and research infrastructures' or the 'Partnership for Sustainable Food Systems (SFS) for people, planet and climate', which will also support living labs.

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge and outputs through close collaboration with the European Union Soil Observatory (EUSO) and the project SoilWISE. In particular, proposals should ensure that relevant data, maps and information can potentially be available publicly through the EUSO.

HORIZON-MISS-2024-SOIL-01-02: Living Labs in urban areas for healthy soils

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 12.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Proposals must apply the multi-actor approach. See definition of the multi-actor approach in the introduction to this Mission.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants (further to calls or, if duly justified, without a call for proposals). The maximum amount to be granted to each third party is EUR 200 000, to allow for the active involvement of stakeholders, including farmers, businesses or civil society, in the living labs to deliver on the actions described under the scope.

Expected Outcome: Activities under this topic respond directly to the goal of the Mission 'A Soil Deal for Europe' of setting up 100 living labs and lighthouses by 2027 to lead the transition to healthy soils by 2030. It supports the Soil Mission specific objectives, in particular the following ones: 3 "No net soil sealing and increase the reuse of urban soils", 4 "Reduce soil pollution and enhance restoration", 5 "Prevent erosion", and specific objective 8 "Increase soil literacy in society across Member States".

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

- Increased capacities for participatory, interdisciplinary and transdisciplinary R&I across EU Member States and Horizon Europe Associated Countries, allowing for effective cooperation and collaboration among research, practice and policy to co-create and test solutions for soil health.

- Enhancement of soil health in rural or urban areas where living labs are deployed, based on an established monitoring framework.

- Practice-oriented knowledge, tools and techniques are more easily available to urban communities, local city councils/regions and land managers and contribute to an enhanced consideration and uptake of effective solutions for soil health and related ecosystem services across across neighbourhood/communities, territories and sectors, in regions where the selected living labs are operating.

- Policy makers in the EU and Associated Countries are more aware of local needs and differences with regards to soil health and can use this knowledge to design more effective policies.

Scope: While more research is needed to restore and maintain healthy soils in the EU and Associated Countries, an important barrier still encountered to accelerate the transition towards a climate-neutral and green European Union is the gap between science and practice, between knowledge and implementation. The Mission 'A Soil Deal for Europe' proposes a novel approach to research and innovation in the area of soil health, including the implementation of living labs. Living labs have the potential to empower a green transition towards healthy soils by developing solutions in a co-creative manner and involving actors in real life settings at territorial level to achieve large-scale impact.

Nowadays, there are various definitions and conceptualizations of living labs. However, three components are recognizable within the now well-established living labs research concept, which include (a) co-creation with a large set of stakeholders, (b) carried out in real-life settings and (c) involving the end-users [490]. For the purpose of the Mission 'A Soil Deal for Europe', ¨soil health living labs are defined as "user-centred, place-based and transdisciplinary research and innovation ecosystems, which involve land managers, scientists and other relevant partners in systemic research and co-design, testing, monitoring and evaluation of solutions, in real-life settings, to improve their effectiveness for soil health and accelerate adoption".

Living labs are thus collaborations between multiple actors that operate and undertake experiments on several sites at regional or sub-regional level [491]. Individual sites could be e.g.,

490 International Agroecosystem Living Laboratories Working Group. Agroecosystem Living Laboratories: Executive Report. G20 - Meeting of Agricultural Chief Scientists (G20-MACS). 2019. Available online:https://www.macs-g20.org/fileadmin/macs/Annual_Meetings/2019_Japan/ALL_Executive_Report.pdf (accessed on 30 June 2022)

491 For the purpose of the topic the regional/sub regional level will not be defined in administrative terms (e.g., NUTS 2 or 3). Instead, applicants should describe the local context and the area in which the work of the living lab will be carried out.

urban green or industrial areas, enterprises and other locations, where the work is carried-out and monitored under real-life conditions.

Lighthouses, in contrast, are defined as "places for demonstration of solutions, training and communication that are exemplary in their performance in terms of soil health improvement". They are individual, local sites (one industrial site, one urban city green area, etc.) that either can be part of a living lab or be situated outside a living lab.

According to the Mission Implementation Plan, living labs involve actors from different backgrounds, disciplines and/or sectors and are composed of 10 to 20 experimental sites. However, depending on the specific context, applicants can propose living labs with fewer experimental sites.

Urbanization is a challenge for soil health, due to construction and infrastructure development that entails, among other, land take, soil sealing, contamination or compaction. Against this background and by working together on common challenges, actors in living labs in urban areas will be able to replicate actions and solutions, compare results, exchange good practices, validate methodologies, benefit from cross-fertilisation, and connect with their local/regional ecosystem. While normally projects run for four years, the duration of soil health living labs may vary and be longer depending on the focus of the work and the soil health challenge(s) addressed.

More specifically, each of the funded projects should:

- Support the setup of four to five living labs (or more, if relevant) to work together on one or more soil health challenge(s) faced by soils in urban areas (e.g., sealing, contamination, fertility, erosion, compaction, etc.) while increasing the overall resilience of urban areas. The living labs should be located in at least three different Member States and/or Associated Countries. Proposals should describe the rationale for cooperation across the various living labs and explain how the work undertaken will contribute to one or more of the Mission's specific objectives [492]. Proposals should present a realistic combination of a limited selection of variables (e.g., number of soil health challenges addressed, land uses, Mission objectives addressed).

- Establish, based on the projects' goals and objectives, a detailed work plan with the activities to be undertaken in the living labs in an interdisciplinary way, ensuring the co-design, co-development, and co-implementation of locally adapted solutions for the selected soil health challenge(s). Seek practical solutions to the identified problems related to the selected soil health challenge(s) identified, taking into account the relevant drivers and pressures. Proposed strategies and solutions should be adapted to the different environmental, socio-economic and cultural contexts in which the living labs are operating. Moreover, activities should address challenges to the scaling up and the transferability of solutions. Where relevant, regeneration of soil health or repurpose of

[492] In particular the following ones: 3 "No net soil sealing and increase the reuse of urban soils", 4 "Reduce soil pollution and enhance restoration", 5 "Prevent erosion", and specific objective 8 "Increase soil literacy in society across Member States"

soils on urban areas to provide locally sourced fresh and healthy food to local food services (e.g., canteens, restaurants, food trucks, markets, etc.) and citizens should be considered.

- Establish for each living lab a baseline for the selected soil health challenge(s), in order to allow for an accurate assessment of the conditions and changes of soils in the different sites over time and for monitoring of progress towards the objectives of the respective living labs and the project overall. As appropriate, make use of the set of soil health indicators presented in the Soil Mission Implementation Plan and the descriptors of the proposal for a Directive on Soil Monitoring and Resilience.

- Monitor and carry out an assessment of the effects of the developed innovative practices or introduced solutions on soil health and related ecosystem services. This should include a demonstration of the viability (e.g., technical, economic) of the proposed solutions and quantification of the impact of the tested practices and/or solutions on relevant soil health indicators. In particular, for living labs working on soil sealing, identify urban-specific monitoring methods in connection to the work developed by Copernicus and for the functional and ecological impacts of the soil sealing process.

- Identify sites that demonstrate high performance in terms of their actions and results on soil health improvement and that may be converted into lighthouses.

- Propose strategies (e.g., financial, organisational) to ensure long-term sustainability and continuity, impact and ambition of the established living labs beyond the Horizon Europe funding, including the identification of possible business models and actions involving local authorities, business communities, SMEs, investors, entrepreneurs including co-funding schemes.

In line with the nature of living labs, proposals must implement a multi-actor approach. The list of stakeholders will vary depending on features specific to each living lab and should involve different types of actors such as researchers, landowners or land managers, industry (e.g., SMEs), public authorities (e.g., administrators responsible for green spaces (such as parks, gardens and urban farms), urban planners, schools, and representatives of civil society (e.g., citizens, environmental NGOs). Care should be taken to describe the capabilities and roles of the different partners involved, based on their areas of expertise. For example, while some partners may lead conceptual work and coordinate work within and across living labs, others may focus on conducting experiments, providing advice, testing and validating innovative solutions, or participating in outreach activities. Where relevant, soil literacy activities for citizens including on agroecology and permaculture should be considered.

To encourage and facilitate the involvement of different types of actors in the living labs, applicants are reminded of the different types of participation possible under Horizon Europe: This includes not only beneficiaries (or their affiliated entities) but also associated partners,

third parties giving in-kind contributions, subcontractors and recipients of financial support to third parties [493].

Financial support to third parties (FSTP) to facilitate active involvement of stakeholders can be provided through calls or, if duly justified, without a call for proposals. Applicants are advised to consult the standard conditions set out in Annex B of the General Annexes including those that apply to FSTP.

Applicants are reminded that they can benefit from the services of NATI00NS, the project dedicated to support potential applicants to the living labs topics.

In order to increase impact and sustainability, applicants are encouraged to explore and test new (or in combination with existing) funding schemes and financial instruments, either public or private involving, where relevant, finance providers such as public authorities or financial institutions and investors.

Projects should cooperate and benefit from the services of SOILL[18], the dedicated 'Living Lab Support Structure' established to provide tailor-made advice to participants of living labs and lighthouses in their day-to-day operations, as well as enforce the monitoring of their activities in a systematic way, reporting on the main outcomes and experiences. Proposals should include dedicated tasks and appropriate resources to collaborate with SOILL as well as with other projects relevant to the chosen soil health challenge(s) and urban soils, funded either under the Mission 'A Soil Deal for Europe' or under other parts and pillars of Horizon Europe or other EU programmes, as appropriate. For the latter these would include networking, attendance to meetings and organisation of joint activities (e.g., workshops, establishing best practices, joint communication or citizen engagement activities). The details of the joint activities would be further defined during the grant agreement preparation phase and the life of the project.

Collaboration and synergies with the Mission "100 Climate-Neutral and Smart Cities" is highly encouraged if living labs are established within one or more of the cities nominated as part of that EU Mission [494]. In addition, if relevant, projects should explore complementary synergies with ongoing Horizon Europe projects such as CLEVERFOOD that is developing a Food 2030 Connected Lab Network of living labs. Additionally, funded projects should collaborate with BENCHMARKS and AI4SoilHealth, which are key new projects looking at sampling, monitoring validating and further development of indicators and proxy measurements for soil health, as well as using AI technology to accelerate the collection and use of soil health information.

The projects may also build on other existing activities and ensure cooperation with relevant projects and partnerships, such as EIT Knowledge and Innovation Communities (EIT KICs)

493 To explore the full range of options including what type of costs and activities are eligible to be funded under Horizon Europe, applicants should refer to the AGA – Annotated Model Grant Agreement https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/aga_en.pdf

494 Nominated EU cities

or the upcoming European partnerships on Agroecology [495] and on Sustainable Food Systems [496].

Proposals should demonstrate a route towards open access, longevity, sustainability and interoperability of knowledge/data and outputs through close collaboration with the Joint Research Centre's EU Soil Observatory (EUSO) and the project SoilWISE. In particular, proposals should ensure that relevant data, maps and information can potentially be available publicly through the EUSO.

HORIZON-MISS-2024-SOIL-01-03: Towards a dynamic monitoring system to assess status and spatiotemporal changes of soil erosion at European scale

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 11.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 11.50 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).

Expected Outcome: Activities under this topic will help to progress towards the objective of the Mission 'A Soil Deal for Europe', in particular specific objective 5 "Prevent erosion". Activities will also contribute to the EU Soil Strategy 2030, the Common Agricultural Policy and its Common Monitoring and Evaluation Framework (CMEF), the framework of indicators in the proposed Soil Monitoring Law, and the EU Sustainable Development Goals (SDGs) indicator set for monitoring progress towards SDG 15 and SDG 2.

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

- Enhanced knowledge on multi-process soil erosion dynamics (e.g., water, wind, tillage, etc.) across Europe based on a combination of novel computer-based estimates and monitoring activities for better estimation of policy impact.

[495] HORIZON-CL6-2023-FARM2FORK-01-1: European partnership on accelerating farming systems transition – agroecology living labs and research infrastructure

[496] HORIZON-CL6-2023-FARM2FORK: European partnership on sustainable food systems for people, plant and climate