assess the performance and impact of the deployed solutions regarding climate mitigation, adaptation and regeneration against a well-defined baseline at the start of the project;
- Contribution, as appropriate, to the implementation of the European Green Deal, the Climate-Neutral and Smart Cities Mission (hereafter referred to as the Cities Mission), the Adaptation to Climate Change Mission (hereafter referred to as the Climate Mission), as well as other urban relevant policies and initiatives such as the Zero Pollution Action Plan, Biodiversity Strategy, Fit for 55 Strategy, EU Urban Mobility Framework, Water Framework Directive, Circular Economy Action Plan, European Urban Initiative, Urban Agenda for the EU, New Leipzig Charter, Europe's Digital Decade, the European partnership on Driving Urban Transitions for a sustainable future (DUT) and the New European Bauhaus Initiative.

Scope: Cities are at the forefront of tackling climate change and pollution and managing impacts through mitigation and adaptation measures. However, while in the last decade local and regional authorities gained a better understanding of the inter-related climate challenges and urgencies of their territories, less has been undertaken to effectively implement and assess climate mitigation and adaptation specific approaches and, in consequence, to adopt them into the local urban/regional policies, strategies and planning documentations (such as municipal/regional master planning, Urban Agendas, SUMP, SECAP, SEAP, smart specialisation strategies etc.).

To meet the objectives of the European Green Deal, the Paris and Glasgow agreement and the UN (United Nations) Sustainable Development Goals, cities in close cooperation with their surrounding region, should engage in decisive actions to tackle the climate change, biodiversity and pollution imperatives and enhance their climate resilience.

It is widely acknowledged²⁷ that urban “greening” and renaturing approaches and solutions, if properly designed and maintained, can address simultaneously climate change mitigation and adaptation challenges by reducing GHG emissions and atmospheric concentrations, energy demands for e.g. mobility, wastewater treatment, heating and cooling. They can also contribute to significant regeneration and upgrading of built environment whilst delivering

²⁶ Such as CIVITAS Impact and process evaluation framework, or the schemes developed by projects funded under the LC-CLA-11-2020: Innovative nature-based solutions for carbon neutral cities and improved air quality

²⁷ Authoritative research indicates that nature-based solutions can provide over one-third of the cost-effective climate mitigation needed between now and 2030 to stabilize warming to below 2 °C (IPBES (2019): Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services)

multiple co-benefits in terms of biodiversity conservation and enhancement, cleaner air, water and soil, noise reduction, flood risks mitigation, public health and well-being.

The objective of this topic is to explore and demonstrate how to operationalize collaborative climate mitigation and adaptation urban planning approaches deploying “greening” and renaturing solutions for regeneration, re-purposing, rehabilitation and pollution abatement purposes. The co-created plans should be in line with the guiding principles of the European Green Deal and the New European Bauhaus initiative.

To this end, it invites for demonstration actions in at least four ‘lead’ cities accompanied by at least four ‘replicator’ cities, representing good geographical, climate and socio-economic diversity across Europe and situated each in a different Member State or Associated Country, where existent urban structure and fabric allow rehabilitation, regeneration, re-purposing or (re)conversion of areas such as large scale social housing districts, deprived districts and neighbourhoods, neglected or abandoned areas and brownfields, derelict industrial sites or dysfunctional urban places through greening and renaturing.

Actions are expected to:

- Set-up in each participating city collaborative platforms (such as living labs) depicting multi-level, and multi-disciplinary governance structures and engaging local authorities, citizens, stakeholders and relevant actors²⁸ and expertise²⁹ for the co-design, testing and demonstration of co-created urban rehabilitation, regeneration, re-purposing or (re)conversion plans deploying greening and re-naturing approaches to foster more climate neutral, resilient, liveable, sustainable and functional cities with thriving nature, communities and economic activities;
- Ensure that the regional dimension concerning climate adaptation is properly accounted for through the continuous and seamless involvement of competent regional authorities responsible for the design and implementation of the regional climate mitigation and adaptation measures to ensure cross-scalar (city/region) compatibility and coherence of the urban/regional climate mitigation and adaptation plans.

Actions should also foresee assessment, quantitative and qualitative, ex-ante and post-ante, of the impact of combining and integrating different greening and re-naturing interventions and actions both at local and at regional level based on robust monitoring schemes and using, as appropriate, existing methodologies and indicators.

The ‘lead’ demonstration cities must, further to the development of the above mentioned plans, also foresee actual implementation of the co-created interventions during the life of the project. To this end, concrete implementation actions and associated costs should be described under a dedicated Work Package.

²⁸ Such as infrastructure providers, knowledge institutions, planners, cultural and creative organizations, energy, mobility and climate agencies

²⁹ Such as planning, design, ICT sector, social sciences and humanities, behavioural and citizens sciences, gender, ecology etc.

The replicator/follower cities, under the proactive guidance and mentoring of the lead cities, should develop their co-created plans, measures and interventions with not obligation for their actual implementation during the life of the project.

To support the integrated planning process and facilitate involvement of citizens in the decision-making process, actions should make effective use of digital tools (e.g. digital twins) integrating cross-domain static, real time and historic data from observations, modelling and simulation whilst making use of open standards and technical specifications.

Actions should engage in clustering activities with other like-minded projects funded under this topic, other relevant projects³⁰ and projects supported under the Climate-Neutral and Smart Cities and Climate Adaption missions to promote synergies and complementarities.

Although concrete actions for such activities would only be identified in an early stage in the projects' lifetime, appropriate provisions and resources enabling their implementation should be put aside at the proposal level in a clearly identifiable work package. Furthermore, actions should engage in ambitious outreach, communication, dissemination and training activities to foster replication, upscaling and up-taking of the projects' outputs beyond the projects consortia.

To maximise impacts, in carrying out these activities, actions are strongly recommended to work in coordination and complementarity with the 'Climate Neutral and Smart Cities' and the (soon to be established) 'Climate Adaptation' Mission Platforms. Opportunities for collaboration and synergies should also be explored and, as appropriate, pursued with other relevant initiatives, such as 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 EU³¹, the CSA project selected from the call HORIZON-MISS-2021-CIT-01-02, the Covenant of Mayors, the CIVITAS initiative and Living-in.EU.

Joint Call between Mission Restore our Ocean and Waters by 2030, Mission Adaptation to Climate Change and Mission A Soil Deal for Europe

Call - Demonstration of climate mitigation and resilience solutions in support of the implementation of the Adaptation to Climate Change, Restore our Ocean and Waters by 2030 and A Soil Deal for Europe Missions

HORIZON-MISS-2023-CLIMA-OCEAN-SOIL-01

³⁰ Such as the CSA project resulting from the call "HORIZON-CL6-2022-BIODIV-01-03: Network for nature: multi-stakeholder dialogue platform to promote nature-based solutions" and Horizon Europe relevant projects on nature-based solutions in cities under the call "HORIZON-CL6-2023-BIODIV: Stopping biodiversity loss and enhancing ecosystem services in urban and peri-urban areas"

³¹ More particularly, the Partnership for sustainable land use and nature-based solutions, and the resources the Partnership developed, on [Sustainable Land Use | Futurium \(europa.eu\)](#) as well as the upcoming [Partnership on Greening of Cities provided that the outcome of the ex-ante assessment concerning the plans to set up this Partnership will be positive](#)

Conditions for the Call

Indicative budget(s)³²

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ³³	Number of projects expected to be funded
		2023		
Opening: 17 Jan 2023 Deadline(s): 20 Sep 2023				
HORIZON-MISS-2023-CLIMA-OCEAN-SOIL-01-01	IA	15.00 ³⁴	Around 15.00	1
Overall indicative budget		15.00		

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

³² 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 2023 and 2024.

³³ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

³⁴ Of which EUR 4.88 million from the 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' budget and EUR 2.63 million from the 'Digital, Industry and Space' budget and EUR 0.31 million from the 'Civil Security for Society' budget and EUR 6.85 million from the 'Climate, Energy and Mobility' budget and EUR 0.32 million from the 'Culture, Creativity and Inclusive Society' budget.

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	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-2023-CLIMA-OCEAN-SOIL-01-01: Mission Climate adaptation, Mission Ocean & waters and Mission Soil Deal for Europe – Joint demonstration of an integrated approach to increasing landscape water retention capacity at regional scale

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 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 15.00 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 entities from at least three Member States and/or Associated Countries in which demonstration activities will take place.</p> <p>The following additional eligibility criteria apply:</p> <p>The proposals must use the multi-actor approach. See definition of the multi-actor approach in the introduction to this Work Programme part.</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 5-7 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 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</p>

	<p>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. 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 within the project in the “associated region”³⁵. 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>
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Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Demonstrated effective and inclusive integrated approaches to the management of landscape, soil, water, vegetation at a regional level, to increase the resilience to climate change impacts on soils, waters, habitats and biodiversity;
- Demonstrated effective nature-based solutions and ecological approaches to increase landscape water retention capacity, including soil water retention capacity;
- Demonstrated economic feasibility of these solutions, ensuring their long term sustainability;
- Enhanced implementation of the European Green Deal, the EU Adaptation Strategy, the EU Biodiversity Strategy, EU legislation for the protection of freshwaters (such as the EU Water Framework Directive and EU Groundwater Directive) and the EU Soil Strategy for 2030;
- Better information and greater mobilisation of all relevant actors, including citizens, local and regional authorities and planning bodies, farmers, foresters, land owners, business owners and economic operators, soil protection and management organisations, water management and planning bodies, for an effective and sustainable governance of soil, water and all other landscape components to achieve climate change resilience and increase water retention in the landscape.

³⁵ ‘Associated regions’ are understood as areas with similar ecosystems (neighbouring regions and/or regions in a different river basin, including less-developed regions), which are selected with a view to building capacity to implement innovative solutions to restore relevant ecosystems. 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” may benefit only once from the Financial Support to Third Parties provided under this topic.

Scope: This joint 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, to the Mission Ocean & Waters' objective 1, protect and restore marine and freshwater ecosystems and biodiversity, and objective 2, prevent and eliminate pollution of marine and freshwaters. The topic also relates to several specific objectives of the Mission A Soil Deal for Europe, including to the objectives to reduce soil degradation and soil sealing and to prevent erosion. It also contributes to the objectives of the Water Framework Directive (WFD), including achieving Good Ecological and Chemical Status and restoration of aquatic ecosystems, and to the objectives of the Groundwater Directive as regards improvement of chemical status of ground waters.

Landscape water retention capacity is understood as the ability of water bodies, soils and other ecosystems to retain water after it has fallen as precipitation; it is fundamental for the protection of biological diversity as life depends on water. High landscape water retention capacity prevents accelerated surface run-off, increases water content in soils and surface and ground water availability for vegetation, improves the quantity and quality of groundwater and aquifer recharge, reduces soil erosion and nutrient run off into surface water bodies, and improves local micro-climate by reducing local air and biomass temperature. As such, it has the potential to prevent and mitigate impacts of extreme hydrological events such as floods and to act as a buffer against heat extremes. Permanent vegetation in a landscape, such as forest areas, wetlands and permanent grasslands, significantly improves water retention capacity.

Projects should demonstrate socio-ecological approaches and nature-based solutions to increase landscape and soil water retention capacity, leading to improvement of quality and quantity of ground and surface waters in the area where they are deployed, and boosting resilience to climate change impacts. A combination of nature-based measures with hybrid solutions and relevant Blue-Green engineering may be considered, provided these combined solutions are sustainable and provide adequate social and environmental safeguards.

The demonstration activities must take place in at least three Member States and/or Associated countries, and entities from those countries must be included as beneficiaries in the proposal. Proposals under this topic should comprise full-scale demonstration of innovative solutions in real conditions of landscapes in the countries selected for demonstration activities³⁶, with specific impacts leading to a measurable increase of the resilience and adaptation capacity of the areas involved, whilst contributing to climate change mitigation, surface and ground water quality, soil health improvement and biodiversity protection and conservation. Applying a multi-actor approach, demonstrations should be carried out at the level of socio-ecological territorial units that are large enough to allow covering the different living and non-living systems (soil, water, vegetation and other biota, human communities, etc.) in a landscape and the complex web of relations among them (e.g. a region or a sea/river basin).

³⁶ These could build on solutions studied e.g. under topic HORIZON-MISS-2022-CLIMA-01-05 "Boost the sponge function of landscape as a way to improve climate-resilience to water management challenges", among others.

Planning, implementation and management of effective measures to increase landscape water retention capacity requires involvement of various stakeholders and their expertise, such as land, owners, spatial planning and other local and regional authorities, soil protection and management experts, water management and planning bodies, landscape planning experts, farmers and forest managers. Local authorities and local communities should be involved in the design and implementation of the solutions, to ensure that these are well suited for local needs and conditions and are “owned” by the local communities. Activities should, therefore, promote the involvement of local communities as well as the relevant authorities, to consider with them the impact of intended actions, and to co-create measures while taking local communities’ needs and values on board. The proposals should involve citizens, including where appropriate European volunteer/solidarity corps, and relevant citizen science activities.

The project(s) should also identify, create and disseminate best-practice examples for end-users (e.g. farmers and other land managers, decision-makers, water management authorities, landscape planners) to ensure landscape water retention capacity in the long term, including soil water retention capacity, with a view to boosting resilience to climate change, preventing biodiversity loss and promoting at the same time socio-economic transition processes in an ecosystem-based and circular bioeconomy perspective, and promote those best practices among the end users.

The demonstration sites established within the project(s) funded under this topic could qualify as “lighthouses”³⁷ in the sense of the Mission A Soil Deal for Europe if and when they comply with the criteria laid down in the Implementation Plan of that Mission.

Proposals should both:

- Involve at least five “associated regions”³⁸ as third parties, to showcase the feasibility, replicability and possibility to scale up the solutions developed. The consortium will proactively reach out to these associated regions to enable them to follow closely the project and its demonstration activities, transferring knowledge to them and technical assistance to build capacity and to implement integrated approaches for landscape, water and soil management to increase landscape water retention capacity in their territories; and

³⁷ “Lighthouses” are defined in the Implementation Plan of the Mission ‘Soil Deal for Europe’ as “places for demonstration of solutions, training and communication that are exemplary in their performance in terms of soil health improvement”. They are local sites (one farm, one forest exploitation, one industrial site, one urban city green area, etc.) that can be included in a living lab area or be situated outside a living lab area.

³⁸ “Associated regions” are understood as areas with similar ecosystems (e.g. neighbouring regions and/or in a different sea basin and/or in a different biogeographical area) and/or less-developed regions, with the view to build capacity to implement the innovative solutions to manage landscape, water and soil in an integrated approach 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.

- Draw up an action plan and roadmap to replicate and scale up the solutions within the ‘associated regions’ and beyond them, to increase landscape water retention capacity, including soil water retention capacity.

As a mechanism to provide knowledge transfer and technical assistance to the associated regions, the selected project should 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 process for selection of the third parties to which financial support would be granted, based on the principles of transparency, objectivity and fairness.

The project(s) funded under this topic should address all the below points:

- Contribute to the networking and coordination activities and joint activities of the three Missions, including by establishing links with projects funded under Horizon 2020³⁹, including the European Green Deal call, and under Horizon Europe, where they are relevant for climate adaptation and soil health knowledge and solutions;
- Include a mechanism and resources to establish links with the Implementation Support Platform of the Mission Ocean and Waters and build links with other activities of this Mission to maximize synergies;
- 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 and should include a mechanism to establish links with the Mission Adaptation to Climate Change Implementation Platform;
- Include a mechanism and resources to establish links with the Implementation Platform being established for the Mission A Soil Deal for Europe; and
- Support the Ocean and Water Knowledge System⁴⁰ and the EU Soil Observatory⁴¹, in particular by contributing to knowledge creation and data collection.

³⁹ See Cordis results packs LC-CLA-13-2020, at 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)

⁴⁰ See the Implementation Plan of Mission Ocean & Waters, [Final outline implementation plans \(europa.eu\)](https://europa.eu)

⁴¹ https://joint-research-centre.ec.europa.eu/eu-soil-observatory-euso_en

**Horizon Europe - Work Programme 2023-2024
Missions**

Budget⁴²

	Budget line(s)	2023 Budget (EUR million)
Calls		
HORIZON-MISS-2023-CLIMA-01		94.80
	<i>from</i> 01.020220	2.16
	<i>from</i> 01.020230	2.07
	<i>from</i> 01.020240	17.65
	<i>from</i> 01.020250	62.76
	<i>from</i> 01.020260	10.16
HORIZON-MISS-2023-CLIMA-CITIES-01		40.00
	<i>from</i> 01.020220	0.95
	<i>from</i> 01.020230	0.90
	<i>from</i> 01.020240	7.46
	<i>from</i> 01.020250	27.06
	<i>from</i> 01.020260	3.63
HORIZON-MISS-2023-CLIMA-OCEAN-SOIL-01		15.00
	<i>from</i> 01.020220	0.32

⁴² 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 2023 and 2024.

Horizon Europe - Work Programme 2023-2024
Missions

	<i>from</i> 01.020230	0.31
	<i>from</i> 01.020240	2.63
	<i>from</i> 01.020250	6.85
	<i>from</i> 01.020260	4.88

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