Feedback opportunity for the work programme 2025

Mission on Cancer

Draft expected impacts:

The Cancer Mission Work Programme 2025 will continue to support the implementation of the Mission through topics in each of its four objectives while addressing its four transversal priorities, notably:

- Improve the understanding of the development of cancer in the context of the environment, work, genetics and lifestyle in the broadest possible sense.
- Foster closer collaboration among cancer research digital infrastructures and increase the access to data of different types.
- Enhance cross-policy cancer prevention strategies, including by expanding outreach and engagement with citizens.
- Optimise the diagnosis and treatment of cancer, including for children, adolescents and young adults, based on the principle of equitable access.
- Improve the quality of life of cancer patients, survivors and their families through widely analysing and understanding key factors and needs that are related to the quality of life, including aspects of palliative care.
- Accelerate the digital transformation of research, innovation and health systems.
- Address all cancers, including poorly-understood cancers or cancer subtypes, in men and women, children, adolescents and young adults as well as in the elderly and in socio-economically vulnerable populations, living in either cities, rural or remote areas.
- Enhance the integration of the Cancer Mission activities at national, regional and local levels through the engagement of public authorities, stakeholders and citizens.

See also Cancer Mission implementation plan 2e87e31f-37f7-4892-ab4f-2fad7ee1fcc3_en (europa.eu).

Main expected outcomes:

- In line with the Cancer Mission Implementation Plan, countries will be assisted to improve cancer prevention and control through the integration of innovative approaches and scientific evidence into their health systems.
- Policy makers will benefit from the improvement of existing policies related to cancer, or will identify the need for new policy measures, through the generation of knowledge and evidence, by enhanced dialogue and peer-learning among key stakeholders.
- The capability of extracting new knowledge on cancer development and progression mechanisms will be improved through the increased use of a large amount of FAIR (Findable, Accessible, Interoperable, Reusable) data and the application of new tools based on Artificial Intelligence methods.
- Citizens including people at high risk of developing cancer, cancer patients and cancer survivors will benefit from the development of effective cancer prevention strategies and screening programmes, medical devices, diagnostic tests, as well as treatment and care solutions.
- Cancer patients, survivors and their families will benefit from a better understanding and management of unmet needs concerning quality of life of cancer patients, survivors and their families.

Feedback opportunity for the work programme 2025

Mission: 100 Climate-Neutral and Smart Cities by 2030

Draft expected impacts:

The Climate-neutral and smart cities Mission 2025 Work Programme will continue to support the implementation of the Mission by providing strong and direct support to cities that will commit to climate neutrality by 2030, in synergy with significant progress towards zero pollution, sustainable and inclusive urbanization, as well as a safe digital transformation. In turn, the cities benefitting from these actions will act as experimentation and innovation hubs for other cities to become climate-neutral by 2050.

Supporting cities in their twin green and digital transition while aiming for climate neutrality brings important co-benefits and urban qualities such as reduced air and noise pollution, more sustainable mobility, improved health and well-being, reduced urban environmental footprints, enhanced urban greening, more efficient use of energy and infrastructures and improved waste and water management. It also improves policy coherence across sectors and stimulates participatory and inclusive decision-making. Therefore, in addition to a significant contribution to the objective of the European Green Deal to make Europe climate-neutral by 2050, the supported actions will also contribute to the UN Agenda 2030, the Urban Agenda for the EU, the New Leipzig Charter, the Fit for 55 strategy, the EU Industrial Strategy, the Green Deal Industrial Plan and the Net-Zero Industry Act, the EU Zero Pollution Action Plan, the Circular Economy Action Plan, the Smart and Sustainable Mobility Strategy and the related new EU urban mobility framework, the Biodiversity Strategy for 2030, Europe's Digital Decade and the EU Strategy on adaptation to climate change.

Proposals for topics should set out a credible pathway to contributing to the Climate-Neutral and Smart Cities Mission, and more specifically to one or several of the following impacts:

- Facilitated twin green and digital transition and social resilience for at least 100 European cities by 2030.
- Implementation of the Climate City Contracts (CCCs) prepared by the cities participating in the Mission.
- Cities are taking action to increase energy and resource efficiency, promote circular economy, encourage urban regeneration and resilience, and they accelerate the uptake of innovative systemic solutions and clean tech in key areas (e.g., energy, mobility, construction, industry, spatial planning, environment, digitization, and data handling).

Cities are engaging and involving their citizens in the solutions, technologies developed and actions taken to become climate neutral, in order to guarantee acceptance, adherence and adoption, as well as, give particular attention to vulnerable groups.

- Cities are increasingly using data and digital technologies (such as data platforms, IoT, AI and local digital twins for predictive scenarios) for better decision-making and to drive efficiencies in delivering services and reducing emissions through open standards and shared technical specifications.
- Cities embrace innovative and inclusive cross-sectorial collaborative governance models, facilitating multi-level and multi-stakeholder engagement in decision-making and joint

planning, as well as the CCC implementation in collaboration with citizens and local stakeholders.

- The CCCs identify and pool the demands of the cities in the Cities Mission across sectors, providing scalability and predictability for industry and investors, thus strengthening the competitiveness of European industry and SMEs.

Those expected impacts are highly relevant for all of the Key Strategic Orientations (KSO) in the Horizon Europe Strategic Plan 2025-2027:

- KSO 1 – The green transition:

R&I activities will support the development, testing, demonstrating and scaling-up new and innovative solutions for urban climate neutrality across sectors (e.g. energy efficiency, renewable energy, affordable energy, demand side flexibility, sustainable, safe and smart mobility, renovation, net-zero industry, clean tech deployment, circularity, digitalisation incl. AI-powered local digital twins, joint green and social procurement, etc.) through traditional calls for proposals but also through Horizon Europe Partnerships. In order to ensure higher impact, these actions will provide adequate funding for projects so that they can go beyond proofs of concept and limited pilots and offer ground for synergies among different Partnerships for demonstrating solutions. In addition, several projects in each of these areas will be funded so as to offer a wide range of tested solutions fitting to cities.

Pursuing the objectives of the Mission and engaging a large number of European Cities in accelerating their transition to climate neutrality will bring massive and visible "co-benefits" – such as better air quality, enhanced resource and energy efficiency, more sustainable and less congested mobility, warmer housing and lower heating costs, healthier active mobility, fewer road deaths, cleaner industries, better use and reuse of materials, less noise and more liveable spaces – thus substantially contributing to this impact area. Cost-effective and cross-sectorial approaches to significantly reduce GHG emissions, restore biodiversity and ecosystems and valorize nature's potential for climate and pollution mitigation will be inherently embedded in the Cities Mission and cities CCCs. Their development, upscaling and replication will be supported through the R&I actions in the Work Programmes, including through developing positive indicators to measure progress for the participating cities on this aspect. Further to climate neutrality, such actions will also make a significant contribution to the fulfilment of the zero emission and zero pollution ambition, and the EU Biodiversity strategy for 2030.

- KSO 2 – The digital transition:

Development of digital and smart solutions will be encouraged as horizontal enablers across the full range of actions, as appropriate. As underlined in the Cities Mission Implementation Plan, cities are key players and uniquely well placed to draw on the fundamental, transformative and crosscutting power of data in the digital era for their twin green and digital transitions to address the complexities and maximize social, environmental and economic impacts. An example of these digital and smart solutions are the digital twins; these will allow cities to create their climate neutrality plans based on scientific evidence and real life data by visualizing and forecasting needs/testing policy scenarios for climate neutrality in an efficient way. These scenarios should include tests for cybersecurity and other potential risks.

- KSO 3 – A more resilient, competitive, inclusive and democratic Europe:

Citizen engagement is a key feature of Horizon Europe Missions since their inception phase and even more so during their implementation. The five Horizon Europe Missions will collaborate and share best

practices cross-cutting issues such as citizen engagement, and communication and outreach activities. Within the Cities Mission, dedicated actions will be developed through the Mission Platform to harness the potential of social innovation and citizen engagement for the preparation and rolling out of the CCCs and for place-based approaches developed directly with cities and their citizens. The Mission Platform will help cities participating in the Mission to explore innovative governance methods. This includes the involvement of key local stakeholders, such as civil society platforms to engage with citizens and actively involve them to develop, implement and monitor progress of the CCCs. Special purpose vehicles, local climate pacts, one-stop shops and citizen and renewable energy communities are examples of such organisational models. The goal is to link local actions for climate neutrality with their co-benefits such as air quality, reduction of energy bills, less noise and more liveable spaces and road safety, thus building up the local ownership of the transition and inducing stronger local commitment, acceptance and adoption of relevant measures as well as behavioural change. Actions taken under the Cities Mission take into consideration vulnerable groups, thus contributing to an inclusive Europe and a just transition.

Direct involvement of citizens in the policies for climate neutrality can be realised through use of digital technologies, for example local digital twins (including 3D models of a city), interactive data dashboards and AR/VR or gamification technologies. These allow citizens to visualise and test scenarios and policy impacts, and respond to these by shaping decision-making in their local area.

In terms of competitiveness, the Mission cities can become early adopters of clean technologies and new materials and create “lead markets” for Europe’s clean tech manufacturing capacity. The CCCs will help identify and pool the demands of the cities in the Mission across sectors. This has the potential to create scalability and predictability of demand for both investors and industry. The large-scale decarbonisation and climate resilience efforts of cities in Europe within the Cities Mission constitute a driver of demand for the net-zero industry in Europe making it relevant for Europe's competitiveness.

Main expected outcomes:

In line with the commitments undertaken through the Cities Mission Implementation Plan, the Work Programme 2025 for the Cities Mission targets the implementation of three building blocks: (1) the scaling up of the Mission Platform to ensure support for all cities in the Mission; (2) the setup of R&I actions to develop, test and demonstrate new and innovative solutions for climate neutrality in cities across sectors; (3) and contribution to the deployment of solutions, including scaling up, tailor-made finance advisory services. The expected outcomes related to the implementation of actions under these building blocks are the following:

- Strengthened operational capacity of the Mission Platform to support the implementation of CCCs.
- Supported existing financial advisory services for Mission cities to help implement their investment strategy.
- Synergies with other Missions and partnerships and other relevant EU- funded initiatives through large-scale demonstrations and pilots in cities to test and scale up solutions for climate neutrality on e.g. energy efficiency; renewable energy; sustainable, safe and smart mobility for passengers and goods; digitalization; circularity; urban regeneration etc.
- Supported preparation and implementation of joint procurements.

Feedback opportunity for the work programme 2025

Mission on Adaptation to Climate Change

Draft expected impacts:

The goal of the EU Mission on adaptation to climate change is to support at least European 150 regions, cities and local authorities in their efforts to build resilience against the impacts of climate change. It aims to do so by helping regions better understand their current and future climate risks, develop their own tailored adaptation pathways, and test & deploy innovative solutions on the ground. 311 regions and local authorities - from 25 EU Member States and 4 countries associated to Horizon Europe - have signed the Mission Charter and have committed to work towards the Mission's objectives, showcasing the high relevance of the Mission and the strong commitment to prepare for the climate of the future.

Knowledge developed by the R&I community will be leveraged to produce actionable solutions that the regions and local authorities of the Mission can easily implement. Regions and local authorities will be supported in their efforts to reduce vulnerability to climate change by scientific yet usable knowledge on climate risk assessment and empowered to formulate a robust and complete analysis of the current and future risks in their territories. On the basis of a robust assessment, they will be enabled to develop or improve their plans to increase climate preparedness and implement them.

The overall expected impacts of the mission are to accelerate adaptation efforts across Europe, at the regional and local levels, based on best available knowledge, in a smart, systemic and inclusive way. It is expected that the regions and local authorities engaged with the Mission will continue to act as pioneers to progress towards climate resilience, thanks to the Mission tools and services.

Main expected outcomes:

As laid out in its implementation plan, the Mission has moved from its initial build-up phase, where it put in motion all its different streams of actions, and is now in full deployment. The first mission projects as well as the mission implementation platform of the mission all started their activities in early 2023.

The goal of Work Programme 2025 is therefore to consolidate the building blocks of the mission, address shortcomings identified (also by the evaluation of the mission conducted in 2023 and referred to in the Communication on Missions in July 2023) and increase concrete support to regions and local authorities, to match the oversubscription to the Mission by the Charter signatories and interested parties. To ensure that the mission is evidence-based, Work Programme 2025 will be informed by the findings of the first European-wide Climate Risk Assessment, released in March 2024 by the European Environment Agency.

The main expected outcomes are the following:

- Coordinated implementation of Mission actions is supported, building on the established support structure that is bringing together all the different streams of activities of the Mission by fostering exchange of best practices and peer learning, communication, monitoring and stakeholders annual gathering.
- Regions and local authorities understand better their Current and Future Climate Risks, thanks to direct hands-on support to regions and local authorities for conducting their climate risks

assessment, according to the framework already established by the mission through the Climaax project.

- Regions and local authorities have designed more robust adaptation plans, thanks to direct hands-on support to regions and local authorities to produce robust adaptation plans including their financing, according to the Regional Adaptation Support Tool developed by the European Environment Agency
- Remaining R&I gaps that are relevant for adaptation at the regional and local level are tackled by EU research activities, in coordination with the work taking place under the clusters of Horizon Europe's pillar II.
- New innovative climate adaptation solutions are made available for regions and local authorities, especially for those facing challenging conditions and expected to be most severely impacted by climate change. This enlarges the portfolio of solutions already made available by the previous Mission work programmes, and champions the mission's core value of inclusivity.
- Climate adaptation investments from private actors and the banking sector are unblocked for regions and local authorities, by addressing the enabling conditions for climate adaptation financing (both funds and resources). Faster uptake in the market of adaptation solutions across Europe and enhanced capabilities and tools for climate-proofing of adaptation investments are triggered, overcoming addressing a consistently emerging key limiting factor.

Feedback opportunity for the work programme 2025

Mission: Restore our Ocean and Waters by 2030

Draft expected impacts:

The actions to be financed under this WP will contribute to achieving the three specific objectives of the Mission and their related targets:

- protecting 30% including 10% strictly protected of the EU's sea area as well as restoring marine ecosystems and biodiversity and 25.000 km of free flowing rivers (in line with EU Biodiversity Strategy 2030 and the [proposed] Nature Restoration Law);
- preventing and eliminating pollution at sea by reducing plastic litter by 50%, the release of microplastics into the environment by 30%, nutrient losses and use of chemical pesticides by 50% (in line with the EU Action Plan Towards Zero Pollution for Air, Water and Soil); and
- making the blue economy climate-neutral and circular with net-zero maritime and aquaculture emissions (in line with the European Climate Law and the Sustainable Blue Economy Strategy)

They will also contribute to both cross-cutting enablers that support these objectives, by providing access to a digital ocean and water knowledge system as well as broad public mobilization and engagement in the co-design and co-delivery of the solutions.

The actions will contribute to transitions of the European Green Deal in an inclusive way, ensuring the uptake of innovative solutions and preparing the ground for further replication and deployment. Activities proposed will ensure the involvement of relevant **communities and stakeholders across the EU, especially those dependent on healthy seas, oceans and inland waters** (e.g., coastal communities, islands, waterfront cities, coastal regions, river catchments, fishing and maritime stakeholders).

Main expected outcomes:

As mentioned in the Implementation Plan of the Mission [ref IP section 2.1.1], in the second 'deployment and upscaling' phase (2026-2030), the solutions already developed and piloted to deliver on the Mission and Green Deal objectives will be further replicated and scaled up through rounds of calls for the up-scale of solutions. This will enable broad participation in the Mission across the EU. These scale-up actions will bring new innovations (either developed in the first phase of the mission or outside) to the local contexts, and adapt solutions so they can be replicated in new areas. These scale-up actions will include not only science and technologies, with high TRL levels and de-risking of market deployment, but also social and governance innovation, with a strong involvement of citizens, stakeholders, communities and international organisations, such as those in charge of sea/river basin strategies. Excellent and impact-driven R&I efforts will contribute to boosting the scale, scope and availability of the knowledge, data and solutions, improving monitoring, mapping and modelling in a context of climate change and anthropogenic pressures. It will also contribute to the development of new business models, financial and societal innovation as well as innovative participatory research frameworks with close involvement of citizens.

The 'lighthouse' approach designed in the first phase will be enhanced, through the support to place-based activities implementing the objectives and developing further solutions needed for scale up, and thus strengthening basin-scale cooperation and governance.

Overall, the actions will contribute to the ecological-circular-climate neutral transitions promoted by the Mission Ocean and Waters in line with the European Green Deal.

Examples of 2030 expected outcomes include the following as outlined in the Mission implementation plan:

- evidence-based approaches and solutions to support the establishment of Marine Protected Areas through the active involvement of relevant stakeholders (national and regional authorities, research organisations, NGOs, blue economic sectors such as fisheries, tourism, shipping, and citizens) in the Blue Parks activities implemented by the Mission;
- placed-based activities addressing pollution-related pressures and effects in the sea-waters ecosystems by implementing source-to-sea approaches and promoting effective forms of governance at local and transregional level;
- uptake of innovative solutions to support carbon-neutrality, energy transition and circularity in fisheries and aquaculture across the value chain, including through the integration of IT/AI, big data, automated and autonomous technologies and multi-purpose approaches;
- place-based and people-centered restoration of a number of coastal regions and river catchments, helping regional and local authorities to implement solutions contributing to achieving substantial progress under the Mission target(s), building on existing knowledge and solutions, as well as on already applied mechanisms such as e.g. coastal restoration contracts, river contracts, etc.;
- restoration of waterfront cities helping relevant local authorities to implement solutions to achieve substantial progress under the Mission target(s), applying existing knowledge and solutions involving local communities and pooling complementary sources of funding;
- restoration of small islands, helping relevant local authorities to implement solutions to achieve substantial progress under the Mission target(s), applying existing knowledge and solutions involving local communities and pooling complementary sources of funding;
- integration of additional models in the European Digital Twin Ocean (EU DTO), ensuring appropriate connectivity/coupling between them: geochemical, ecosystem and integrated coastal models, building on the EDITO-Infra[1] prototype and the EDITO-Model Lab[2] project;
- consolidation of national and regional hubs mobilizing of national and regional funds as well as private financing, to support the replication of innovative solutions in each lighthouse addressing the Mission objectives.

[1] European Digital Twin Ocean - Introducing EDITO-Infra - EDITO-Infra
[2] EDITO-Model Lab — European DIgital Twin Ocean

Feedback opportunity for the work programme 2025

Mission: A Soil Deal for Europe

Draft expected impacts:

Proposals for topics under the Mission "A Soil Deal for Europe" WP25 should set out a credible pathway to contributing to the 3 key strategic orientations of the Strategic Plan 2025-2027[3] and to the 8 objectives set out in the Mission Implementation Plan.

More specifically, topics under the WP25 of the Mission will contribute to one or several of the following long-term impacts:

- Soil health-improving innovative governance, policies, and incentives that integrate the main environmental, social, economic, regulatory, and cultural factors influencing soil management, and soil degradation are in place, particularly at regional and local levels.
- Improved and coherent soil health monitoring is adopted by land managers, citizens, researchers, and Member States using cost-efficient techniques that harness the potential of remote sensing, citizen science, digital technologies such as artificial intelligence, and other technologies and tools such as omics.
- Soil health is being restored across the EU and Associated Countries by enhanced availability and uptake by land managers of sustainable soil management and restoration plans, practices, and technologies.
- Soil literacy and citizens engagement in soil health protection and restoration is improved.
- Researchers, land managers and policymakers are aware of and have access to tested, harmonised indicators and monitoring methods to assess soil health and soil functions, with special focus on soil organic carbon, water availability and quality, soil biodiversity, emerging contaminants, and issues, such as antimicrobial resistance.
- International discussions on soil health concepts and definitions are supported by scientific evidence, and coordination with other international actors is promoted to advance in the adoption of soil health protection measures and restoration practices that maximise soil biodiversity and ecosystem services for economic, social, and environmental resilience, including climate change adaptation and mitigation.

Main expected outcomes:

To achieve the above-mentioned expected impacts, projects results are expected to contribute to some of the following expected outcomes:

- Exchange, testing, demonstration, and sharing of results, as well as learning mechanisms for soil health are in place that link participatory on-the-ground research with end users (such as living labs, lighthouses, or citizen science), also in coordination with international partners and funders.
- Enlarged network of living labs and lighthouses is established across the EU to monitor and maximise soil health for all land uses and major pedo-climatic conditions.
- Improved evidence is available on the main environmental, social, economic, regulatory, and cultural factors influencing soil management and land degradation, its costs, and its consequences for food security, the economy, or the land market.

- Role and engagement of regional and local authorities in soil health management are strengthened, as is the engagement of citizens and land managers to co-design, test, and monitor solutions.
- Farmers, foresters, advisors, and urban planners, as well as public authorities and citizens have access to greater knowledge on soil issues.
- Comparable, cost-efficient soil health monitoring methods, including citizen science, remote sensing, and digital techniques are available to policy makers, researchers and land managers for effective data collection and flows across the EU and Associated Countries.
- Collection, storage, and analysis of comprehensive baseline data on the EU's global soil health footprint related to food, feed, wood, and biomass use are facilitated, focusing on the externalities of European demand on foreign countries.
- Enhanced understanding of soil and water interactions is available, as is improved risk assessment at different levels of water-related extreme weather events, and increased environmental resilience through restoration, conservation, and integrated management of the soil-water nexus.
- Impact of soil management practices on soil health are quantified and better integrated into policies and incentives to improve agriculture’s resilience, including forestry and other land uses.
- Nutritional value of crops related to soil health is explored and better integrated into soil management practices to improve human health.
- Improved knowledge of soil biodiversity and its role in antimicrobial resistance and antibiotic biosynthesis is established, as well as potential consequences for human health in a One Health approach.
- Better mechanisms are applied for the science-policy interface across the Mission Soil projects to support the development and implementation of scientific evidence-based soil protection and restoration policies at EU, national, regional, and local levels.