

Call: HORIZON-MISS-2024-SOIL-01

(Research and Innovation and other actions to support the implementation of Mission 'A Soil Deal for Europe')

Topic: HORIZON-MISS-2024-SOIL-01-01

Type of Action: HORIZON-RIA

(HORIZON Research and Innovation Actions)

Proposal number: 101219087

Proposal acronym: Nemesis

Type of Model Grant Agreement: HORIZON Action Grant Budget-Based

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Administrative forms

Proposal ID **101219087**

Acronym **Nemesis**

1 - General information

Fields marked * are mandatory to fill.

Topic	HORIZON-MISS-2024-SOIL-01-01	Type of Action	HORIZON-RIA
Call	HORIZON-MISS-2024-SOIL-01	Type of Model Grant Agreement	HORIZON-AG

Acronym **Nemesis**

Proposal title **Soil Health Living Lab Network for Combating Desertification in the Mediterranean**

Note that for technical reasons, the following characters are not accepted in the Proposal Title and will be removed: < > " &

Duration in months **48**

Fixed keyword 1 **Soil management**

Fixed keyword 2 **Soil monitoring**

Fixed keyword 3 **Soil protection**

Fixed keyword 4 **Agriculture**

Fixed keyword 5 **Economics and Business**

Fixed keyword 6 **Socio-ecological systems**

Free keywords ***Co-Solution; Living Lab; Co-Creation; Desertification; Mediterranean; User-centered; Stakeholders; Open innovation; Policy-Shaping; Participatory Co-design; Sustainability; Soil Health Challenges.***

Abstract *

Nemesis strategically establishes five autonomous yet interconnected user-oriented, sustainable Living Labs (LLs) in Cyprus, France, Italy, North Africa (Tunisia/Algeria), and Spain, to combat desertification and improve soil health across the Mediterranean. These LLs will evolve into a multi-disciplinary virtual LL, with primary goal to incorporate all relevant soil health descriptors across a spectrum of heterogeneous real-life environments. The Nemesis community envisions itself as a potent hub of innovative solutions addressing adverse soil degradation issues in the region and beyond, and supporting the Soil Monitoring Law at multiple levels. Nemesis seeks to promote effective, sustainable land management practices and tackle the various societal challenges associated with soil health deterioration in the region. A comprehensive set of tools and frameworks will be established. These are designed to secure the long-term viability and optimal functionality of the LLs, with the aim to advance LLs' pilot sites (60 already identified at the proposal stage) into Lighthouses where they can showcase solutions and exemplary achievements. A core principle guiding Nemesis is its commitment to co-creation and co-development. Nemesis will also emphasize the active engagement of local communities and citizens, with a special focus on representing future generations to build a foundation of environmentally conscious citizens. Nemesis facilitates the exchange of knowledge and fosters the development of novel and adaptable tools that are essential for informed decision-making and policy shaping. The project recognizes the importance of policy creation in addressing the complex challenges it seeks to tackle. This ensures that the innovative solutions generated within the Nemesis LL network will influence broader policy frameworks, fostering a more comprehensive and coordinated approach to combating desertification, among other objectives.

Remaining characters

42

Administrative forms

Proposal ID **101219087**

Acronym **Nemesis**

Has this proposal (or a very similar one) been submitted in the past 2 years in response to a call for proposals under any EU programme, including the current call?

Yes No

Please give the proposal reference or contract number.

Previously submitted proposals should be with either 6 or 9 digits.

Administrative forms

Proposal ID **101219087**

Acronym **Nemesis**

Declarations

Field(s) marked * are mandatory to fill.

- 1) We declare to have the explicit consent of all applicants on their participation and on the content of this proposal. *
- 2) We confirm that the information contained in this proposal is correct and complete and that none of the project activities have started before the proposal was submitted (unless explicitly authorised in the call conditions). *
- 3) We declare:
- to be fully compliant with the eligibility criteria set out in the call
 - not to be subject to any exclusion grounds under the [EU Financial Regulation 2018/1046](#)
 - to have the financial and operational capacity to carry out the proposed project. *
- 4) We acknowledge that all communication will be made through the Funding & Tenders Portal electronic exchange system and that access and use of this system is subject to the [Funding & Tenders Portal Terms and Conditions](#). *
- 5) We have read, understood and accepted the [Funding & Tenders Portal Terms & Conditions](#) and [Privacy Statement](#) that set out the conditions of use of the Portal and the scope, purposes, retention periods, etc. for the processing of personal data of all data subjects whose data we communicate for the purpose of the application, evaluation, award and subsequent management of our grant, prizes and contracts (including financial transactions and audits). *
- 6) We declare that the proposal complies with ethical principles (including the highest standards of research integrity as set out in the [ALLEA European Code of Conduct for Research Integrity](#), as well as applicable international and national law, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols. [Appropriate procedures, policies and structures](#) are in place to foster responsible research practices, to prevent questionable research practices and research misconduct, and to handle allegations of breaches of the principles and standards in the Code of Conduct. *
- 7) We declare that the proposal has an exclusive focus on civil applications (activities intended to be used in military application or aiming to serve military purposes cannot be funded). If the project involves dual-use items in the sense of [Regulation 2021/821](#), or other items for which authorisation is required, we confirm that we will comply with the applicable regulatory framework (e.g. obtain export/import licences before these items are used). *
- 8) We confirm that the activities proposed do not
- aim at human cloning for reproductive purposes;
 - intend to modify the genetic heritage of human beings which could make such changes heritable (with the exception of research relating to cancer treatment of the gonads, which may be financed), or
 - intend to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.
 - lead to the destruction of human embryos (for example, for obtaining stem cells)
- These activities are excluded from funding. *
- 9) We confirm that for activities carried out outside the Union, the same activities would have been allowed in at least one EU Member State. *

The coordinator is only responsible for the information relating to their own organisation. Each applicant remains responsible for the information declared for their organisation. If the proposal is retained for EU funding, they will all be required to sign a declaration of honour.

False statements or incorrect information may lead to administrative sanctions under the EU Financial Regulation.

Administrative forms

Proposal ID 101219087

Acronym Nemesis

2 - Participants

List of participating organisations

#	Participating Organisation Legal Name	Country	Role	Action
1	ERATOSTHENES CENTRE OF EXCELLENCE	Cyprus	Coordinator	
2	YPOURGEIO GEORGIAS, AGROTIKIS ANAPTYXIS KAI PERIV/Cyprus		Partner	
3	TECHNOLOGIKO PANEPISTIMIO KYPROU	CY	Partner	
4	DEPI SPECTRUM (COMPUTING % TELECOMMUNICATION) CY		Partner	
5	THE CYPRUS INSTITUTE	CY	Partner	
6	INSTITUT NATIONAL DE RECHERCHE POUR L'AGRICULTUR FR		Partner	
7	INSTITUT NATIONAL D'ENSEIGNEMENT SUPERIEUR POUR FR		Affiliated	
8	CENTRE DE COOPERATION INTERNATIONALE EN RECHERCFR		Partner	
9	AGROOF	FR	Partner	
10	ARVALIS INSTITUT DU VEGETAL	FR	Partner	
11	POLITECNICO DI MILANO	IT	Partner	
12	CONSIGLIO PER LA RICERCA IN AGRICOLTURA E L'ANALISI IT		Partner	
13	LEGAMBIENTE LOMBARDIA ONLUS	Italy	Partner	
14	UNIVERSITA DEGLI STUDI DI MILANO	IT	Partner	
15	ENTE REGIONALE PER I SERVIZI ALL' AGRICOLTURA E ALLE IT		Partner	
16	IRIS SOC. COOP. AGR. DI PRODUZIONE E LAVORO P. A.	IT	Partner	
17	Institut National Agronomique de Tunisie	TN	Partner	
18	AGENCE DE VULGARISATION ET DE LA FORMATION AGRIC TN		Partner	
19	EZZAYRA SOLUTIONS	TN	Partner	
20	UNIVERSITE 8 MAI 1945 GUELMA	DZ	Partner	
21	BNEDER	DZ	Partner	

Administrative forms

Proposal ID **101219087**

Acronym **Nemesis**

#	Participating Organisation Legal Name	Country	Role	Action
22	TM BLINACON	Algeria	Partner	
23	UNIVERSIDAD DE MURCIA	ES	Partner	
24	ASOCIACION VALENCIANA DE AGRICULTORES	ES	Partner	
25	EI JUNQUERO SA	ES	Partner	
26	FEDERACION DE COOPERATIVAS AGRARIASDE MURCIA S (ES		Partner	
27	ODIN SOLUTIONS SOCIEDAD LIMITADA	ES	Partner	
28	DIABALKANIKO KENTRO PERIBALLONTOS	Greece	Partner	
29	MAGGIOLI SPA	IT	Partner	
30	INTERNATIONAL CENTRE FOR RESEARCH IN AGROFOREST	Kenya	Partner	
31	ADELPHI RESEARCH GEMEINNUTZIGE GMBH	DE	Partner	
32	UNIVERSITY OF DUNDEE	UK	Partner	
33	EUROPEAN RURAL DEVELOPMENT NETWORK	PL	Partner	
34	CIBOS INNOVATION IDIOTIKI KEFALAIOUCHIKI ETAIREIA	EL	Partner	
35	ELLINOGERMANIKI AGOGI SCHOLI PANAGEA SAVVA AE	EL	Partner	
36	EURICE EUROPEAN RESEARCH AND PROJECT OFFICE GMB DE		Partner	
37	Mistawasis Nehiyawak	CA	Partner	
38	UNIVERSITAET ST. GALLEN	CH	Associated	
39	UNIVERSITE DE GENEVE	CH	Associated	

Organisation data

PIC	Legal name
894252701	ERATOSTHENES CENTRE OF EXCELLENCE

Short name: ERATOSTHENES CENTRE OF EXCELLENCE

Address

Street	SARIPOLOU 2-8. ACHILLEOS BUILDING
Town	LIMASSOL
Postcode	3036
Country	Cyprus
Webpage	www.eratosthenes.org.cy

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name Environment & Climate Department not applicable

Same as proposing organisation's address

Street 82 Franklin Roosevelt

Town Limassol

Postcode 3012

Country Cyprus

Department 2

Department name Resilient Society Department not applicable

Same as proposing organisation's address

Street 82 Franklin Roosevelt

Town Limassol

Postcode 3012

Country Cyprus

Department 3

Department name Big Earth Data Analytics Department not applicable

Same as proposing organisation's address

Street 82 Franklin Roosevelt

Town Limassol

Postcode 3012

Country Cyprus

Administrative forms

Links with other participants

Type of link	Participant
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Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Prof.**

Gender Woman Man Non Binary

First name* **Diofantos**

Last name* **Hadjimitsis**

E-Mail* **d.hadjimitsis@eratosthenes.org.cy**

Position in org. **Managing Director**

Department **ERATOSTHENES CENTRE OF EXCELLENCE**

Same as organisation name

Same as proposing organisation's address

Street **82 Franklin Roosevelt**

Town **Limassol**

Post code **3012**

Country **Cyprus**

Website **https://eratosthenes.org.cy/**

Phone **+35725002548**

Phone 2 *+XXX XXXXXXXXX*

Other contact persons

First Name	Last Name	E-mail	Phone
Ioannis	Varvaris	ioannis.varvaris@eratosthenes.org.cy	+35796937764
Kyriacos	Themistocleous	k.themistocleous@eratosthenes.org.cy	+35725002500
Silas	Michaelides	silas.michaelides@eratosthenes.org.cy	+35799493072
Kleopatra	Georgiou	accounting@eratosthenes.org.cy	+35725002908
Theofilos	Antoniou	theofilos.antoniou@eratosthenes.org.cy	+35725002548

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Prof	Diofantos	Hadjimitsis	Man	Cyprus	d.hadjimitsis@eratosthenes.org.cy	Category A Top grade re	Leading	0000-0002-2684-547X	Orcid ID
Dr	Silas	Michaelides	Man	Cyprus	silas.michaelides@eratosthenes.org.cy	Category A Top grade re	Team member	0000-0002-3853-5065	Orcid ID
Dr	Kyriacos	Themistocleous	Man	Cyprus	k.themistocleous@eratosthenes.org.cy	Category A Top grade re	Team member	0000-0003-4149-8282	Orcid ID
Dr	Ioannis	Varvaris	Man	Greece	ioannis.varvaris@eratosthenes.org.cy	Category B Senior resea	Team member	0000-0001-7058-4302	Orcid ID
Dr	Marinos	Eliades	Man	Cyprus	marinos.eliades@eratosthenes.org.cy	Category B Senior resea	Team member	0000-0002-0715-9511	Orcid ID
Dr	Christodoulos	Mettas	Man	Cyprus	christodoulos.mettas@eratosthenes.org.cy	Category B Senior resea	Team member	0000-0002-7262-8556	Orcid ID
Dr	Michalis	Mavrovouniotis	Man	Cyprus	michalis.mavrovouniotis@eratosthenes.org.cy	Category B Senior resea	Team member	0000-0002-5281-4175	Orcid ID
Mr	Stelios	Neophytides	Man	Cyprus	stelios.neophytides@eratosthenes.org.cy	Category C Recognised	Team member	0000-0002-1678-1556	Orcid ID
Ms	Maria	Prodromou	Woman	Cyprus	maria.prodromou@eratosthenes.org.cy	Category C Recognised	Team member	0000-0003-2974-8832	Orcid ID
Dr	Christiana	Papoutsas	Woman	Cyprus	christiana.papoutsas@eratosthenes.org.cy	Category B Senior resea	Team member	0000-0002-2177-7391	Orcid ID
Dr	Rodanthi-Elisavet	Mamouri	Woman	Greece	rodanthi.mamouri@eratosthenes.org.cy	Category B Senior resea	Team member	0000-0003-4836-8560	Orcid ID

Administrative forms

Dr	Argyro	Nisantzi	Woman	Greece	argyro.nisantzi@eratosthenes.org.cy	Category B Senior research	Team member	0000-0001-8159-248X	Orcid ID
Prof	Menelaos	Stavrinides	Man	Cyprus	menelaos.stavrinides@eratosthenes.org.cy	Category A Top grade research	Team member	0000-0002-6459-1941	Orcid ID
Ms	Despoina	Makri	Woman	Greece	despoina.makri@eratosthenes.org.cy	Category D First stage research	Team member	0009-0002-6217-9328	Orcid ID
Dr	Marios	Tzouvaras	Man	Greece	marios.tzouvaras@eratosthenes.org.cy	Category B Senior research	Team member	0000-0002-4543-3112	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Diofantos Hadjimitsis, et al, "The ERATOSTHENES Centre of Excellence (ECoE) as a digital innovation hub for Earth observation", Proc. SPIE 11418, Detection and Sensing of Mines, Explosive Objects, and Obscured Targets XXV, 114180F (24 April 2020); https://doi.org/10.1117/12.2567070.</i>
Publication	<i>Eliades, M.; Neophytides, S.; Mavrovouniotis, M.; Panagiotou, C.F.; Anastasiadou, M.N.; Varvaris, I.; Papoutsas, C.; Bachofer, F.; Michaelides, S.; Hadjimitsis, D. Temporal Dynamics of Global Barren Areas between 2001 and 2022 Derived from MODIS Land Cover Products. Remote Sens. 2024, 16, 3317. https://doi.org/10.3390/rs16173317</i>
Publication	<i>Eliades, M.; Michaelides, S.; Evagorou, E.; Fotiou, K.; Fragkos, K.; Leventis, G.; Theocharidis, C.; Panagiotou, C.F.; Mavrovouniotis, M.; Neophytides, S.; et al. Earth Observation in the EMMENA Region: Scoping Review of Current Applications and Knowledge Gaps. Remote Sens. 2023, 15, 4202. https://doi.org/10.3390/rs15174202</i>
Publication	<i>Erik Elsen, L. C Stringer,..... M. Christoforou,...., C. Papoutsas, et al. 2020, Advances in understanding and managing sudden ecosystem shifts in Mediterranean drylands. Ecology and Evolution. https://doi.org/10.3389/fevo.2020.561101</i>
Publication	<i>Varvaris I., Pittaki Z., Børgesen C., Iversen B. Ibid. (2021) Parameterization of two-dimensional approaches in HYDRUS-2D. Part 2: Solute transport on field and column-scale. https://doi.org/10.1002/saj2.20262.</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>EXCELSIOR (H2020) https://excelsior2020.eu/</i>	<i>Through the 'ERATOSTHENES: Excellence Research Centre for Earth Surveillance and Space-Based Monitoring of the Environment' with the acronym: 'EXCELSIOR', Horizon 2020 Widespread Teaming Phase 2 project, a new, autonomous and self-sustained Centre of Excellence entitled as 'ERATOSTHENES Centre of Excellence (ECoE)' has been created in early 2020. ECoE is implementing a course of actions to progressively achieve full economic sustainability in terms of staff, assets and operations.</i>
<i>CARBONICA (Horizon Europe)</i>	<i>CARBONICA aims to establish a Excellence Hub by connecting the innovation ecosystems of Cyprus, Greece and North Macedonia, while enhancing their TRL as service providers, based on cutting-edge technologies (Earth Observation; in situ data; digital agriculture etc.) in carbon farming. The main scope is to establish access to excellence to all relevant stakeholders, as well as strengthen regional innovation capacity guided by long-term joint R&I strategy in the carbon farming field.</i>
<i>EDAFOS (ESA-PECS)</i>	<i>Project 'EDAFOS' aims to develop test and validate a Geographical Information System (GIS) based platform to assess and map desertification and land degradation risk. The development of the EDAFOS platform will be based on the evolution of the DeWIS and Medalus methods and will have an open architecture to allow the seamless expansion and deployment of the Tool at large geospatial scales.</i>
<i>CROSS & CROSS II (ESA-PECS)</i>	<i>CROSS and CROSS II projects, funded through the ESA-PECS call aim to develop a fully remote sensing-based CAP monitoring system for the needs of the Cyprus Agricultural Payments Organization, through the adoption and adaptation of Sen4CAP, and the integration of other ground data, UAV campaigns and ML-based processing techniques.</i>
<i>Nostradamus (Horizon Europe)</i>	<i>Nostradamus, in line with the Farm to Fork strategy, the Common Agricultural Policy, and the European strategy for data, will design, develop, and evaluate a scalable and robust platform for the online and real-time harvesting of valuable information derived from different data sources for developing several agricultural applications. Based on European and four national multidimensional datasets, an automated pipeline regarding the data acquisition, storage, and pre-processing, will be developed</i>

Administrative forms

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<i>Digital Innovation Hub</i>	<i>The ECoE runs a digital innovation hub filling the gap from research ideas to products and services</i>
<i>Ground Receiving Satellite Station</i>	<i>The ECoE is currently procuring a Ground Receiving Satellite Station that can be used for the purposes of the project</i>
<i>Infrastructure for soil health monitoring</i>	<i>In-situ and laboratory equipment for soil health descriptors</i>
<i>SNAP, ENVI, ERDAS Imagine, ArcGIS, QGIS</i>	<i>Computer lab with Remote Sensing and GIS related software for processing optical and radar satellite images, and monitoring and mapping purposes respectively</i>
<i>Field Spectroscopy</i>	<i>The Centre of Excellence is currently procuring a series of field spectroscopy equipment that can be used for the purposes of the project</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999434845	YPOURGEIO GEORGIAS, AGROTIKIS ANAPTYXIS KAI PERIVALLONTOS

Short name: MINISTRY OF AGRICULTURE, RURAL DEVELOPMENT AND ENVIRONMENT OF CYPRUS

Address

Street	Athalassa
Town	NICOSIA
Postcode	1417
Country	Cyprus
Webpage	www.moa.gov.cy

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	RURAL DEVELOPMENT	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	Athalassa	
Town	Nicosia	
Postcode	1500	
Country	Cyprus	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **George**

Last name* **Papadauid**

E-Mail* **papadauid@ari.gov.cy**

Position in org. **Research Officer A'**

Department **Agricultural Development**

Same as organisation name

Same as proposing organisation's address

Street **Athalassa**

Town **Nicosia**

Post code **1500**

Country **Cyprus**

Website **https://moa.gov.cy/**

Phone **+35799329351**

Phone 2 **+XXX XXXXXXXXX**

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	George	Papadavid	Man	Cyprus	gpapadavid@ari.moa.gov.cy	Category B Senior resea	Leading	0000-0002-6102-1732	Orcid ID
Dr	Panagiotis	Dalias	Man	Greece	pdalias@ari.moa.gov.cy	Category B Senior resea	Team member	0000-0002-5697-0239	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input checked="" type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Papadavid G. and Hadjimitsis H. (2018). Atmospheric Effects on Spatial Crop Yield Modelling Using Landsat's Imagery. J Agri Res 2018, 3(6): p. 181.</i>
Publication	<i>Christou A., George Papadavid, Damianos Neocleous, Panagiotis Dalias, Vassilis Fotopoulos, Costas Michael, Josep Maria Bayona, Benjamin Piña, Despo Fatta-Kassinou. Ranking of crop plants based on their potential to uptake and accumulate contaminants of emerging concern. Environmental Research 170, p. 422–432 https://doi.org/10.1016/j.envres.2018.12.048</i>
Publication	<i>Georgios Kountios, Athanasios Ragkos, Thomas Bournaris, Georgios Papadavid, Anastasios Michailidis. 2017. Educational needs and perceptions of the sustainability of precision agriculture: survey evidence from Greece. Precision Agriculture. Springer Science+Business Media, LLC 2017. DOI 10.1007/s11119-017-9537-2</i>
Publication	<i>Papadavid G, Toullos L (2017). The use of earth observation methods for estimating regional crop evapotranspiration and yield for water footprint accounting. The Journal of Agricultural Science 0, 1–18. https://doi.org/10.1017/S0021859617000594</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
CASCADE	<i>"CASCADE" (Catastrophic Shifts in Drylands and Ecosystems) in EU - FP7 Project – Associated Researcher</i>
RESOURCE	<i>Providing services for management of natural resources (RE-SOURCE) – MED-BALKAN INTERREG. Lead researcher</i>
ADAPT	<i>Adaptation to Climate change Impacts on the Mediterranean islands' Agriculture. LIFE PROJECT – Agricultural research Institute 2016. –Associated researcher</i>
AgrOasis	<i>Regenerative approaches for building climate change resilience in EU agricultural regions prone to desertification</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999597223	TECHNOLOGIKO PANEPISTIMIO KYPROU

Short name: CYPRUS UNIVERSITY OF TECHNOLOGY

Address

Street	ARCHBISHOP KYPRIANOS 31 SAVINGS COOPERA
Town	LEMESOS
Postcode	3036
Country	Cyprus
Webpage	www.cut.ac.cy

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	30/05/2008 - no
SME self-assessment	unknown
SME validation	30/05/2008 - no

Administrative forms

Departments carrying out the proposed work

Department 1

Department name Agricultural science, biotechnology and food science not applicable

Same as proposing organisation's address

Street ARCHBISHOP KYPRIANOS 31 SAVINGS COOPERAT

Town LEMESOS

Postcode 3036

Country Cyprus

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title Dr

Gender Woman Man Non Binary

First name* **Michalakis**

Last name* **Christoforou**

E-Mail* **m.christoforou@cut.ac.cy**

Position in org. Academic - Special Teaching Staff

Department Agricultural science, biotechnology and food science

Same as organisation name

Same as proposing organisation's address

Street ARCHBISHOP KYPRIANOS 31 SAVINGS COOPERATIVE BANK BUILDING 3RD FLO

Town LEMESOS Post code 3036

Country Cyprus

Website https://www.cut.ac.cy/

Phone +35725002484 Phone 2 +XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	MICHALAKIS	CHRISTOFOROU	Man	Cyprus	m.christoforou@cut.ac.cy	Category B Senior researcher	Leading	0000-0002-6217-5987	Orcid ID
Mrs	Andria	Tsalakou	Woman	Cyprus	am.tsalakou@edu.cut.ac.cy	Category D First stage researcher	Team member	0009-0008-2452-4462	Orcid ID
Mrs	Styliana	Efstathiou	Woman	Cyprus	sp.efstathiou@edu.cut.ac.cy	Category D First stage researcher	Team member	0009-0006-4596-1122	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input checked="" type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>GREEN GRAPES HANDBOOK</i> This user handbook is intended to be a practical reference tool for vine nurserymen and winegrowers who are preparing to develop their own vineyard plant protection strategy without losing sight of environmental protection https://www.lifegreengrapes.eu/wp-content/uploads/2021/11/Life-GREEN-GRAPES-Manualeoperativo-Operational-Handbook-ITA-ENG.pdf
Publication	How does land management contribute to the resilience of Mediterranean forests and rangelands? A participatory assessment https://doi.org/10.1002/ldr.3104
Publication	Advances in understanding and managing catastrophic ecosystem shifts in Mediterranean ecosystems https://doi.org/10.3389/fevo.2020.561101
Publication	Rapid detection and quantification of viable potato cyst nematodes using qPCR in combination with propidium monoazide Doi: 10.1111/ppa.12193
Publication	Papachristoforou, A., Prodromou, M., Hadjimitsis, D. and Christoforou, M., 2023. Detecting and distinguishing between apicultural plants using UAV multispectral imaging. <i>PeerJ</i> , 11, p.e15065.

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
CASCADE FP7-ENVIRONMENT Grant agreement ID:28306	The project linked applied and theoretical ecology at multiple scales with analyses of human-environment-climate relations and stakeholder engagement in Mediterranean drylands to address three key questions: i) What are sudden ecosystem shifts in drylands and how do different pressures lead to such shifts? ii) What processes happen in the soil and vegetation during a sudden shift? iii) How can we manage vulnerable ecosystems better? https://cordis.europa.eu/project/id/283068/reporting
GREEN GRAPES Gr Agr n. LIFE16 ENV / IT / 000566	Evaluation of the effectiveness of application protocols for integrated and organic viticulture, integrating their use with disease forecast models and suitable agronomic techniques. Protocols were evaluated on the whole production chain: from vine nursery, to vineyard for wine grapes and vineyard for table grapes. The goal was to reduce the quantities of pesticides used in the vineyards through the use of techniques of the vineyard and nursery www.lifegreengrapes.eu/
Black to the future blacktothefuture.eu No 21217	Black to the future aims to implement sustainable agriculture practices in European areas at high risk of desertification like Mediterranean regions such as Italy, Cyprus and Spain, Italy. Additionally it aims to develop innovative vertical farming systems thanks to the collaboration with an innovative startup in Belgium. This will make it possible to share knowledge between farmers from different European regions in order to innovate and advance in the European agricultural system
Carbonica No.101087233 https://carbonica-hub.eu/	Carbonica aims to introduce Carbon Farming techniques in Greece, North Macedonia and Cyprus. Carbonica Excellence Hub will be connect and strengthen the innovation ecosystems of the 3 Countries by streamlining the R&I between them to bolster the adoption of CFA, by coming up with new business models for the agrofood industry that would take into account carbon sequestration, by bringing together policy makers and civil society, all the while fostering the reduction of their carbon footprint
GOOD No. 101083589	GOOD will create and evaluate Agroecological Weed Management (AWM) systems, and demonstrate that AWM adoption enhances sustainability and resilience of cropping systems. The main ambition is to foster the agroecological transition for weed management across Europe. Living-Labs (LL) will be co-created with stakeholders and established in 6 EU pedoclimatic conditions in both annual and perennial crops to promote AWM practices in conventional, organic and mixed farming systems.

Administrative forms

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<i>UAV multispectral</i>	<i>Multispectral drone with 5 sensors (RGB, Green, Red, Red edge, NIR) plus RTK</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
883385791	DEPI SPECTRUM (COMPUTING % TELECOMMUNICATION) LTD

Short name: SPECTRUM

Address

Street	Dramas 36
Town	Paralimni, Cyprus
Postcode	5290
Country	Cyprus
Webpage	www.spectrum.com.cy

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	26/09/2023 - yes
SME self-assessment	31/12/2022 - yes
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title Mr

Gender Woman Man Non Binary

First name* **Demetris**

Last name* **Demetriou**

E-Mail* **demetris.demetriou@spectrum.com.cy**

Position in org. Manager

Department DEPI SPECTRUM (COMPUTING % TELECOMMUNICATION) LTD

Same as organisation name

Same as proposing organisation's address

Street Dramas 36

Town Paralimni, Cyprus Post code 5290

Country Cyprus

Website https://spectrum.com.cy/

Phone +35723725780 Phone 2 +XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	Demetris	Demetriou	Man	Cyprus	demetris.demetriou@spectrum.com.cy	Category B Senior research	Leading		
Mr	Pieros	Tzamas	Man	Cyprus	piros.tzamas@spectrum.com.cy	Category C Recognised	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Service	Web-based platform for the Ministry of Labour and Social Insurance for monitoring Environmental Radioactivity in Cyprus https://radiation.dli.mlsi.gov.cy/
Service	Web-based platform and mobile application after hardware infrastructure design implementation for the Ministry of Labour and Social Insurance for monitoring Air Quality in Cyprus https://www.airquality.dli.mlsi.gov.cy/
Service	Web-based platform for Eratosthenes Centre of Excellence for Agroclimatic Observations Tool utilizing data acquired from meteorological stations of the Department of Meteorology of Cyprus, the Copernicus Atmosphere Monitoring Service, Satellite Imagery from Sentinel-2, LPIS from the Cyprus Agriculture Payment Organization and in-situ observations https://agrinexushub.eratosthenes.org.cy/

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
965934440	THE CYPRUS INSTITUTE

Short name: THE CYPRUS INSTITUTE

Address

Street	CONSTANTINOU KAVAFI 20
Town	NICOSIA
Postcode	2121
Country	Cyprus
Webpage	https://www.cyi.ac.cy/

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	31/12/2021 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Energy Environment and Water Research Center	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	CONSTANTINO KAVAFI 20	
Town	NICOSIA	
Postcode	2121	
Country	Cyprus	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title Dr

Gender Woman Man Non Binary

First name* **Christos**

Last name* **Zoumides**

E-Mail* **c.zoumides@cyi.ac.cy**

Position in org. Research Scientist

Department Energy Environment and Water Research Center, The Cyprus Institute

Same as organisation name

Same as proposing organisation's address

Street CONSTANTINOU KAVAFI 20

Town NICOSIA

Post code 2121

Country Cyprus

Website https://www.cyi.ac.cy/

Phone +35722208607

Phone 2 +XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Adriana	Bruggeman	a.bruggeman@cyi.ac.cy	+357 22208748
Michael	Papadopoulos	m.papadopoulos@cyi.ac.cy	+357 22208637
Vassilios	Tsakalos	v.tsakalos@cyi.ac.cy	+357 22208798
Stefanos	Christodoulou	head.accounts@cyi.ac.cy	+357 22208620
Hakan	Djuma	h.djuma@cyi.ac.cy	+357 22208607

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Prof	Adriana	Bruggeman	Woman	Netherlands	a.bruggeman@cyi.ac.cy	Category B Senior research	Team member	0000-0002-6475-5221	Orcid ID
Dr	Christos	Zoumides	Man	Cyprus	c.zoumides@cyi.ac.cy	Category B Senior research	Leading	0000-0003-0998-3878	Orcid ID
Dr	Hakan	Djuma	Man	Cyprus	h.djuma@cyi.ac.cy	Category B Senior research	Team member	0000-0001-8143-6903	Orcid ID
Mrs	Niovi	Christodoulou	Woman	Cyprus	n.christodoulou@cyi.ac.cy	Category D First stage research	Team member		
Dr	Andreas	Savvides	Man	Cyprus	a.savvides@cyi.ac.cy	Category B Senior research	Team member	0000-0001-7585-3313	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Djuma, H., A. Bruggeman, C. Camera, C. Zoumides. 2017. Combining qualitative and quantitative methods for soil erosion assessments: an application in a sloping Mediterranean watershed, Cyprus. Land Degradation and Development 28(1): 243–254. https://doi.org/10.1002/ldr.2571</i>
Publication	<i>Djuma, H., Bruggeman, A., Zissimos, A., Christoforou, I., Eliades, M., Zoumides, C. 2020. The effect of agricultural abandonment and mountain terrace degradation on soil organic carbon in a Mediterranean landscape. Catena 195, 104741. https://doi.org/10.1016/j.catena.2020.104741</i>
Publication	<i>Camera, C., Djuma, H., Bruggeman, A., Zoumides, C., Eliades, M., Charalambous, K., Abate, D. and Faka, M., 2018. Quantifying the effectiveness of mountain terraces on soil erosion protection with sediment traps and dry-stone wall laser scans. Catena, 171, pp.251-264. https://doi.org/10.1016/j.catena.2018.07.017</i>
Publication	<i>Siakou, M., A. Bruggeman, M. Eliades, C. Zoumides, H. Djuma, M.C. Kyriacou, M.G. Emmanouilidou, A. Spyros, E. Manolopoulou, A. Moriana. 2021. Effects of deficit irrigation on 'Koroneiki' olive tree growth, physiology and olive oil quality at different harvest dates. Agricultural Water Management, 258(1): 107200. https://doi.org/10.1016/j.agwat.2021.107200</i>
Publication	<i>Zoumides, C., Bruggeman, A., Giannakis, E., Kyriakou, N. 2022. A Future for Mountain Terraces: Experiences from Mediterranean Wineries. Mountain Research and Development, 42(3): R35–R49. https://doi.org/10.1659/MRD-JOURNAL-D-21-00031.1</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
TERRASAFE	<i>TERrestrial Resilience and RestorAtion Strategies for (semi) Arid and Fragile Ecosystems through a multi-actor approach, Horizon Europe (2024 - 2029)</i>
Safe-H2O-Farm	<i>Innovative farm strategies that integrate sustainable N fertilization, water management and pest control to reduce water and soil pollution and salinization in the Mediterranean, PRIMAS2-2022 (2023 - 2026)</i>
REACT4MED	<i>Inclusive outscaling of agro-ecosystem restoration actions for the Mediterranean, PRIMA S1-2021 (2022-2025)</i>
FLUXMED	<i>Strategies for increasing the water use efficiency of semi-arid Mediterranean agrosilvopastoral systems under climate change, Water Joint Programming Initiative (2019-2023)</i>
RECARE	<i>Preventing and remediating degradation of soils in Europe through land care, FP7-ENV (2013-2018)</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
Soil and water field equipment	<i>Soil augers, soil moisture sensors, flow meters, meteorological stations, infiltrometer, sediment traps, eddy covariance system, canopy analyser (LAI), leaf conductance sensors, leaf water potential pressure chamber</i>
Soil and water Laboratory	<i>Soil water analysis, soil texture, soil moisture, soil organic carbon, pH, Electrical Conductivity and Facility for Chemical Analysis</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999993274	INSTITUT NATIONAL DE RECHERCHE POUR L'AGRICULTURE, L'ALIMENTATION ET L'ENVIRONNEMENT
Short name: INRAE	
Address	
Street	147 RUE DE L'UNIVERSITE
Town	PARIS CEDEX 07
Postcode	75007
Country	France
Webpage	www.inrae.fr
Specific Legal Statuses	
Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes
SME Data	
Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.	
SME self-declared status	10/07/2018 - no
SME self-assessment	unknown
SME validation	25/09/2008 - no

Administrative forms

Departments carrying out the proposed work

Department 1

Department name UMR Eco&Sols not applicable

Same as proposing organisation's address

Street Bâtiment 12 2 place Viala

Town Montpellier

Postcode 34060

Country France

Department 2

Department name UMR ABSys not applicable

Same as proposing organisation's address

Street 2 Place Viala

Town Montpellier

Postcode 34060

Country France

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **Philippe**

Last name* **Hinsinger**

E-Mail* **philippe.hinsinger@inrae.fr**

Position in org. **Researcher**

Department **UMR Eco&Sols**

Same as organisation name

Same as proposing organisation's address

Street **2 place Viala**

Town **Montpellier**

Post code **34060**

Country **France**

Website **http://www.umar-ecosols.fr/en/**

Phone **+33499612249**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Camille	Buffeteau	camille.buffeteau@inrae.fr	+33617061182

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Isabelle	Bertrand	Woman	France	Isabelle.bertrand@inrae.fr	Category A Top grade re	Team member	0000-0002-2233-631X	Orcid ID
Dr	Mickaël	Hedde	Man	France	mickael.hedde@inrae.fr	Category A Top grade re	Team member	0000-0002-6733-3622	Orcid ID
Dr	Philippe	Hinsinger	Man	France	philippe.hinsinger@inrae.fr	Category A Top grade re	Leading	0000-0001-5458-1259	Orcid ID
Dr	Jérôme	Ngao	Man	France	jerome.ngao@inrae.fr	Category B Senior resea	Team member	0000-0003-4587-816X	Orcid ID
Dr	Claire	Marsden	Woman	France	claire.marsden@supagro.fr	Category B Senior resea	Team member	0000-0003-0959-5138	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input checked="" type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Siegwart L, Jourdan C, Piton G, Sugihara S, Van den Meersche K, Bertrand I (2023). Root distribution and properties of a young alley-cropping system: effects on soil carbon storage and microbial activity. <i>Plant and Soil</i> 482. DOI 10.1007/s11104-022-05714-9
Publication	Bloor J, Si-Moussi S, Taberlet P, Carrère P, Hedde M (2021). Analysis of complex trophic networks reveals the signature of land-use intensification on soil communities in agroecosystems. <i>Scientific Reports</i> 11, DOI ?10.1038/s41598-021-97300-9?.
Publication	Guillot E, Bertrand I, Rumpel C, Gomez C, Arnal D, Abadie J, Hinsinger P (2021). Spatial heterogeneity of soil quality within a Mediterranean alley cropping agroforestry system: Comparison with a monocropping system. <i>European Journal of Soil Biology</i> 105. DOI 10.1016/j.ejsobi.2021.103330.
Publication	Sauvadet M, Trap J, Damour G, Plassard C, van den Meersche K, Achard R, Allinne C, Autfray P, Bertrand I, Blanchart E, Deberdt P, Enock S, Essobo J-D, Freschet GT, Hedde M, de Melo Virginio Filho E, Rabary B, Rakotoarivelo M, Randriamanantsoa R, Rhino B, Ripoché A, Rosalie E, Saj S, Becquer T, Tixier P, Harmand JM (2021). Agroecosystem diversification with legumes or non-legumes improves differently soil fertility according to soil type. <i>Science of the Total Environment</i> 795. DOI ?10.1016/j.
Publication	D'Hervilly C, Marsden C, Bertrand I, Hedde M (2020) Sown understory vegetation strips impact soil chemical fertility, associated microorganisms and macro-invertebrates in two temperate alley cropping systems. <i>Agroforestry Systems</i> 94. DOI 10.1007/s10457-020-00501-w

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
(EJP SOIL) MIXROOT-C	2021-2024 (coordination) Are mixed species systems fostering belowground C inputs and C sequestration? https://mixmaxroot.com/ , 13 partners, 2M€ Funding : EU
(H2020 multi-actor) SolACE	2017-2022 (coordination) Solutions for improving Agroecosystem and Crop Efficiency for water and nutrient use https://www.solace-eu.net 25 partners, 6M€ Funding : EU
DSCATT	2019-2024 (co-coordination) Agricultural intensification and soil carbon sequestration in tropical and temperate farming systems https://dscatt.net 1.7M€ Funding: Fondation Agropolis and Total
(PIA) AGRO-ECO SOL	2019-2024 (co-coordination) Technical and economic development of a value chain for diagnosis and advisory tools for the agroecological management of soils https://aurea.eu/en/innovations/agro-eco-sol/ 5437k€ Funding: PIA ADEME
(ANR) SOILWARM	2022-2025 (WP leadership) How will warming-induced changes of the chole-soil affect soil biota interactions : implications for CNP cycling 632k€

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
DIAMS Research Infrastructure	Research infrastructure made of a 7-ha experimental site comparing agroforestry, forestry and arable land uses at two levels of water stress, with full monitoring of carbon, nutrient and water stocks and fluxes, as well as soil health indicators, with a particular focus on soil biodiversity, since 2
ECOTROP Platform	Experimental and analytical platform to experiment and analyse soils according to quarantine regulations (Level 2)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
895461515	INSTITUT NATIONAL D'ENSEIGNEMENT SUPERIEUR POUR L'AGRICULTURE, L'ALIMENTATION ET L'ENVIRONNEMENT

Short name: INSTITUT AGRO

Address

Street	42 RUE SCHEFFER
Town	PARIS 16
Postcode	75116
Country	France
Webpage	https://www.institut-agro.fr/en

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	01/01/2020 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier

Administrative forms

Role of participating organisation in the project

- | | |
|---|--------------------------|
| Project management | <input type="checkbox"/> |
| Communication, dissemination and engagement | <input type="checkbox"/> |
| Provision of research and technology infrastructure | <input type="checkbox"/> |
| Co-definition of research and market needs | <input type="checkbox"/> |
| Civil society representative | <input type="checkbox"/> |
| Policy maker or regulator, incl. standardisation body | <input type="checkbox"/> |
| Research performer | <input type="checkbox"/> |
| Technology developer | <input type="checkbox"/> |
| Testing/validation of approaches and ideas | <input type="checkbox"/> |
| Prototyping and demonstration | <input type="checkbox"/> |
| IPR management incl. technology transfer | <input type="checkbox"/> |
| Public procurer of results | <input type="checkbox"/> |
| Private buyer of results | <input type="checkbox"/> |
| Finance provider (public or private) | <input type="checkbox"/> |
| Education and training | <input type="checkbox"/> |
| Contributions from the social sciences or/and the humanities | <input type="checkbox"/> |
| Other
If yes, please specify: (Maximum number of characters allowed: 50) | <input type="checkbox"/> |

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement

Short description (Max 500 characters)

--	--

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity

Short description (Max 500 characters)

--	--

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment

Short description (Max 300 characters)

--	--

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999993565	CENTRE DE COOPERATION INTERNATIONALE EN RECHERCHE AGRONOMIQUE POUR LEDEVELOPPEMENT - C.I.R.A.D

Short name: CIRAD

Address

Street	RUE SCHEFFER 42
Town	PARIS
Postcode	75016
Country	France
Webpage	www.cirad.fr

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name UMR Eco&Sols not applicable

Same as proposing organisation's address

Street 2 place Viala

Town Montpellier

Postcode 34060

Country France

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **Christophe**

Last name* **JOURDAN**

E-Mail* **christophe.jourdan@cirad.fr**

Position in org. Deputy Director of Eco&Sols

Department UMR Eco&Sols – Department PERSYST

Same as organisation name

Same as proposing organisation's address

Street 2, Place Pierre Viala

Town MONTPELLIER

Post code 34060

Country France

Website <http://www.umr-ecosols.fr/en/>

Phone +33499612382

Phone 2 +XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Coraline	DANIEL	coraline.daniel@cirad.fr	+33467614970

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Christophe	JOURDAN	Man	France	Christophe.jourdan@cirad.fr	Category A Top grade re	Leading	0000-0001-9857-3269	Orcid ID
Dr	Céline	BLITZ-FRAYRET	Woman	France	celine.blitz@cirad.fr	Category B Senior resea	Team member	0009-0003-1169-8168	Orcid ID
Dr	Jim	FELIX-FAURE	Man	France	jim.felix-faure@cirad.fr	Category C Recognised	Team member	0000-0002-7995-168X	Orcid ID
Dr	Amandine	GERMON	Woman	France	amandine.germon@cirad.fr	Category C Recognised	Team member	0000-0001-8687-294X	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input checked="" type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Siegwart, L., Bertrand, I., Roupsard, O., & Jourdan, C. (2023). Contribution of tree and crop roots to soil carbon stocks in a Sub-Saharan agroforestry parkland in Senegal. <i>Agriculture, Ecosystems & Environment</i> , 352, 108524. https://doi.org/10.1016/j.agee.2023.108524
Publication	Pruvost E, Tulet H, Delort E, Shokouh GS, Montesinos P, Magnier B, Jourdan C, Belaud E, and Hedde M. 2022 "Invertebrates Detection with YOLOv5: Towards Study of Soil Organisms Using Deep Learning," 2022 10th European Workshop on Visual Information Processing (EUVIP), 2022, pp. 1-6, https://10.1109/EUVIP53989.2022.9922675
Publication	Siegwart L, Jourdan C, Piton G, Sugihara S, Van den Meersche K and Bertrand I 2023 Root distribution and properties of a young alley-cropping system: effects on soil carbon storage and microbial activity. <i>Plant and Soil</i> 482, 601-625. https://doi.org/10.1007/s11104-022-05714-9
Publication	Siegwart L, Bertrand I, Roupsard O, Duthoit M, Jourdan C. 2022. Root litter decomposition in a sub-Saharan agroforestry parkland dominated by <i>Faidherbia albida</i> . <i>Journal of Arid Environments</i> 198, 104696. https://doi.org/10.1016/j.jaridenv.2021.104696
Publication	Gning F, Jourdan C, Marone D, Ngom D and Ræbild A 2023 Root distribution of <i>Adansonia digitata</i> , <i>Faidherbia albida</i> and <i>Borassus akeassii</i> along a climate gradient in Senegal. <i>Agroforestry Systems</i> . https://doi.org/10.1007/s10457-023-00813-7

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
DSCATT	Soil carbon sequestration in farming systems in Southern France, Senegal and Zimbabwe. The project aims at (i) quantifying, understanding and modelling soil carbon sequestration dynamics at different scales: soil-plant or field, farm, landscape and territory, (ii) deliberating amongst stakeholders about soil carbon sequestration pathways, by iteratively designing and assessing options; and (iii) sharing knowledge, tools and experiences on soil carbon management options. https://dscatt.net/
CASSECS	Sahelian livestock farming and carbon footprint. The project aims to improve the assessment of the C balance of pastoral agro-livestock systems in order to better quantify their impacts on climate change and to develop livestock policies adapted to the Sahel. Specifically, (i) to produce knowledge and reference systems on GHG emission and C sequestration factors; (ii) to develop multi-scale C assessment tools and systems; (iii) co-designing sustainable mitigation options with agro-pastoralists.
RAMSES II	Roles of Agroforestry in sustainable intensification of small farms and food SEcurity for Socletles in West Africa. The aim of the project was to provide innovative intensification scenarios for the four most-represented cereal crop agroforestry parks in West Africa, while maximizing their adoption by smallholders. At the farm level, a bioeconomic model simulates management scenarios proposed by farmers. At the village-territorial level, all stakeholders will co-build realistic governance that c
SUSTAIN SAHEL	The project aims to promote practices which enhance soil quality and yields, build resilience towards climate change, and contribute to food security and better livelihoods. The project's approach is embedded within the themes of agroecology, organic agriculture and elements of conservation agriculture and was performed on seven pilot farm study sites in 2-3 geo-climatically stratified areas in West Africa, according to the farmers' diverse socio-economic situations. https://www.sustainsahel.net

Administrative forms

SCANORHIZE	<i>SCANORHIZE - A window on the ground. Three-year funded project -Agropolis Foundation & SATT-AxLR, 300 k€, 2019-2021 – dedicated to design an energy-autonomous-automated image acquisition device to observe and monitor the biological functioning of soils. The tool communicates via WiFi or 4G with a client-web platform hosting an automatic deep learning root recognition algorithm. Project manager.</i>
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Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
BIOFUNCTOOL	<i>Soil health assessment indicators. Biofunctool® aggregates 9 field and 'low-tech' indicators into a synthetic index to score soil health. https://www.cirad.fr/en/work-with-us/cirad-innov-solutions/products-and-services/biofuntool-soil-evaluation; https://hal.science/hal-02933563</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
958356315	AGROOF

Short name: AGROOF

Address

Street	424 C ROUTE D'ANDUZE
Town	BOISSET ET GAUJAC
Postcode	30140
Country	France
Webpage	https://agroof.net/

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	31/12/2018 - yes
SME self-assessment	31/12/2018 - yes
SME validation	13/02/2009 - yes

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	AGROOF	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	424 C ROUTE D'ANDUZE	
Town	BOISSET ET GAUJAC	
Postcode	30140	
Country	France	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Ms**

Gender Woman Man Non Binary

First name* **Camille**

Last name* **BERAL**

E-Mail* **beral@agroof.net**

Position in org. **Co manager**

Department **Research**

Same as organisation name

Same as proposing organisation's address

Street **424 C ROUTE D'ANDUZE**

Town **BOISSET ET GAUJAC**

Post code **30140**

Country **France**

Website **https://agroof.net/**

Phone **+33466568547**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Sébastien	DULIEU	dulieu@agroof.net	+33652166282

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Ms	Camille	BERAL	Woman	France	beral@agroof.net	Category B Senior resea	Leading	0000-0002-7694-6930	Orcid ID
Mr	Ambroise	MARTIN-CHAVE	Man	France	martin-chave@agroof.net	Category B Senior resea	Team member	0000-0002-1141-4458	
Mr	Fabien	LIAGRE	Man	France	liagre@agroof.net	Category B Senior resea	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Cardinael R., Hoeffner K., Chenu C., Chevallier T., Béral C., Dewisme A., Cluzeau D., 2019. Spatial variation of earthworm communities and soil organic carbon in temperate agroforestry. Poster. 4th World Congress on Agroforestry. 20-22 May 2019. Montpellier.</i>
Publication	<i>D'Hervilly C., Bertrand I., Capowiez Y., Béral C., Delapré-Cosset L., Marsden C., 2022. Seasonal variations in macrofauna distribution according to the distance from a herbaceous strip in a Mediterranean alley cropping plot. Applied Soil Ecology 170.</i>
Publication	<i>Cardinael R., Chevallier T., Cambou A., Béral C., Durand C., Barthès, B.G., Kouakoua, E., Dupraz, C., Chenu, C., 2017. Increased soil organic carbon stocks under agroforestry: A survey of six different sites in France. Agriculture, Ecosystems & Environment 236 :243-255.</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
ARBRATATOUILLE	<i>Participatory research program on market gardening agroforestry, coordinated by AGROOF, of which ECO&SOLS was a partner and financially supported by the Fondation de France from 2014 to 2020. Macrofauna and soil fertility were notably studied in different agroforestry modalities with a comparison between grassy strip and cultivated avenue. https://arbratatouille.projet-agroforesterie.net/</i>
AGRIPSOL	<i>Research program on carbon storage dynamics in agroforestry soils in field crops. This project was coordinated by AGROOF from 2012 to 2014 and financially supported by ADEME. ECO&SOLS was also a partner and studied the dynamics of carbon storage in the soil at different distances from tree rows, in around ten plots across France, and in connection with the biological activity of the soil. https://agripsol.projet-agroforesterie.net/</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
Terres de Roumassouze	<i>The Terres de Roumassouze is a piece of land located in Vézénobres in the Gard (France). They cover 11 ha and have one of the oldest and most diverse agroforestry tree populations in Europe. Today managed by AGROOF, this site hosts agricultural activities and is dedicated to experimentation in agrof</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
984708402	ARVALIS INSTITUT DU VEGETAL

Short name: ARVALIS

Address

Street	RUE JOSEPH ET MARIE HACKIN 3
Town	PARIS
Postcode	75116
Country	France
Webpage	http://www.arvalis.fr

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	10/12/2003 - no
SME self-assessment	unknown
SME validation	10/12/2003 - no

Administrative forms

Departments carrying out the proposed work

Department 1

Department name Arvalis Gréoux les Bains not applicable

Same as proposing organisation's address

Street Route de Vinon, Le Plan

Town Gréoux les Bains

Postcode 04800

Country France

Department 2

Department name Arvalis Etoile sur Rhône not applicable

Same as proposing organisation's address

Street Ferme expérimentale de Marcellas 2485

Town ETOILE SUR RHONE

Postcode 26800

Country France

Department 3

Department name ARVALIS Pôle Europe (Europe Division) not applicable

Same as proposing organisation's address

Street 110 Chemin de la côte vieille

Town BAZIEGE

Postcode 31450

Country France

Administrative forms

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **Mathieu**

Last name* **Marguerie**

E-Mail* **m.marguerie@arvalis.fr**

Position in org. **Regional engineer**

Department **DAR (Regional Direction)**

Same as organisation name

Same as proposing organisation's address

Street **Route de Vinon, Le Plan**

Town **Gréoux les Bains**

Post code **04800**

Country **France**

Website **https://www.arvalis.fr/**

Phone **+33764566804**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
TABONE	Audrey	a.tabone@arvalis.fr	+33672806501
STADEL	Maureen	m.stadel@arvalis.fr	+33611873909

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	Mathieu	Marguerie	Man	France	m.marguerie@arvalis.fr	Category B Senior resea	Leading		
Ms	Audrey	TABONE	Woman	France	a.tabone@arvalis.fr	Category B Senior resea	Team member		
Ms	Maureen	STADEL	Woman	France	m.stadel@arvalis.fr	Category B Senior resea	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Marguerie M, Grave J., De Solan B., Martin Chave A., Agroforesterie: Mieux comprendre son effet sur le développement des céréales ; Perspectives Agricoles, 2024</i>
Publication	<i>Castel L., Plessix S., Gaspari C., Warlop F., Fourrié L., Montrognon Y., Ronzon J., Labeyrie B., Ray T., Cadet D., Arlaud C., Paut R., Tchamitchian M., Bouvier J-C., Jammes D., Filleron E., Sieffert A., Fanguede A., 2019, Concevoir et expérimenter des vergers en Agriculture Biologique ; Innovations Agronomiques</i>
Other achievement	<i>Robinson D., 2023, Agroforesterie en climat méditerranéen : acquisition de données concernant l'influence des arbres sur le microclimat, le développement et la productivité des céréales, engineering school report</i>
Other achievement	<i>Balssa M., 2024, Agroforesterie et influence des arbres sur l'environnement de production des céréales, engineering school report</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
CLIMAF PACA (2022-2024)	<i>Regional project (Provence) to make references on the impact of agroforestry on cereals microclimate, soil fertility, biodiversity and social-economic performances of farms. References on phenotyping methods adapted for agroforestry. Partners : Arvalis, INRAE, Agroof, Chambre Agriculture 13, Hiphen, GR CIVAM, Lycée Agricole Valabre Funding : PACA Region and FEADER https://www.arvalis.fr/recherche-innovation/nos-travaux-de-recherche/climaf</i>
ARBOREOL (2022-2025)	<i>Understand the effect of hedges on cereal microclimate. Partners : Agroof, Arvalis, INRAE, INP Dynafor Funding: Fondation de France https://www.arvalis.fr/recherche-innovation/nos-travaux-de-recherche/arboreol</i>
EMPUSA (2019-2024)	<i>Assess the sustainability of Fruit Tree-based Agroforestry Systems conducted in organic farming: their socio-economic and environmental performances, their technical feasibility and their overall success; study the services expected by Fruit Tree-based Agroforestry Systems: functional biodiversity regulation services, production services (yield and quality). Partners : GRAB, Agroof, Bio de PACA, Chambre Agriculture Drôme, ITAB, ARVALIS, LPO, SERFA, INRAE Funding : OFB</i>
VERTICAL (2013-2018)	<i>L'objectif du projet est de concevoir et d'évaluer les performances de systèmes de production associant des arbres fruitiers, des cultures assolées et des infrastructures agroécologiques en agriculture biologique The objective of the project is to design and evaluate the performance of production systems combining fruit trees, rotational crops and agroecological infrastructures in organic farming.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
"Plateforme TAB"	<i>Experimental design with fruits trees (peach and almond trees) and cereals (wheat, soya, maize, rapeseed) in south of department Drome in semi Mediterranean climate.</i>
"Plateforme Vinon"	<i>Experimental design with association between lumber and cereals (maize, soya, wheat) in Provence.</i>
Phenotyping tools	<i>Arvalis have many equipment for phenotyping trees ans crops and developed in the CLIMAF Project methods to use it in agroforestry.</i>

Administrative forms

<i>Crop model</i>	<i>Crop model CHN used to model and understand the impact of trees on cereals development. Could be used in combination with Hi-Safe (INRAE).</i>
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Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999879881	POLITECNICO DI MILANO

Short name: POLIMI

Address

Street	PIAZZA LEONARDO DA VINCI 32
Town	MILANO
Postcode	20133
Country	Italy
Webpage	www.polimi.it

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	13/01/2022 - no
SME self-assessment	unknown
SME validation	25/02/2009 - no

Administrative forms

Departments carrying out the proposed work

Department 1

Department name DABC - Architettura, Ingegneria delle Costruzioni e Ambiente Cost not applicable

Same as proposing organisation's address

Street Via Giuseppe Ponzio, 31, Milano, 20133,

Town MILAN

Postcode 20133

Country Italy

Department 2

Department name DASTU - Department of Architecture and Urban Studies not applicable

Same as proposing organisation's address

Street via Bonardi, 3, Milano, 20133, Italy

Town MILAN

Postcode 20133

Country Italy

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Prof.**

Gender Woman Man Non Binary

First name* **Raffaella**

Last name* **Brumana**

E-Mail* **raffaella.brumana@polimi.it**

Position in org. **Full Professor (Geomatics) - Sc. Resp. ABClab Gicarus**

Department **DABC- Architettura, Ingegneria delle Costruzioni e Ambiente Costruito (Architect**

Same as organisation name

Same as proposing organisation's address

Street **Via Giuseppe Ponzio, 31, Milano, 20133, Italy**

Town **MILAN**

Post code **20133**

Country **Italy**

Website **https://www.dabc.polimi.it/; http://www.gicaruslab-dabc.it/**

Phone **+390223995613**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Elisa	Barilli	ricerca-dabc@polimi.it	+390223995606
Nicola	Genzano	nicola.genzano@polimi.it	+390223995613
Martino	Mocchi	bureau-dabc@polimi.it	+390223995605
Eugenio	Morello	eugenio.morello@polimi.it	+390223995561
Laura	Di Maria	ricerca.dastu@polimi.it	+390223995443

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Prof	Raffaella	Brumana	Woman	Italy	Raffaella.bruman a@polimi.it	Category A Top grade re	Leading	0000-0002-3359- 981X	Orcid ID
Prof	Elena	Mussinelli	Woman	Italy	elena.mussinelli @polimi.it	Category A Top grade re	Team member	0000-0002-4521- 522X	Orcid ID
Prof	Eugenio	Morello	Man	Italy	eugenio.morello @polimi.it	Category A Top grade re	Team member	0000-0003-2382- 6123	Orcid ID
Prof	Andrea	Arcidiacono	Man	Italy	andrea.arcidiaco no@polimi.it	Category A Top grade re	Team member	0000-0001-5068- 076X	Orcid ID
Prof	Fabrizio	Banfi	Man	Italy	Fabrizio.banfi@p olimi.it	Category B Senior resea	Team member	0000-0002-5193- 0043	Orcid ID
Dr	Marzia	Gabriele	Woman	Italy	Marzia.Gabriele@ polimi.it	Category D First stage r	Team member	0000-0003-0934- 366X	Orcid ID
Prof	Nicola	Genzano	Man	Italy	nicola.genzano@ polimi.it	Category B Senior resea	Team member	0000-0001-8184- 5635	Orcid ID
Dr	Silvia	Ronchi	Woman	Italy	silvia.ronchi@poli mi.it	Category B Senior resea	Team member	0000-0001-9793- 0287	Orcid ID
Prof	Stefano	Salata	Man	Italy	stefano.salata@p olimi.it	Category B Senior resea	Team member	0000-0001-9342- 9241	Orcid ID
Dr	Barbara	Piga	Woman	Italy	barbara.piga@po limi.it	Category B Senior resea	Team member	0000-0003-3694- 4583	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Gabriele, M.; Brumana R.; "Monitoring Land Degradation Dynamics to Support Landscape Restoration Actions in Remote Areas of the Mediterranean Basin (Murcia Region, Spain)", <i>Sensors</i> 2023, 23(6), 2947; pp. 28, https://dx.doi.org/10.3390/s23062947
Publication	Marzia Gabriele; Raffaella Brumana; Mattia Previtali; Alberta Cazzani, 2022, A combined GIS and remote sensing approach for monitoring climate change-related land degradation to support landscape preservation and planning tools: the Basilicata case study, <i>Applied Geomatics</i> , 2022-07-26 Journal article, DOI: 10.1007/s12518-022-00437-z
Publication	Brumana, R.; Quilici, S.; Oliva, L.; Previtali, M.; Gabriele, M.; Stanga, C. Multi-Sensor HR Mass Data Models toward Multi-Temporal-Layered Digital Twins: Maintenance, Design and XR Informed Tour of the Multi-Stratified Appian Way (PAAA). <i>Sensors</i> 2023, 23, 8556. https://doi.org/10.3390/s23208556 Achievement: How Extended Reality Platforms can contribute to awareness rising involving people in interactive and web based XR(VR/AR/MR) immersive environment
Publication	Mahmoud, I.; Morello, E.; Salvia, G; Ludlow, D; "Co-creation pathways to inform shared governance of Urban Living Labs in practice: Lessons from three European projects", <i>Frontiers in Sustainable Cities</i> , 2021, 1(19), https://doi.org/10.3389/frsc.2021.690458
Publication	Ronchi S., Salata S., Arcidiacono A., Piroli E., Montanarella L., (2019), "Policy instruments for soil protection among the EU Member States: a comparative analysis", <i>Land Use Policy</i> , vol. 82, pp. 763–780, (ISSN 0264-8377), Elsevier (https://doi.org/10.1016/j.landusepol.2019.01.017).

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
LANDSHIFT, Horizon-CL6-2024-CLIMATE-01-04 (RIA).PI	Community-Led Creation of Living Spaces in Shifting Landscapes for Climate-Resilient Land Use Management and Supporting the New European Bauhaus. To address SOIL challenges of climate change, ecosystem biodiversity loss, and unsustainable land management practices, developing innovative solutions involving farmers and communities, through Digital Twins/Data Cube, maximizing net removals from LULUCF to mitigate biogenic emissions. IT LLS/LHs Pilot: Basilicata Region.
SOILTRIBES 2024-27, HORIZON-MISS-2023-SOIL-01-07	Nov 2024-26, Glocal ecosystems restoring soil values, roles and connectivity (on course GA). The project aims to strengthen the resilience and accelerate the transformation and growing capacity of local assemblies (IT pilot Scafati Municipality in the Sarno Province with land degradation-use issues), to increase resilient innovations for Climate Change Adaptation with quintuple-helix governance model. Polimi WP leader of Pollinating widely (vehiculation through innovative tolos, as DT, NEBtools
SOIL4LIFE: LIFE 2014-2020	Soil4Life aims to promote sustainable use of the soil as a strategic, limited and non-renewable resource, in line with the commitment by the EU countries at the UN table, and SDGs. Soil4Life involves associations and research institutions convinced that the soil must be preserved with concrete actions and policies, supported by analyses and data that allow monitoring of the ecological status. Soil4Life pursues the application of the Voluntary Guidelines for Sustainable Soil Management, involvin
NATIOONS	HE EC-NATIOONS will assist by POLIMI the Mission SOIL during part of its first 'induction-pilot' (2021-25), as a messenger of the Mission, conveying awareness raising messages to national and regional stakeholders across EU, and Southern Neighbourhood Countries (AC Morocco, Tunisia, Israel), providing access to capacity building materials, spurring the discussions on the best LIVING LABS setups to address regional soil needs, and fostering early matchmaking for cross-regional LL clusters.

Administrative forms

<p>HARMONIA: H2020 2018-20 (POLIMI- DABC coordinator)</p>	<p>HARMONIA G.A. No. 101003517 SOCIETAL CHALLENGES - Climate action, Environment, Resource Efficiency and Raw Materials (H2020-LC-CLA-2018-2019-2020) – “Development of a Support System for Improved Resilience and Sustainable Urban areas to cope with Climate Change and Extreme Events based on GEOSS and Advanced Modelling Tools” .</p>
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Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<p>DABClab GICARUS LAB and virtual platform</p>	<p>Virtual Digital Lab managing Digitization, EO LD Monitoring, Digital Twins. Geoportal implementation, updating MEDALUS system for Aridity and LD indicators, open data (Satellite data Copernicus data). Geoportal open-source Infrastructure for multi-temporal Geodata access; Geoserver, WMTS, A360. GOO</p>
<p>DABClab Glicarus lab webXR platform Infrastructure</p>	<p>HUMAN CENTRIC interactive immersive webXR platform implementation (AR/VR/MR) for Digital Twins and 3D complex models (Built Environment, LD datasets, Landscape, DCH); devices as Oculus, Smartphones, Hololens; sw Unity © /UnrealEngine / Twinmotion. Living Labs applications, collective experiences,</p>
<p>Urban Simulation Laboratory at Dastu, POLIMI</p>	<p>Equipped with environmental mobile sensors (mobile weather station, low-cost PASCO sensors, Dylos mobile AQ sensor for PM detection, thermal camera), wearable technologies for VR, luminous planning table for participatory workshops, and software for urban modeling and simulation . Co-creations toolk</p>
<p>LabPPTE – Plans Landscape Territory Ecosystem Lab</p>	<p>The team of PPTE Lab has expertise in mapping and assessing ecosystem services provided by soil (InVest) and investigating causes of soil degradation. The team has carried out research in the field of policies and strategies for the limitation of soil degradation and land take at European and Italia</p>
<p>ENVI-Reg</p>	<p>ENVI-Reg - Environmental Regeneration Observatory. Design Assessment Strategy and Guidelines for ecosystem services as NBS. (Sc. Resp. E. Mussinelli)</p>
<p>DABClab Glicarus Technical Equipment</p>	<p>On Site Technical Equipment for data integration (i.e. Drones, IRT, NDT, IoT, Spherical Cameras, MMS, TLS, processing SW, Metashape AGISOFT, ArcGIS, QGIS, ERDAS)</p>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999531360	CONSIGLIO PER LA RICERCA IN AGRICOLTURA E L'ANALISI DELL'ECONOMIA AGRARIA
Short name: CREA	
Address	
Street	via della navicella 2-4
Town	ROMA
Postcode	00184
Country	Italy
Webpage	https://www.crea.gov.it
Specific Legal Statuses	
Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes
SME Data	
Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.	
SME self-declared status	20/05/2016 - no
SME self-assessment	20/05/2016 - no
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name Agriculture and Environment not applicable

Same as proposing organisation's address

Street Via della Navicella 2/4

Town ROME

Postcode 00184

Country Italy

Department 2

Department name Agriculture and Environment not applicable

Same as proposing organisation's address

Street Via di Corticella 133, 40128 Bologna

Town Bologna

Postcode 40128

Country Italy

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Prof.**

Gender Woman Man Non Binary

First name* **Giuseppe**

Last name* **Corti**

E-Mail* **giuseppe.corti@crea.gov.it**

Position in org. **Director**

Department **Agriculture and Environment**

Same as organisation name

Same as proposing organisation's address

Street **Via della Navicella 2/4**

Town **ROME**

Post code **00184**

Country **Italy**

Website **https://www.crea.gov.it/en/web/agricoltura-e-ambiente**

Phone **+39 3477897667**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Grazia	Vitale	grazia.vitale@crea.gov.it	+XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Maria Ludovica	Sacca'	Woman	Italy	marialudovica.sacca@crea.gov.it	Category B Senior research	Team member	0000-0003-4222-9527	Orcid ID
Dr	Maria	Fantappiè	Woman	Italy	maria.fantappie@crea.gov.it	Category B Senior research	Team member	0000-0001-6223-1099	Orcid ID
Dr	Giovanni	L'Abate	Man	Italy	giovanni.labate@crea.gov.it	Category B Senior research	Team member	0000-0003-4018-7570	Orcid ID
Dr	Stefano	Canali	Man	Italy	stefano.canali@crea.gov.it	Category B Senior research	Team member	0000-0003-1077-1389	Orcid ID
Prof	Giuseppe	Corti	Man	Italy	giuseppe.corti@crea.gov.it	Category A Top grade research	Leading	0000-0001-6677-9326	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input checked="" type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Dataset	<i>Fantappiè M., C. Calzolari, F. Ungaro, I. Vinci, P. Giandon, A. Muscolo, C. Zaccone, M.T. Dell'Abate, G. L'Abate, S. Pellegrini, S. Brenna, F. Staffilani, F. Petrella, L. Gardin, S. Barbieri, S. Pini, M. Tiberi, R. Paone, G. L'Abate, ... (2018). ELABORATION OF THE ITALIAN PORTION OF THE GLOBAL SOIL ORGANIC CARBON MAP (GSOCMAP) (1.2.0) [Data set]. Eurosoil 2020, Connecting people and soil (eurosoil2020), Geneva, Switzerland. Zenodo. https://doi.org/10.5281/zenodo.7746495</i>
Publication	<i>Corti G., Cocco S., Hannachi N., Cardelli V., Weindorf D.C., Marcellini M., Agnelli A. (2020). Assessing geomorphological and pedological processes in the genesis of pre-desert soils from southern Tunisia. <i>Catena</i> 187: 104290.</i>
Publication	<i>Mei G., Pesaresi S., Corti G., Cocco S., Colpi C., Taffetani F. (2020). Changes in vascular plant species composition, top-soil and seed-bank along coppice rotation in an <i>Ostrya carpinifolia</i> forest. <i>Plant Biosystems</i> 154: 259–268.</i>
Publication	<i>Saccà M.L., Caputo F., Ceotto E., Fornasier F. (2024). Fungal β-glucosidase gene and corresponding enzyme activity are positively related to soil organic carbon in unmanaged woody plantations. <i>Soil Ecology Letters</i> 6:240238. https://doi.org/10.1007/s42832-024-0238-2</i> <i>Evaluation of microbial indicators involved in SOM decomposition with possible implications for land management strategies aimed at C storage.</i>
Publication	<i>Costantini E. A. C., Urbano F., Aramini G., Barbetti R., Bellino F., Bocci M., G. L'Abate, ... (2009). Rationale and methods for compiling an atlas of desertification in Italy. <i>Land Degradation & Development</i>, 20(3), 261-276. https://doi.org/10.1002/ldr.908</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>EXCALIBUR – Horizon2020, GA ID: 817946 (2019-24)</i>	<i>Exploiting the multifunctional potential of belowground biodiversity in horticultural farming. It plans to enhance the knowledge on soil biodiversity dynamics and its synergistic effects with prebiotic-probiotic approaches. Interactions among coltures, soils and microorganisms. Challenges such as climate change adaptation and mitigation, sustainable agricultural production, ecosystem services prevention and restoration of land and soil degradation.</i>
<i>Minotaur Horizon2020 GA862695 (EJP SOIL)</i>	<i>Aims to identify and select relevant taxonomical and functional indicators for soil biodiversity and associated agricultural soil functions, document their status and trends in time and space across Europe, and assess their vulnerability to climate change and sensitivity for management practices applied to respond to such climate change.</i>
<i>ProbeField</i>	<i>A novel protocol for robust in field monitoring of carbon stocks and soil fertility based on proximal sensors and existing soil spectral libraries</i>
<i>SoilWise HORIZON IA 2022 GA 101112838</i>	<i>HORIZON-MISS-2022-SOIL-01-01. It provides an integrated and actionable access point to scattered/heterogeneous soil data and knowledge in EU, making them FAIR (Findable, Accessible, Interoperable and Reusable) and improve trust, willingness, and ability to share&re-use soil data. The repository and community are designed to be a joint ground for stakeholders, to achieve healthy soils 2050, uptake and implementation by land managers, policy, research, industry.</i>
<i>MRV4SOC Horizon 2020 (2023-25)</i>	<i>Monitoring, Reporting, and Verification of Soil Organic Carbon for Soil Organic Carbon. MRV4SOC is a 3-year funded EU project. It will monitor Carbon farming through its three-pillar method of Standardization, Reporting, and Verification. Agroforestry and Cropland, Ecosystem Services, National Rural Neural Network, Participative Discussions.</i>

Administrative forms

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<i>GEONICS EM38-MK2</i>	<i>Useful for measuring soil salinity, it can cover large areas quickly without the need for ground electrodes. It is based on the principle of induction and provides an exploration depth of 1.5 m and 0.75 m, respectively in vertical and horizontal dipole mode.</i>
<i>FieldSpec® 3</i>	<i>Portable precision field data acquisition instrument with a spectral range (350-2500 nm) and rapid data collection (1/10th of a second per spectrum). Designed to collect measurements of reflectance, radiance and irradiance, as well as in the field of pedology, it can be used for applications in remo</i>
<i>Scionix scintillation detector Type 70a150/2m-cn C</i>	<i>Gamma spectrometer. Gamma-ray spectrometry is a fast and widespread method used to identify radionuclides and to determine their activity. Non-destructive method, performed directly infield by proximal sensing.</i>
<i>SeqStudio Genetic Analyzer</i>	<i>Sanger sequencing technology of DNA fragments for: i) identification of microbial species, ii) specificity check of new designed probes, iii) Next-generation sequencing (NGS) confirmation.</i>
<i>QuantStudio™ 3 Real-Time PCR System</i>	<i>Real-Time PCR System for absolute and relative quantification of microbial taxonomic groups or functional genes, as soil indicators. Gene copy number variation can be obtained from total DNA in response to different management practices.</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
935375657	LEGAMBIENTE LOMBARDIA ONLUS

Short name: Legambiente Lombardia

Address

Street	VIA ADELAIDE BONO CAIROLI 22
Town	MILANO
Postcode	20127
Country	Italy
Webpage	lombardia.legambiente.it

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **Cosimo Damiano**

Last name* **Di Simine**

E-Mail* **damiano.disimine@legambientelombardia.it**

Position in org. **Coordinator of the Scientific Committee**

Department **LEGAMBIENTE LOMBARDIA ONLUS**

Same as organisation name

Same as proposing organisation's address

Street **VIA ADELAIDE BONO CAIROLI 22**

Town **MILANO**

Post code **20127**

Country **Italy**

Website **https://www.legambientelombardia.it/**

Phone **+390287386480**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Francesca	Menziozzi	ufficioprogetti@legambientelombardia.it	+390287386480

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Cosimo Damiano	Di Simine	Man	Italy	damiano.disimine@legambientelombardia.it	Category B Senior resea	Leading		

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input checked="" type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>LIFE22-IPN-IT-LIFE NatConnect2030</i>	<i>Programme: LIFE-2022-STRAT-two-stage-SNAP www.legambientelombardia.it/life-natconnect2030-eng/ Aim: consolidating an integrated Natura 2000 network management system in the Italian Regions of Lombardy, Piedmont, Emilia-Romagna and Veneto and the Autonomous Province of Trento, in order to ensure the achievement of the conservation objectives of the EU Habitats and Birds Directives, and via the implementation of strategic actions from the five Prioritised Action Frameworks 2021-2027.</i>
<i>LIFE CLIMAX PO 101069928</i>	<i>Programme: LIFE-2021-STRAT-CLIMA-SIP-two-stage www.lifeclimaxpo.adbpo.it/ Aim: promoting the adaptation to climate change through intelligent water management in the river basin district of the PO river in Italy.</i>
<i>LIFEorchids LIFE17 NAT/IT/000596</i>	<i>Programme: LIFE www.lifeorchids.eu Aim: improving the conservation status of critically endangered orchid communities in selected habitats in North-western Italy.</i>
<i>#CambiamoAgricoltura</i>	<i>Donor: Cariplo Foundation. The initiative consisted of 4 stages/projects from 2017 to early 2024 whereby Legambiente Lombardia together with LIPU and WWF Italy developed a series of advocacy and communication activities, involving more than 40 associations, with regards to the reform and the implementation in Italy of the Common Agricultural Policy (as well as agroecology and Farm to fork strategy).</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999995796	UNIVERSITA DEGLI STUDI DI MILANO
Short name: UMIL	
Address	
Street	Via Festa Del Perdono 7
Town	MILANO
Postcode	20122
Country	Italy
Webpage	www.unimi.it
Specific Legal Statuses	
Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes
SME Data	
Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.	
SME self-declared status	17/01/2022 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name ESP Dipartimento di Scienze e Politiche Ambientali not applicable

Same as proposing organisation's address

Street Via Giovanni Celoria, 2

Town MILANO

Postcode 20133

Country Italy

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title Prof.

Gender Woman Man Non Binary

First name* **Stefano**

Last name* **Bocchi**

E-Mail* **stefano.bocchi@unimi.it**

Position in org. Full professor (agronomy)

Department ESP Dipartimento di Scienze e Politiche Ambientali

Same as organisation name

Same as proposing organisation's address

Street Via Giovanni Celoria, 2

Town MILANO Post code 20133

Country Italy

Website Please enter website

Phone +393404910515 Phone 2 +XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Francesco	Fava	francesco.fava@unimi.it	+XXX XXXXXXXXXX
Catarina	La Porta	caterina.laporta@unimi.it	+XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Prof	Stefano	Bocchi	Man	Italy	Stefano.bocchi@unimi.it	Category A Top grade re	Leading	0000-0002-0146-2069	Orcid ID
Prof	Caterina	La Porta	Woman	Italy	caterina.laporta@unimi.it	Category A Top grade re	Team member	0000-0002-3010-8966	Orcid ID
Prof	Francesco	Fava	Man	Italy	francesco.fava@unimi.it	Category B Senior resea	Team member	0000-0003-3748-7417	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Gomasasca S., Stefani F., Fasola E., La Porta C., Bocchi S. (2024). Regional evaluation of glyphosate pollution in the minor irrigation network. CHEMOSPHERE, vol. 355, p. 1-12, ISSN: 0045-6535, doi: 10.1016/j.chemosphere.2024.141679 Achievement: updated map of the water and soil pollution in Lombardy and a general description of glyphosate dynamic in cropping systems
Publication	Dal Borgo A., Chiaffarelli G., Capocéfalo V., Schievano A., Bocchi S., Vagge I. (2023). Agroforestry as a Driver for the Provisioning of Peri-Urban Socio-Ecological Functions: A Trans-Disciplinary Approach. SUSTAINABILITY, vol. 15, p. 1-30, ISSN: 2071-1050, doi: 10.3390/su151411020 Achievement: analyse and discuss the impacts of agroforestry in different areas. How to manage agricultural systems in a integrated way
Publication	Bocchi S. (2023). The ecology of Agri-food system. In Global Health, Sustainable Development goals Series. Eds.M.Raviglione, Springer, 2023: 485- 488. Achievement: agroecology as a new science in cropping systems management and Global Health
Publication	Bocchi S., Villa S., Orlando F., Grimoldi L., Raviglione M. 2022. Agrofood system and Human Health. In V. Ingegnoli et al eds. Environmental Alteration Leads to human diseases. Springer Nature 2022: 131 – 163. Achievement: an updated analysis of the nexus agrofood system and human health with the focus on cropping system management
Publication	Zanchi M, Zapperi S., Zanotti C., Rotiroti M. Bonomi T., Gomasasca S., Bocchi S., Laporta C. (2022). A pipeline for monitoring water pollution : the example of heavy metals in Lombardy waters. HELIYON, vol. 8, p. 1-10, ISSN: 2405-8440, doi: 10.1016/j.heliyon.2022.e12435 Achievement: a new methodology for assessing water pollution at regional scale and cropping system based

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Agrismart ERASMUS + 2020-1-IT01-KA202-008399 P.I	EU Erasmus + Agrismart 2020 – 2023. https://agri-smart.eu Sustainability and digital skills for the agricultural sector
IPCC Moupa Interdisciplinary Project	Fondazione Cariplo AGER – IPCC Moupa - Interdisciplinary Project for assessing current and expected climate change impacts on mountain pastures (IPCC Moupa). Analysing the mountain cropping systems in consequences of Climate Change by using crop growth modelling
UE Projext OpenAgri	https://www.uia-initiative.eu/en/uia-cities/milan developing peri-urban agrifood sector and cropping system; contributing to food availability, particularly of fresh products.
CircAgric-GHG Cofund ERA-Nets SusCrop	Mechanism by which cropping and farming systems can enhance circulate, reduce GHG and preserve soil fertility. https://www.circagric.org/about/

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
Portable gas analyser EGM-5	Gas analyser for assessing the CO2 efflux from soils and crops

Administrative forms

<i>Tulin Mayer for soil Structure Stability</i>	<i>Lab instrument for assessing the soil structure stability influenced by cropping system management</i>
<i>LI-coor LAI 2200 C</i>	<i>Crop Canopy Analyzer using non-destructive method to measure Leaf Area Index of the crops</i>
<i>ASD FieldSpec 4 Hi-Res</i>	<i>Malvern Panalytical High Resolution Spectroradiometer for crop/soil research</i>
<i>Li-600 N</i>	<i>Porometer and Fluorometer for rapid insights into stomatal conductance, chlorophyll fluorescence and leaf angle for a variety of leaf sizes and morphologies (crop and cultivated varieties)</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
899156245	ENTE REGIONALE PER I SERVIZI ALL' AGRICOLTURA E ALLE FORESTE

Short name: ENTE REGIONALE PER I SERVIZI ALL' AGRICOLTURA E ALLE FORESTE

Address

Street	VIA POLA 12
Town	MILANO
Postcode	20124
Country	Italy
Webpage	www.ersaf.lombardia.it

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	09/09/2022 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Department of Agriculture	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	VIA POLA 12	
Town	MILANO	
Postcode	20124	
Country	Italy	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **Silvia Renata**

Last name* **Motta**

E-Mail* **silvia.motta@ersaf.lombardia.it**

Position in org. **Manager**

Department **Department of Agriculture**

Same as organisation name

Same as proposing organisation's address

Street **VIA POLA 12**

Town **MILANO**

Post code **20124**

Country **Italy**

Website **www.ersaf.lombardia.it**

Phone **(+39)0267404 653**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Pietro	lavazzo	pietro.lavazzo@ersaf.lombardia.it	+393383506189
Alessio	Pacati	alessio.pacati@ersaf.lombardia.it	+XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Silvia Renata	Motta	Woman	Italy	silvia.motta@ersaf.lombardia.it	Category B Senior researcher	Leading		
Ms	Lorena	Verdelli	Woman	Italy	lorena.verdelli@ersaf.lombardia.it	Category D First stage researcher	Team member		
Dr	Pietro	Iavazzo	Man	Italy	pietro.iavazzo@ersaf.lombardia.it	Category C Recognised researcher	Team member		
Dr	Alessio	Pacati	Man	Italy	alessio.pacati@ersaf.lombardia.it	Category D First stage researcher	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	"Life HelpSoil – Guidelines for Conservation Agriculture application and dissemination", June 2017, ISBN 978-88 9932 903 7
Other achievement	"Soil carbon sequestration and biological activity in Conservation Agriculture systems in North Italy", in Atti (MTA CAES Geographical Institute Budapests, 2016: ISBN 978-963-9545-50-2) "International Conference on Conservation Agriculture and Sustainable Land Use", Budapest (Ungheria), 2016
Other achievement	"Environmental outcomes of Conservation Agriculture in North Italy", in Atti 6th World Congress on Conservation Agriculture, Winnipeg (Canada), June 2014
Publication	"Agro-environmental aspects of conservation agriculture compared to conventional systems: A 3-year experience on 20 farms in the Po valley (Northern Italy)" - Perego A. et al (2019) Here, within the HelpSoil LIFE+ project and involving 20 farms in the Po Valley, soil organic carbon content, SOC stock, crop yield, biological fertility, soil biodiversity and economic efficiency were estimated in different farming systems (conservative and conventional agriculture).
Publication	"Effect of soil conservation practices on organic carbon in Vertisols and Luvisols of Northern Italy", in "Sustainable agroecosystems in climate change mitigation" – ed. by Maren Oelbermann – Wageningen Acad. Publishers, 2014, pp17-32, ISBN 978-90-8686-235-1. The objective was to evaluate the effect of zero tillage and conservation agriculture (CA) on SOC storage. The research sites used in the study were located in different soil and climate locations to compare the effects of long-term CA prac

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Life HELPSOIL project (LIFE12 ENV/IT/000578)	Helping enhanced soil functions and adaptation to climate change by sustainable conservation agriculture techniques. 20 farms in the Po Plain were monitored for 3 years, allowing the comparison of different agricultural soil management practices based on conservation methods (no/minimum tillage, cover crops) and the conventional ones. The effects on carbon dynamics and soil ecosystem functions were highlighted.
AgriCO2Itura project	The objective was to verify, under different soil and climate conditions of the Lombardy plain, how much, compared to traditional agriculture, Conservation Farming techniques allow to accumulate carbon in soils and reduce CO2 emissions into the atmosphere. The comparison of different agronomic techniques (traditional and conservation) over a long period (at least 10 years) examined the following soil quality indicators: organic carbon stock, biological fertility, CO2 fluxes from soils, edaphic b
SOIL4LIFE project (LIFE17 GIE/IT/000477)	Promotion of sustainable use of soil as a strategic, limited and non-renewable resource. The project is focused on the improving of governance of land-use decision-making processes at national, regional and local level, providing information for soil protection and planning support tools. National and International best practices related to SOC sequestration/stocking and to the use of organic matrices (manure, sewage sludge, compost) were assessed.
EJP SOIL project (H2020 LCSFS-20-2019)	Towards climate-smart sustainable management of agricultural soil. ERSAF is involved in the WP3, WP6, WP8, with activities related to soil data information harmonization (national and European level); monitoring, modelling and mapping of soil carbon, soil fertility and degradation; support for the implementation of national and European soil knowledge within agricultural, environmental and climate change mitigation/adaptation policies.

Administrative forms

MoSAC (regional)	<i>An experimental monitoring network was set up with the objective of assessing the agroclimatic environmental services of soils managed under conservation agriculture compared to conventional management. This project is supported by a long-term experimental site and a network of farms, where soil quality indicators, including SOC content, soil bulk density and structure, and biodiversity (arthropods/annelids) are regularly monitored under field conditions.</i>
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Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<i>Living Lab https://www.ersaf.lombardia.it/agricol</i>	<i>LL To test innovations for sustainable soil management. It is supported by an LTE and a network of experimental farms where soil quality indicators are monitored on a field scale through continuous data collection, and also used for the validation of predictive models on the C and N cycle in the soi</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
990555853	IRIS SOC. COOP. AGR. DI PRODUZIONE E LAVORO P. A.

Short name: IRIS SOC. COOP.

Address

Street	CASCINA CORTEREGONA 1
Town	CALVATONE
Postcode	26030
Country	Italy
Webpage	www.irisbio.com

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	11/01/1985 - yes
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Agricoltura biologica (organic farming)	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	Cascina Corteregona, 1, Calvatone (CR),	
Town	CALVATONE	
Postcode	26030	
Country	Italy	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **Alberto**

Last name* **Rossi**

E-Mail* **alberto.rossi@iriscoop.bio**

Position in org. **Administrative manager / Vice President**

Department **Agricoltura biologica (organic farming)**

Same as organisation name

Same as proposing organisation's address

Street **Cascina Corteregona, 1, Calvatone (CR), 26030, Italy**

Town **CALVATONE**

Post code **26030**

Country **Italy**

Website **https://iriscoop.bio/**

Phone **+39037597115**

Phone 2 *+XXX XXXXXXXXXX*

Other contact persons

First Name	Last Name	E-mail	Phone
Maurizio	Gritta	maurizio.gritta@iriscoop.bio	+39037597115

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	Alberto	Rossi	Man	Italy	alberto.rossi@iriscoop.bio	Category B Senior resea	Leading		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Service	Training courses in organic farming
Service	Company visits at schools or individual groups

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
FILIERA CEREALICOLA IRIS	Production and logistics supply chain for organic cereals in the territory
ROTAZIONI, COVER CROPS	Techniques for improving fertility/control of pests
TRICODERMA	Experimentation on aflatoxin control using Trichoderma

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
IRIS ONLINE SHOP	ECOMMERCE https://cooperativairis.myshopify.com/
IRIS SITE	WWW.IRISCOOP.BIO

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
990906023	<i>Institut National Agronomique de Tunisie</i>
Short name: INAT	
Address	
Street	Avenue Charles Nicolle 43
Town	Tunis
Postcode	1082
Country	Tunisia
Webpage	http://www.inat.tn/fr
Specific Legal Statuses	
Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes
SME Data	
Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.	
SME self-declared status	10/05/1971 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Rural Engineering, Water and Forests	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	43 Av. Charles Nicolle	
Town	Tunis	
Postcode	1082	
Country	Tunisia	

Links with other participants

Type of link	Participant
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Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **Anis**

Last name* **Chekirbane**

E-Mail* **anis.chkirbene@inat.ucar.tn**

Position in org. **Assistant Professor Habilitated**

Department **Rural Engineering, Water and Forests**

Same as organisation name

Same as proposing organisation's address

Street **Avenue Charles Nicolle 43**

Town **Tunis**

Post code **1082**

Country **Tunisia**

Website **www.inat.tn**

Phone **+21623482882**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Khaoula	Khemiri	khaoula.khemiri@inat.ucar.tn	+21653216221
Issam	Nouiri	issam.nouiri@inat.ucar.tn	+21698422104
Jamel	Ben Nasr	jamel.bennasr@inat.ucar.tn	+21698222116
Layla	Ben Ayed	leila.benayed@inat.ucar.tn	+21698628648
Mohamed Fethi	Ben Hamouda	fethi.benhamouda@inat.ucar.tn	+21628736871

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Anis	Chekirbane	Man	Tunisia	anis.chkirbene@inat.ucar.tn	Category B Senior resea	Leading	0000-0002-7648-748X	Orcid ID
Dr	Khaoula	Khemiri	Woman	Tunisia	khaoula.khemiri@inat.ucar.tn	Category C Recognised	Team member	0000-0003-4242-922X	Orcid ID
Prof	Issam	Nouiri	Man	Tunisia	issam.nouiri@inat.ucar.tn	Category A Top grade re	Team member	0000-0002-2696-5471	Orcid ID
Dr	Layla	Ben Ayed	Woman	Tunisia	leila.benayed@inat.ucar.tn	Category B Senior resea	Team member	0000-0003-3408-7696	Orcid ID
Dr	Mohamed Fethi	Ben Hamouda	Man	Tunisia	fethi.benhamouda@inat.ucar.tn	Category B Senior resea	Team member	0000-0001-8830-302X	Orcid ID
Dr	Jamel	Ben Nasr	Man	Tunisia	jamel.bennasr@inat.ucar.tn	Category B Senior resea	Team member	0000-0002-5281-3893	Orcid ID
Dr	Samia	Khadhar	Woman	Tunisia	jamel.bennasr@inat.ucar.tn	Category B Senior resea	Team member	0000-0002-4191-3522	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>A research paper dealing with the drivers of land use pressure in arid and semi-arid regions of Tunisia. Khemiri, K., Jebari, S., Mahdhi, N., Saidi, I., Berndtsson, R., & Bacha, S. (2022). Drivers of long-term land-use pressure in the Merguellil Wadi, Tunisia, Using DPSIR Approach and Remote Sensing. Land, 11(1), 138.</i>
Other achievement	<i>Project deliverable where INAT is involved with a demo site. D1.3 Talanoa dialogue report: https://talanoawater.com/wp-content/uploads/2023/05/d1.3-talanoa-dialogue-report-ii.pdf</i>
Publication	<i>Samia, K., Abdelkarim, C., Yassin, H., & Teruo, H. (2013). The effect of long-term soil irrigation by wastewater on organic matter, polycyclic aromatic hydrocarbons, and heavy metals evolution: case study of Zaouit Sousse (Tunisia). Arabian Journal of Geosciences, 6, 4337-4346.</i>
Publication	<i>Ben Nasr, J., Chaar, H., Bouchiba, F., & Zaibet, L. (2021). Assessing and building climate change resilience of farming systems in Tunisian semi-arid areas. Environmental Science and Pollution Research, 28, 46797-46808.</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
TALANOA-WATER	<i>The objective of TALANOA-WATER is to inform and catalyze the adoption of robust transformational adaptation strategies to water scarcity under climate change that contribute to sustainable and inclusive economic efficiency and environmental sustainability.</i>
AGREEMAR	<i>Optimize resilience in Mediterranean countries by developing governance models, management strategies, costs-benefits analyses, technical specifications and simulation tools to enable increased resilience to climate change.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
910191450	AGENCE DE VULGARISATION ET DE LA FORMATION AGRICOLES

Short name: AGENCE DE VULGARISATION ET DE LA FORMATION AGRICOLES

Address

Street	30 RUE ALAIN SAVARY
Town	BELVEDERE TUNIS
Postcode	1002
Country	Tunisia
Webpage	www.avfa.agrinet.tn

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Rural Engineering, Water and Forests	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	30, rue Alain Savary	
Town	Tunis	
Postcode	1002	
Country	Tunisia	

Links with other participants

Type of link	Participant
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Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title Dr

Gender Woman Man Non Binary

First name* **Bassem**

Last name* **Moualhi**

E-Mail* **mouelhi1979@gmail.com**

Position in org. Director

Department Directorate of Extension Operations

Same as organisation name

Same as proposing organisation's address

Street 30 RUE ALAIN SAVARY

Town BELVEDERE TUNIS

Post code 1002

Country Tunisia

Website https://avfa.agrinet.tn/

Phone +21697021582

Phone 2 +XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Bassem	Mouelhi	Man	Tunisia	MOUELHI1979@gmail.com	Category B Senior resea	Leading		
Mr	Mongi	Jaidi	Man	Tunisia	jaidi.mongi@gmail.com	Category C Recognised	Team member		
Mrs	Nadia	Farhat	Woman	Tunisia	nadia.farhat@yahoo.fr	Category C Recognised	Team member		
Mrs	Faten	Rezgui	Woman	Tunisia	faten.rezgui@yahoo.fr	Category C Recognised	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input checked="" type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Boutheina, D., Amel, M., Sami, K., Fatma, B. S., & Bassem, M. (2022). Agricultural water management practices in mena region facing climatic challenges and water scarcity. Water Conservation & Management (WCM), 6(1), 39-44.</i>
Other achievement	<i>Atlas for adaptation to climate change in Tunisian Agriculture: FASTER FAS Living Lab co-designed proposals https://faster-h2020.eu/wp-content/uploads/2022/04/FASTER_Atlas-English_Online-Version-13.04.pdf</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
FASTER	<i>Farmers' Adaptation and Sustainability in Tunisia through Excellence in Research. It aims to reinforce Tunisian agricultural institutions' research and knowledge transfer capacity related to innovative land management given climate change and its implementation through the use of Farm Advisory Systems (FAS) and the Living Labs approach.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
902032974	EZZAYRA SOLUTIONS

Short name: EZZAYRA

Address

Street	App C1-4 Residence Central Garden Centre Urba
Town	Tunis
Postcode	1080
Country	Tunisia
Webpage	www.ezzayra.com

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	unknown
Secondary or Higher education establishment	unknown
Research organisation	unknown

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Administration – R&D	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	34 Rue de Tyr	
Town	Tunis	
Postcode	1034	
Country	Tunisia	

Links with other participants

Type of link	Participant
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Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **Yasser**

Last name* **Bououd**

E-Mail* **yasser.bououd@ezzayra.com**

Position in org. **CEO**

Department **Administration – R&D**

Same as organisation name

Same as proposing organisation's address

Street **34 Rue de Tyr**

Town **Tunis** Post code **1034**

Country **Tunisia**

Website **www.ezzayra.com**

Phone **+21626302660** Phone 2 *+XXX XXXXXXXXX*

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	Yasser	Bououd	Man	Tunisia	Yasser.bououd@ezzayra.com	Category B Senior resea	Leading		

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
<i>Other achievement</i>	<i>By FAO: http://www.fao.org/3/nd262fr/nd262fr.pdf</i>
<i>Other achievement</i>	<i>Collaboration with local distributors as startup in Smart Agriculture</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>Mago Project</i>	<i>MAGO - Mediterranean management solutions for a sustainable agriculture supplied by an Online collaborative platform</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
933074041	UNIVERSITE 8 MAI 1945 GUELMA

Short name: UNIVERSITE 8 MAI 1945 GUELMA

Address

Street	UNIVERSITE 8 MAI 1945 GUELMA
Town	GUELMA
Postcode	24000
Country	Algeria
Webpage	www.univ-guelma.dz

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	28/01/2015 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name Natural and life sciences not applicable

Same as proposing organisation's address

Street Avenue du 19 mai 1956; Guelma ,Algeria

Town Guelma

Postcode 401

Country Algeria

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **Imad eddine**

Last name* **BOUZNAD**

E-Mail* **bouznad.imad-eddine@univ-guelma.dz**

Position in org. **Assistant Professor Habilitated**

Department **Natural and life sciences**

Same as organisation name

Same as proposing organisation's address

Street **Avenue du 19 mai 1956; Guelma ,Algeria**

Town **Guelma**

Post code **401**

Country **Algeria**

Website **https://www.univ-guelma.dz/**

Phone **+213670058423**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Rabah	Zebza	zebsa.rabah@univ-guelma.dz	+213670245000
Tahani	derradji	derradji.tahani@univ-guelma.dz	+213667226987
Sadek	Atoussi	atoussi.sadek@univ-guelma.dz	+213660620906
Zinette	Bensakhri	bensakhri.zinette@univ-guelma.dz	+213661404860
Mohamed Islem	Bouacha	mohamedislam.bouacha@univ-tiaret.dz	+213659801885

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Zegait, R., Bouznad, I.E., Remini, B. et al. Comprehensive model for sustainable water resource management in Southern Algeria: integrating remote sensing and WEAP model. Model. Earth Syst. Environ. (2023). https://doi.org/10.1007/s40808-023-01826-y</i>
Publication	<i>Derradji, T., Belksier, MS., Bouznad, IE Guastaldi, E. et al. Spatio-temporal drought monitoring and detection of the areas most vulnerable to drought risk in Mediterranean region, based on remote sensing data (Northeastern Algeria). Arab J Geosci 16, 1 (2023). https://doi.org/10.1007/s12517-022-11060-y</i>
Publication	<i>Bouznad, IE., Guastaldi, E., Zirulia, A. et al. Trend analysis and spatiotemporal prediction of precipitation, temperature, and evapotranspiration values using the ARIMA models: case of the Algerian Highlands. Arab J Geosci 13, 1281 (2020). https://doi.org/10.1007/s12517-020-06330-6</i>
Publication	
Service	

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
875852189	BNEDER

Short name: EPIC | Bureau National d'Études pour le Développement Rural

Address

Street	Villa Bouchaoui Cheraga Alger
Town	Bouchaoui
Postcode	16084
Country	Algeria
Webpage	www.bneder.dz

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	01/10/2024 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Sub-Directorate of Programming and Technical Resources	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	Villa Bouchaoui Cheraga Alger	
Town	Bouchaoui	
Postcode	16084	
Country	Algeria	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **Matouk**

Last name* **AMIMEUR**

E-Mail* **m.amimeur@bneider.dz**

Position in org. **Sub-Director of Programming and Technical Resources**

Department **Sub-Directorate of Programming and Technical Resources**

Same as organisation name

Same as proposing organisation's address

Street **Villa Bouchaoui Cheraga Alger**

Town **Bouchaoui**

Post code **16084**

Country **Algeria**

Website **https://www.bneider.dz**

Phone **+213660771206**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Sofiane	Ihdene	s.ihdene@bneider.dz	+XXX XXXXXXXXXX
Djamel	Benguesmia	d.benguesmia@bneider.dz	+213669285274
Hassina	Tebbakh	h.tebbakh@bneider.dz	+XXX XXXXXXXXXX
Naziha	Chaib	n.chaib@bneider.dz	+213556755374

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	Matouk	Amimeur	Man	Algeria	m.amimeur@bneider.dz	Category B Senior resea	Leading		
Mr	Sofiane	Ihdene	Man	Algeria	s.ihdene@bneider.dz	Category C Recognised	Leading		
Mr	Djamel	Benguesmia	Man	Algeria	d.benguesmia@bneider.dz	Category C Recognised	Team member		
Ms	Hassina	Tebbakh	Woman	Algeria	h.tebbakh@bneider.dz	Category C Recognised	Team member		
Ms	Naziha	Chaib	Woman	Algeria	n.chaib@bneider.dz	Category C Recognised	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input checked="" type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Selka, I.; Mokhtari, A.M.; Tabet Aoul, K.A.; Bengusmia, D.; Malika, K.; Djebbar, K.E.-B. Assessing the Impact of Land Use and Land Cover Changes on Surface Temperature Dynamics Using Google Earth Engine: A Case Study of Tlemcen Municipality, Northwestern Algeria (1989–2019). ISPRS Int. J. Geo-Inf. 2024, 13, 237. https://doi.org/10.3390/ijgi13070237</i>
Publication	<i>Aissaoui, M., Maizi, D., Benhamza, M., Azzouz, K., Belaroui, A., & Bengusmia, D. (2023). Identification and mapping of potential recharge in the Middle Seybouse sub-catchment of the Guelma region (North East of Algeria): contribution of remote sensing, multi-criteria analysis, ROC-Curve and GIS. Acque Sotteranee - Italian Journal of Groundwater, 12(1), 25–37. https://doi.org/10.7343/as-2023-628</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>technical feasibility studies</i>	<i>Study consists of identifying soils with potential for areas to be developed in agriculture, taking into account climatic parameters and water resources, based on soil surveys and the geomorphology of the land, then analyses of soil samples in the laboratory, in the end a development action plan is decided</i>
<i>agricultural and soil technical study</i>	<i>study consists of identifying soils with potential in regions suitable for agriculture, taking into account climatic parameters and water resources, based on soil surveys and the geomorphology of the land, then analyzes of soil samples in the laboratory, ultimately a development plan for the regions by type of activity is decided</i>
<i>land use map of northern Algeria</i>	<i>study consists of processing medium resolution satellite images and classifying a stratification of land use in particular that of agriculture, identification missions of all classes identified in summer carried out throughout the territory concerned by the study, the result is the land use map with the surface area of each department with the appropriate statistics</i>
<i>land classification study</i>	<i>the study consists of carrying out very precise soil surveys in order to determine the cropping potential and to allow decision-makers to draw up the strategic action program and evaluate the appropriate forecast budgets.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
875844332	TM BLINACON

Short name: TM BLINACON

Address

Street	Cité 256Lgts Bt 06 N°02 Commune de Béjaia
Town	Bejaia
Postcode	06000
Country	Algeria

Webpage

Specific Legal Statuses

Legal person	no
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	02/10/2024 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **Tahar**

Last name* **MAZA**

E-Mail* **tahar.maza83@gmail.com**

Position in org. **Manager**

Department **TM BLINACON**

Same as organisation name

Same as proposing organisation's address

Street **Cité 256Lgts Bt 06 N°02 Commune de Béjaia**

Town **Bejaia**

Post code **06000**

Country **Algeria**

Website **https://www.tmblinacon.com/**

Phone **+213770240498**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Mazari	Ait Kaci	mazariaitkaci@gmail.com	+213553450400
Mohamed	Benchentouf	groupe.africatech@gmail.com	+213658594271
Zoubir	Meniche	menichezoubir@gmail.com	+213770358489
Zakia	Cherifi	cherifiz@yahoo.fr	+213676398815

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	Tahar	MAZA	Man	Algeria	Tahar.maza83@gmail.com	Category C Recognised	Leading	0009-0001-2986-8079	Orcid ID
Dr	Mazari	Ait Kaci	Man	Algeria	mazariaitkaci@gmail.com	Category B Senior resea	Team member	0000-0002-5272-3767	Orcid ID
Dr	Mohamed	Bouchentouf	Man	Algeria	groupe.africatech@gmail.com	Category B Senior resea	Team member		
Dr	Zakia	Cherifi	Woman	Algeria	cherifiz@yahoo.fr	Category B Senior resea	Team member		
Mr	Zoubir	Meniche	Man	Algeria	menichezoubir@gmail.com	Category C Recognised	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	IHDENE S., MENICHE Z. MAZA T. (2023). "Spatio-temporal optimization of composting: the case of poultry manure." <i>Journal of Circular Economy and Sustainable Development</i> . December Edition, Vol. 3, No. 2 (2023), pages 187-190.
Publication	MAZA Tahar et Al. (2023) <i>Training Reference on Soil Management of an Olive Grove</i> . Algeria, Ed: Agriculture Sector Support Program (PASA). 34 pages.
Publication	MAZA Tahar et Al. (2023) "Training Reference on Water Economy Management of an Olive Grove. Algeria, Ed: Agriculture Sector Support Program (PASA). 42 pages."
Publication	BOUCHENTOUF Med. (2023). <i>Study on the Agricultural Resources Situation Analysis and Transformation Plan AI Ula County</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Project (Dutch Embassy in Algeria)	Project on Improving Water Use in Potato Production in the Desert Regions of Algeria
Pilot Demonstration Sites (European Union)	Implementation and Supervision of Water Management and Development Techniques at 7 Pilot Sites for Olive Oil Production as part of the PASA Program.
Study (European Union)	Water and Environmental Diagnosis in the Olive Sector for the Support Program to the Agricultural Sector (PASA).

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999844282	UNIVERSIDAD DE MURCIA

Short name: UNIVERSIDAD DE MURCIA

Address

Street	AVENIDA TENIENTE FLORESTA S/N - EDIFICIO CO
Town	MURCIA
Postcode	30003
Country	Spain
Webpage	http://www.um.es/

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	23/03/1915 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Departamento de Ingeniería de la Información y las Comunicaciones	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	Facultad de Informática	
Town	MURCIA	
Postcode	30100	
Country	Spain	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title Dr

Gender Woman Man Non Binary

First name* **Antonio F.**

Last name* **Skarmeta Gómez**

E-Mail* **skarmeta@um.es**

Position in org. Full Professor

Department Ingeniería de la Información y las Comunicaciones

Same as organisation name

Same as proposing organisation's address

Street Facultad de Informática Campus de Espinardo

Town MURCIA

Post code 30100

Country Spain

Website www.um.es

Phone +XXX XXXXXXXXXX

Phone 2 +XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Antonio	Skarmeta	Man	Spain	skarmeta@um.es	Category A Top grade re	Leading	0000-0002-5525-1259	Orcid ID
Dr	Aurora	Gonzalez	Woman	Spain	aurora.gonzalez2@um.es	Category B Senior resea	Team member	0000-0002-4398-0243	Orcid ID
Dr	Miguel Angel	Zamora	Man	Spain	mzamora@um.es	Category B Senior resea	Team member	0000-0002-0130-2364	Orcid ID
Dr	Mercedes	Valdes	Woman	Spain	mdvaldes@um.es	Category C Recognised	Team member	0000-0003-2849-5829	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Mendoza-Bernal, J., González-Vidal, A., & Skarmeta, A. F. (2024). A Convolutional Neural Network approach for image-based anomaly detection in smart agriculture. Expert Systems with Applications, 247, 123210.</i>
Publication	<i>Argente, J. E., Yazici, B., Skarmeta, A. F., Richa, A., Touil, S., Díaz, V. J. R., & González, A. P. R. (2024). WATERMED4. 0: ICT Tool to Facilitate Collaborative Governance of Water Resources in the Mediterranean Agriculture. Integration of Core Sustainable Development Goals in Rural Areas: Current Practices of Water, Energy, Food, Climate Change, and Ecosystems, 267.</i>
Publication	<i>González-Vidal, A., Mendoza-Bernal, J., Ramallo, A. P., Zamora, M. Á., Martínez, V., & Skarmeta, A. F. (2022). Smart operation of climatic systems in a greenhouse. Agriculture, 12(10), 1729.</i>
Publication	<i>García, J. E. A., Yazici, B., Richa, A., Touil, S., Díaz, V. J. R., Ramallo-González, A. P., & Skarmeta, A. F. (2024). Digitalising governance processes and water resources management to foster sustainability strategies in the Mediterranean agriculture. Environmental Science & Policy, 158, 103805.</i>
Publication	<i>González-Vidal, A., Martínez-Ibarra, A., & Skarmeta, A. F. (2024). MultiBEATS: Blocks of eigenvalues algorithm for multivariate time series dimensionality reduction. Information Fusion, 104, 102159</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
PRIMA-WATERMED 4.0	<i>Watermed 4.0 - Efficient use and management of conventional and non-conventional water resources through smart technologies applied to improve the quality and safety of Mediterranean agriculture in semi-arid areas</i>
DEMETER (H2020-DT-2018-2) -	<i>Smart farming via GPS, soil scanning, data management, and IoT technologies could help attain the EU goal of ameliorating the quantity and quality of farming production. The EU-funded DEMETER is a large-scale project deployed in 18 countries, 15 of which are EU member states. The project will analyse data obtained from a wide range of actors (production sectors and systems) to provide an integrated interoperable data model enabling optimal resource management in the European agri-food sector.</i>
CLIMOS: Climate Monitoring and Decision Support	<i>CLIMOS aims to assist mitigation of climate- and climate change-induced emergence, transmission and spread of vector-borne and zoonotic pathogens based on Eco-health and One Health approaches. This will be achieved by quantifying climate and environmental-related drivers of sand fly vector populations and the sand fly-borne diseases (SFBDs) across Europe. The project will provide an Early Warning System (EWS) and decision support frameworks for more accurate climate and health modelling.</i>
BERRIES: GREENHOUSES 4.0	<i>BERRIES: GREENHOUSES 4.0 FOR SUSTAINABLE SUPERFOOD PRODUCTION general objective of this project is to develop an integrated management and control system for the sustainable cultivation of pigeon peas in greenhouses.</i>
AGROALNEXT	<i>AGROALNEXT is the complementary agri-food plan of I+D+I promoted for the Spanish government and seven regions (financed by EU Next Generation funds). The main goal of the project is to favour the double transformation, digital and sustainable, of the agri-food sector, to increase its competitiveness and achieve the climate and environmental objectives set in the Green Deal, while ensuring the supply of healthy, safe, sustainable and accessible food to the population, as pursued by the EU Farm to</i>

Administrative forms

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
PEANA	<i>PEANA is an experimentation platform for supporting evaluation of communication scenarios for IoT devices, grouped by test-beds, which allow experimenters to validate and assess their developments and deployments</i>
GAIA-5G	<i>GAIA 5G comprehends several network resources spread throughout Espinardo Campus in Murcia as well as in the Fuente Alamo Technology Park (60 km far away from the campus). GAIA 5G provide the virtualization for the Wireless connectivity, including 5G NSA, LoRaWAN and 802.11p</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
915346127	ASOCIACION VALENCIANA DE AGRICULTORES

Short name: AVA-ASAJA

Address

Street	CALLE GUILLEM DE CASTRO 79
Town	VALENCIA
Postcode	46008
Country	Spain
Webpage	www.avaasaja.org

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **Juan Salvador**

Last name* **Torres**

E-Mail* **juansalvador_torres@avaasaja.org**

Position in org. **General Secretary**

Department **Innovation**

Same as organisation name

Same as proposing organisation's address

Street **Calle Guillem de Castro 79**

Town **Valencia**

Post code **46008**

Country **Spain**

Website **https://www.avaasaja.org/**

Phone **+34963804606**

Phone 2 *+XXX XXXXXXXXXX*

Other contact persons

First Name	Last Name	E-mail	Phone
Cristina	Canet	cristina_canet@avaasaja.org	+34963804606
Barbara	Carreras	barbara_carreras@avaasaja.org	+34963804606
Ana	Garcia	ana_garcia@avaasaja.org	+34963804606
Carlos	Montesinos	carlos_montesinos@avaasaja.org	+34963804606

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	CARLOS	MONTESINOS	Man	Spain	Carlos_montesinos@avaasaja.org	Category B Senior resea	Leading	0000-0003-4327-5170	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input checked="" type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
AVI SENSOPLAG	<i>This project enhances the use of technologies such as drones, sensors and satellites across agricultural fields https://sensoplag.es/</i>
HE TRIBIOME	<i>HE TRIBIOME Project (in progress) about the study of soil biomodulators in wheat cultivation for tolerance to abiotic stress https://www.tribiome.eu/</i>
HE ECOLOOP	<i>The project is based on the agricultural circular economy for the production of biogas and soil-correcting biofertilizers from agricultural by-products https://ecoloop-project.eu/</i>
LIVESTOCK SECTOR REPRESENTATION	<i>AVA-ASAJA is an organization that advocate for and defend the interests of the livestock sector. We as an association work to influence public policy, promote sustainable practices, and defend the economic interests of livestock farmers and businesses. Besides, the association have a technical department that provides with technical advice to our associated farmers, as well as organizing regular workshop and journeys to keep updated the associated livestock farmers.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
Pilot sites for Nemesis	<i>Pilot sites for ES Living Lab integrating livestock and land management</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
907318989	EI JUNQUERO SA

Short name: EI JUNQUERO SA

Address

Street	CALLE ALCALA GALIANO 3 TERCERO
Town	MADRID
Postcode	28010
Country	Spain

Webpage

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **ALFONSO BALDUINO**

Last name* **CHICO DE GUZMAN ESCRIVÁ DE ROMA**

E-Mail* **achicodeguzman@gmail.com**

Position in org. **Manager**

Department **Management**

Same as organisation name

Same as proposing organisation's address

Street **CALLE MAYOR, 19**

Town **CEHEGIN**

Post code **30.430**

Country **Spain**

Website **www.lajunquera.com**

Phone **+34669735494**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Yanniek	Schoonhoven	yanniek@regeneration-academy.org	+34622145457

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	ALFONSO BALDUINO	CHICO DE GUZMAN ESCRIVÁ DE ROMANÍ	Man	Spain	achicodeguzman@gmail.com	Category B Senior resea	Leading		
Ms	Yanniek	Schoonhoven	Woman	Spain	yanniek@regeneration-academy.org	Category B Senior resea	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>Etomato H2020</i>	<i>Development of a course on multifunctional agriculture</i>
<i>Diverfarming</i>	<i>Research on the effects of temperature rise on cereal harvests and soil health.</i>
<i>Agrodiverso</i>	<i>How to bring back local varieties in the diet and market of rural areas</i>
<i>Regeneration Academy</i>	<i>Strong collaboration with the Regeneration Academy on the development of research and monitoring at La Junquera Farm</i>
<i>Lighthouse Farm network</i>	<i>Being one of the 12 lighthouse farms worldwide, network from Wageningen University</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<i>Virtual fencing system called NoFence</i>	<i>Virtual fencing system for cow herd management</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
952825666	FEDERACION DE COOPERATIVAS AGRARIASDE MURCIA S COOP

Short name: FEDERACION DE COOPERATIVAS AGRARIASDE MURCIA S COOP

Address

Street	CALLE CABALLERO 13
Town	MURCIA
Postcode	30002
Country	Spain
Webpage	www.fecoam.es

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	31/12/2015 - yes
SME self-assessment	31/12/2015 - yes
SME validation	28/08/1985 - yes

Administrative forms

Departments carrying out the proposed work

Department 1

Department name TECHNICAL DEPARTMENT not applicable

Same as proposing organisation's address

Street CALLE CABALLERO 13

Town MURCIA

Postcode 30002

Country Spain

Department 2

Department name GRANTS AND TRAINING DEPARTMENT not applicable

Same as proposing organisation's address

Street CALLE CABALLERO 13

Town MURCIA

Postcode 30002

Country Spain

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **ANTONIO**

Last name* **SANZ DE LA MORENA**

E-Mail* **asanz@fecoam.es**

Position in org. **MANAGER**

Department **MANAGEMENT**

Same as organisation name

Same as proposing organisation's address

Street **CALLE CABALLERO 13**

Town **MURCIA**

Post code **30002**

Country **Spain**

Website **https://fecoam.es/**

Phone **+34968351282**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
ANA BELEN	OLIVARES MARTÍNEZ	aolivares@fecoam.es	670056703
PEDRO	SANCHEZ SEIQUER	psanchez@fecoam.es	661407807

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	ANTONIO	SANZ DE LA MORENA	Man	Spain	asanz@fecoam.es	Category B Senior resea	Leading		

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Service	<i>Guide to Sustainable Agricultural Best Practices: Current Situation and Improvement Proposals in Agri-food Cooperatives. Project carried out within the framework of the Social Economy Pact of the Region of Murcia 2021-2024.</i>
Service	<i>Guide for the Preparation of the Social Responsibility Report (GRI 2021 version). Project carried out within the framework of the Social Economy Pact of the Region of Murcia 2021-2024.</i>
Service	<i>Study on Innovation, Technology, and Smart Specialization for Agricultural Cooperatives and the Social Economy of the Region of Murcia. Project carried out within the framework of the Social Economy Pact of the Region of Murcia 2021-2024.</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>LIFE-AQUEMFREE- LIFE13 ENV/ ES/000488. LIFE+</i>	<i>LIFE+ Environment Policy and Governance 2013. "In-Farm remediation by solar photocatalysis of agro-waste water with pesticides from remnants, cleaning and rinse" Role: Associated beneficiary</i>
<i>FP7-SME-2013, Research for the Benefit of SMEs</i>	<i>FP7-SME-2013, Research for the Benefit of SMEs, 604770-EUROPHA: "Novel technology to boost the European Bioeconomy: reducing the production costs of PHA biopolymer and expanding its applications as 100% compostable food packaging bioplastic"</i>
<i>LIFE-DRAINUSE- LIFE14 ENV ES 538 LIFE+ Environment</i>	<i>LIFE-DRAINUSE- LIFE14 ENV ES 538 LIFE+ Environment Policy and Governance 2014. Re-utilization of drainage solution from soilless culture in protected agriculture. From open to close system. Role: Associated beneficiary</i>
<i>COASTAL-H2020-RUR-2016-2017/ H2020-RUR-2017-2.</i>	<i>COASTAL-H2020-RUR-2016-2017/H2020-RUR-2017-2. COLLABORATIVE LAND-SEA INTEGRATION PLATFORM The overarching objective of COASTAL is to improve the rural-coastal synergies in strategic business and policy decision making and collaboration between coastal and rural actors. This is achieved by developing, demonstrating and applying a generic toolset and performance indicators by combining a multi-actor approach with system dynamics modelling.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<i>Agricultural farm, where two broccoli crop cycles</i>	<i>Pig slurry physical, chemical and biological properties. Soil physical, chemical and biological properties. Soil CO2 emissions Broccoli crop yield (t/ha). Broccoli quality (acidity after harvesting and refrigeration).</i>
<i>Agricultural farm with six experimental plots</i> Pig	<i>Pig slurry physical, chemical and biological properties: Soil physical, chemical and biological properties. Soil NH₃, CH₄, N₂O, CO₂ emissions.</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
934796858	ODIN SOLUTIONS SOCIEDAD LIMITADA
Short name: OdinS	
Address	
Street	CALLE PERU 5, NUM. 5, PLANTA 3, PUERTA 5, PO
Town	ALCANTARILLA MURCIA
Postcode	30820
Country	Spain
Webpage	www.odins.es
Specific Legal Statuses	
Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no
SME Data	
Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.	
SME self-declared status	31/12/2022 - yes
SME self-assessment	31/12/2022 - yes
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Research & Innovation	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	Calle Palma de Mallorca, 2	
Town	Murcia	
Postcode	30009	
Country	Spain	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **Rafael**

Last name* **Marin-Perez**

E-Mail* **rmarin@odins.es**

Position in org. **Research Director**

Department **Research & Innovation**

Same as organisation name

Same as proposing organisation's address

Street **Calle Palma de Mallorca, 2**

Town **Murcia** Post code **30009**

Country **Spain**

Website **www.odins.es**

Phone **+34868123395** Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Jesus	Sanchez-Gomez	jsanchez@odins.es	+34868123395

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Rafael	Marin-Perez	Man	Spain	rmarin@odins.es	Category A Top grade re	Leading	0000-0002-8521-1864	Orcid ID
Dr	Jesus	Sanchez-Gomez	Man	Spain	jsanchez@odins.es	Category B Senior resea	Team member	0000-0003-2673-3790	Orcid ID
Ms	Ana	Hermosilla	Woman	Spain	ahermosilla@odins.es	Category D First stage r	Team member	0000-0001-6860-5100	Orcid ID
Ms	Larissa	Haringer	Woman	Germany	lharinger@odins.es	Category D First stage r	Team member	0000-0003-2016-0071	Orcid ID
Ms	Miriam	Zambudio	Woman	Spain	mzambudio@odins.es	Category D First stage r	Team member	0009-0004-2834-4048	Orcid ID
Ms	Maria	Lopez Martinez	Woman	Spain	mlopez@odins.es	Category D First stage r	Team member		Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Innovative security and compression for constrained IoT networks. Authors: Feijoo-Añazco, Anthony., Garcia-Carrillo, Dan, Sanchez-Gomez, Jesus, & Marin-Perez, Rafael. (IF 5.9) 2023. Internet of Things. https://doi.org/10.1016/j.iot.2023.100899</i>
Publication	<i>Smart farming IoT platform based on edge and cloud computing. Biosystems engineering (IF 2.983). 2019. Authors: Miguel Ángel Zamora Izquierdo, José Santa, Juan Antonio Martínez, Vicente Martínez, Antonio F. Skarmeta. DOI: 10.1016/j.biosystemseng.2018.10.014</i>
Good	<i>ODINS has developed a wide set of hardware products such as wireless sensors networks, RISC-V devices, IoT/CPS sensors/controllers and Edge/Fog nodes based on wireless technologies (Zigbee, Zwave, 6lowpan, Sigfox, LoRa and 5G/NB-IoT, Satellite-IoT) for monitoring, control and intelligent operations in several industrial sectors.</i>
Software	<i>AI and DigitalTwin platform with Decision Support services that integrates information from Augmented Reality App, digital agro-book, IoT/Edge/Fog devices, satellite online sources (e.g. Copernicus, Sentinel-2) and other sources (i.e. weather forecasting, drone images) in order to optimize the irrigation, fertilization and pest management in greenhouses and open-field crops.</i>
Software	<i>An interoperable data-driven platform with cybersecurity by-design mechanisms for ensuring the security and privacy for data exchange, the seamless integration of sensors/actuators/ systems in the pilot sites and enabling artificial intelligence processing and knowledge generation for the cloud applications and user-centric services.</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>DEMETER, GA 857202, H2020-DT-ICT-08-2019</i>	<i>Building an Interoperable, Data-Driven, Innovative and Sustainable European Agri-Food Sector. ODINS researches IoT/AI technologies to develop real-world large-scale pilots deployed in 18 countries, 15 of which are EU member states of smart agriculture. https://h2020-demeter.eu/</i>
<i>EDEN, AEI Reference CPP2021-009146</i>	<i>EDEN aims to develop an automated production system based on AI, DigitalTwin and Robotic for the sustainable production of healthy food in greenhouse farming. ODINS is technological developer to incorporate automation and robotisation of the entire process and the development of an intelligent control system for the management and optimisation of all the crop parameters that can be controlled.</i>
<i>OPEN2CLOSE, AEI Reference CPP2021-008538</i>	<i>OPEN2CLOSE is focused on developing a full recirculation system in greenhouse soilless cropping systems to eliminate the pollution of water and soils by preventing the drains of 31% nitrates and 48% potassium into the environment in order to save water and fertilisers. ODINS is the main technological provider to automatise the system based on IoT and AI.</i>
<i>HYPHER-AI, GA 101135982, HORIZON-CL4-2023-DATA-01-0</i>	<i>This project implements a hyper-distributed artificial intelligence platform for network resources automation and management towards more efficient data processing applications. ODINS leads the trusted data spaces and cybersecurity in the hyper-distributed AI applications. https://hyper-ai-project.eu/</i>
<i>PRECIMED, PRIMA IDI20190230</i>	<i>A European Project to research a decision support system for optimizing the irrigation and nutrition of open crops in fields of Mediterranean area. ODINS is in charge of developing the IoT devices for open crops and also implementing a cloud platform for data analytic and decision support services. https://precimed-prima.org</i>

Administrative forms

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<i>Modular, secure, and interoperable products</i>	<i>These hardware products allow connecting and managing intelligently, and in a secure way any infrastructure and mobile systems. Among these products there are IoT sensors, actuators, cyber-physical systems, Fog/Edge nodes and cloud data-driven platforms for user-centric decision services.</i>
<i>IoT/Edge/AI/DT Testbed</i>	<i>An IoT/Edge/AI/DT testbed of IPv6/6lowpan/5G devices and a data centre for artificial intelligence processing, DigitalTwin simulations, and services provision.</i>
<i>Agriculture pilots in greenhouse and open field</i>	<i>The pilots are managed by ODINS smart agriculture platform to collect data/information from crops, plants, soil, weather, satellite/drones images, and IoT/edge/fog devices for the intelligent & optimal management of irrigation, nutrition, pest, water, and energy.</i>
<i>Network/Computing infrastructures</i>	<i>ODINS participates in the experiments of telecontrol systems for network/computing infrastructures located in Murcia. Concretely, ODINS is collaborating in the deployment and evaluation of IoT/5G sensors and Edge/Fog nodes in the testbeds of PEANA and GAIA-5G+.</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
946602825	DIABALKANIKO KENTRO PERIBALLONTOS

Short name: INTERBALKAN ENVIRONMENT CENTER

Address

Street	18 LOUTRON STR
Town	LAGADAS THESSALONIKI
Postcode	572 00
Country	Greece
Webpage	www.i-bec.org

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Ms**

Gender Woman Man Non Binary

First name* **ELENI**

Last name* **LIANOU**

E-Mail* **info@i-bec.org**

Position in org. **Manager**

Department **DIABALKANIKO KENTRO PERIBALLONTOS**

Same as organisation name

Same as proposing organisation's address

Street **18 LOUTRON STR**

Town **LAGADAS THESSALONIKI**

Post code **572 00**

Country **Greece**

Website **www.i-bec.org**

Phone **+302394023485**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Maria	Giortsou	mgiortsou@yahoo.gr	+302310991783
Paraskevi	Chantzi	pchantzi@auth.gr	+302310991783

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Paraskevi	Chantzi	Woman	Greece	pchantzie@auth.gr	Category B Senior resea	Leading	0000-0001-5444-4887	Orcid ID
Ms	Maria	Giortsou	Woman	Greece	mggiortsou@yahoo.gr	Category B Senior resea	Team member	0000-0003-4400-038X	Orcid ID
Mr	George	Galanis	Man	Greece	gegalani@hotmail.com	Category B Senior resea	Team member	0009-0001-6582-8410	Orcid ID
Mr	Konstantinos - Vasileios	Karyotis	Man	Greece	kbkaryotis@gmail.com	Category B Senior resea	Team member	0000-0003-1190-5772	Orcid ID
Ms	Gnostothea	Stefanidou	Woman	Greece	gnostothea@gmail.com	Category B Senior resea	Team member	0009-0000-4509-7510	Orcid ID
Dr	Samarinas	Nikiforos	Man	Greece	samnikiforos1@gmail.com	Category B Senior resea	Team member	0000-0002-1619-778X	Orcid ID
Mr	Dimitrios	Gkoutzikostas	Man	Greece	dimitris_m7@hotmail.com	Category B Senior resea	Team member	0009-0009-2361-8528	Orcid ID
Mr	Vasilis	Roussonikolos	Man	Greece	basnoet@yahoo.gr	Category B Senior resea	Team member	0009-0009-9274-742X	Orcid ID
Ms	Danae	Papadopoulou	Woman	Greece	danaepap@hotmail.com	Category B Senior resea	Team member	0009-0003-3905-2625	Orcid ID
Ms	Daphne	Kitsou	Woman	Greece	daphnekitsou@gmail.com	Category C Recognised	Team member	0009-0001-6282-5265	Orcid ID
Mr	Achilleas	Zalidis	Man	Greece	achilles.zalidis@gmail.com	Category C Recognised	Team member	0000-0001-6541-1677	Orcid ID
Ms	Dimitra	Palatza	Woman	Greece	dpalantza@gmail.com	Category C Recognised	Team member	0009-0008-2924-6035	Orcid ID
Ms	Dimitra	Xenitopoulou	Woman	Greece	dimxenit@gmail.com	Category C Recognised	Team member	0009-0005-3352-0146	Orcid ID
Ms	Argyro	Papastergiou	Woman	Greece	papastergiou_argiro@yahoo.com	Category C Recognised	Team member	0009-0008-3547-3728	Orcid ID
Mr	Sotirios	Kechagias	Man	Greece	sot.kechagias@gmail.com	Category C Recognised	Team member	0000-0001-7599-1142	Orcid ID
Mr	George	Boletos	Man	Greece	boletosgiorgos@gmail.com	Category C Recognised	Team member	0009-0003-1318-6705	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input checked="" type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Tsakiridis, N. L., Chadoulos, C. G., Theocharis, J. B., Ben-Dor, E., and C. Zalidis, G.: A three-level Multiple-Kernel Learning approach for soil spectral analysis, Neurocomputing, https://doi.org/10.1016/j.neucom.2020.01.008, 2020.</i>
Publication	<i>Tsakiridis, N.L., Keramaris, K.D., Theocharis, J.B., Zalidis, G.C. Simultaneous prediction of soil properties from VNIR-SWIR spectra using a localized multi-channel 1-D convolutional neural network Geoderma, 367, art. no. 114208, DOI: 10.1016/j.geoderma.2020.114208. 2020</i>
Publication	<i>Tziolas, N., Tsakiridis, N., Ben-Dor, E., Theocharis, J., Zalidis, G., Employing a multi-input deep convolutional neural network to derive soil clay content from a synergy of multi-temporal optical and radar imagery data Remote Sensing, 12 (9), art. no. 1389, DOI: 10.3390/RS12091389. 2020</i>
Publication	<i>Tziolas, N., Tsakiridis, N., Ogen, Y., Kalopesa, E., Ben-Dor, E., Theocharis, J., Zalidis, G., An integrated methodology using open soil spectral libraries and Earth Observation data for soil organic carbon estimations in support of soil-related SDGs (Remote Sensing of Environment, 244, art. no. 111793, DOI: 10.1016/j.rse.2020.111793. 2020</i>
Publication	<i>Tsakiridis, N.L., Theocharis, J.B., Panagos, P., Zalidis, G.C., An evolutionary fuzzy rule-based system applied to the prediction of soil organic carbon from soil spectral libraries Applied Soft Computing Journal, 81, art. no. 105504, DOI: 10.1016/j.asoc.2019.105504. 2019</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
E-SHAPE	<i>e-shape (https://e-shape.eu/) is a unique initiative that brings together decades of public investment in Earth Observation and in cloud capabilities into services and for decisionmakers, the citizens, the industry and the researchers. It allows Europe to position itself as global force in Earth observation through leveraging Copernicus, making use of existing Europe capacities and improving user uptake of the data from GEO assets</i>
CARBONICA	<i>The main objective of this project is to establish CARBONICA Excellence Hub by connecting the innovation ecosystems of Cyprus, Greece and North Macedonia, while enhancing their TRL as service providers, based on cutting-edge technologies (Earth Observation – EO; in situ data; digital agriculture etc.) in carbon farming.</i>
DIONE	<i>DIONE (https://dione-project.eu/) proposes a close-to-market (TRL7) area-based direct payments monitoring toolbox that will address the forthcoming Modernised CAP regulation of using automated technologies to ensure more frequent, accurate and inexpensive compliance checks.</i>
Soils4Africa	<i>The aim of Soils4Africa is to provide an open-access soil information system with a set of key indicators and underpinning data, accompanied with a methodology for repeated soil monitoring across the African continent. The soil information system will become part of the knowledge and information system of FNSSA and will be hosted by an African institute.</i>
EIFFEL	<i>EIFFEL will offer the EO-based community the ground-breaking capacity of exploiting existing GEOSS and external datasets, with minimal new data collection activities. Added-value services interoperable with GEOSS will be designed, using cognitive search and metadata augmentation tools based on Artificial Intelligence (AI),</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
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Administrative forms

<i>GEOCRADLE Soil Spectral Library (SSL)</i>	<i>A unique and diverse open database on agricultural soils information (soil properties such as organic carbon, pH nitrates etc.) covering the Balkans, Middle East and North Africa region. National data archives have already been developed for 9 countries across the Mediterranean</i>
<i>Airborne (and Ground Based)multi / hyperspectral</i>	<i>Airborne Multispectral (TetraCAM 400 RGNIR camera) and Thermal Camera (FLIR Vue Pro) for crop and soil monitoring and state-of-the-art Ground based Hyperspectral Camera (Specim 400-1000nm and Cubert Firefly 2185 400-1000nm) providing vast amount of spectral information for high-demand reflectance</i>
<i>Constellation of Unmanned Aerial Vehicles</i>	<i>A UAV platform with combined capacity of multispectral and thermal camera that performs mapping tasks associated with quantitative and qualitative characteristics of soil and croplands.</i>
<i>High Fidelity Mobile Spectral Scanner</i>	<i>Mobile proximal soil sensor enabling digital soil mapping in order to capture zones of different management needs is performed with the soil scanner equipment (Vis-NIR sensor). Data achievement and mapping analysis is performed in real time during scanning of the field</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
996621457	MAGGIOLI SPA

Short name: MAGGIOLI

Address

Street	VIA DEL CARPINO 8
Town	SANTARCANGELO DI ROMAGNA
Postcode	47822
Country	Italy
Webpage	www.maggioli.com

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	19/02/1996 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name R&D - IT not applicable

Same as proposing organisation's address

Street VIA DEL CARPINO 8

Town SANTARCANGELO DI ROMAGNA

Postcode 47822

Country Italy

Department 2

Department name R&D - GR not applicable

Same as proposing organisation's address

Street Andrea Papandreou 19

Town Athens

Postcode 15124

Country Greece

Links with other participants

Type of link	Participant
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Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **Panos**

Last name* **Papastergiou**

E-Mail* **panos.papastergiou@maggioli.gr**

Position in org. **Senior Project Manager**

Department **R&D**

Same as organisation name

Same as proposing organisation's address

Street **Andrea Papandreou 19**

Town **Athens**

Post code **15124**

Country **Greece**

Website **https://www.maggioli.com/en-us**

Phone **+30210008 3980**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Stelios	Pantelopoulos	stelios.pantelopoulos@maggioli.gr	+302100083980

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier	
Dr	Panos	Papastergiou	Man	Greece	Panos.papastergiou@maggioli.gr	Category B Senior resea	Leading	0000-0003-3663-6476	Orcid ID	
Mr	Giorgos	Kolokythas	Man	Greece	george.kolokythas@maggioli.gr	Category C Recognised	Team member	https://www.linkedin.com/in/gkolokythas/	Other ID	LinkedIn
Mr	Dimitris	Verlekis	Man	Greece	dimitris.verlekis@maggioli.gr	Category C Recognised	Team member	https://www.linkedin.com/in/dimitris-verlekis	Other ID	LinkedIn

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Kostas Kalaboukas, Dimitris Kiritsis, George Arampatzis, Governance framework for autonomous and cognitive digital twins in agile supply chains, Computers in Industry, Volume 146, 2023, 103857, ISSN 0166-3615, https://doi.org/10.1016/j.compind.2023.103857 . (https://www.sciencedirect.com/science/article/pii/S0166361523000076)
Publication	Eirinakis, P.; Lounis, S.; Plitsos, S.; Arampatzis, G.; Kalaboukas, K.; Kenda, K.; Lu, J.; Rožanec, J.M.; Stojanovic, N. Cognitive Digital Twins for Resilience in Production: A Conceptual Framework. Information 2022, 13, 33. https://doi.org/10.3390/info13010033
Publication	Kalaboukas, K.; Rožanec, J.; Košmerlj, A.; Kiritsis, D.; Arampatzis, G. Implementation of Cognitive Digital Twins in Connected and Agile Supply Networks—An Operational Model. Appl. Sci. 2021, 11, 4103. https://doi.org/10.3390/app11094103
Publication	P. Eirinakis et al., "Enhancing Cognition for Digital Twins," 2020 IEEE International Conference on Engineering, Technology and Innovation (ICE/ITMC), Cardiff, UK, 2020, pp. 1-7, doi: 10.1109/ICE/ITMC49519.2020.9198492. keywords: {Cognition;Industries;Production facilities;Data models;Manufacturing;Optimization;Industry 4.0;Digital Transformation;Cognitive Factory;Digital Twins;Enhanced Cognitive Twins},

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Plooto	"Product Passport Through Twinning of Circular Value Chains", Horizon Europe, Grant Agreement: 101092008, Plooto delivers: a) a transformation framework for materials/products, with processes for SRM use from waste deposit to new products, and governance models for circular value chains; b) ICT tools for modelling product, production processes and supply chains; c) material certification and product passport; and d) A circular sustainability balanced scorecard. https://www.plooto-project.eu/
TREEADS	A Holistic Fire Management Ecosystem for Prevention, Detection and Restoration of Environmental Disasters Horizon Europe, Grant agreement ID: 101036926, 2021-2025, The EU-funded TREEADS project will focus on the forests at risk of wildfire to develop new products and integrate them in a holistic Fire Management platform aimed at optimising and reusing the existing socio-technological resources. https://cordis.europa.eu/project/id/101036926 https://treads-project.eu/

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
997334989	INTERNATIONAL CENTRE FOR RESEARCH IN AGROFORESTRY (ICRAF)

Short name: WORLD AGROFORESTRY CENTRE INTERNATIONAL CENTRE FOR RESEARCH IN AGROFORESTRY
ICRAF

Street	UNITED NATIONS AVENUE GIGIRI
Town	NAIROBI
Postcode	00100
Country	Kenya
Webpage	http://www.worldagroforestry.org/

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	21/11/1978 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Soil and Land Health	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	UNITED NATIONS AVENUE GIGIRI	
Town	NAIROBI	
Postcode	00100	
Country	Kenya	

Links with other participants

Type of link	Participant
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Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **Zampela**

Last name* **Pittaki**

E-Mail* **z.pittaki@cifor-icraf.org**

Position in org. **Scientist**

Department **Soil and Land Health**

Same as organisation name

Same as proposing organisation's address

Street **UNITED NATIONS AVENUE GIGIRI**

Town **NAIROBI**

Post code **00100**

Country **Kenya**

Website **https://www.worldagroforestry.org/**

Phone **+XXX XXXXXXXXXX**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Bryony	Bidder	b.bidder@cifor-icraf.org	+XXX XXXXXXXXXX
Leigh	Winowiecki	l.a.winowiecki@cifor-icraf.org	+XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Leigh	Winowiecki	Woman	United States	L.A.winowiecki@cifor-icraf.org	Category A Top grade re	Leading	0000-0001-5572-1284	Orcid ID
Dr	Zampela	Pittaki	Woman	Cyprus	z.pittaki@cifor-icraf.org	Category C Recognised	Team member	0000-0002-5372-1798	Orcid ID
Dr	Tor	Vagen	Man	Norway	t.vagen@cifor-icraf.org	Category A Top grade re	Team member	0000-0002-8699-731X	Orcid ID
Mr	Elvis	Weullow	Man	Kenya	e.weullow@cifor-icraf.org	Category D First stage r	Team member	0000-0002-0574-7424	Orcid ID
Mrs	Christine	Magaju	Woman	Kenya	c.magaju@cifor-icraf.org	Category D First stage r	Team member	0000-0003-3948-317X	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Vågen, T.-G., & Winowiecki, L. A. (2019). Predicting the Spatial Distribution and Severity of Soil Erosion in the Global Tropics using Satellite Remote Sensing. <i>Remote Sensing</i> , 11(15), 1800. doi:10.3390/rs11151800
Publication	Winowiecki, L. A., et al. (2021). Bringing evidence to bear for negotiating tradeoffs in sustainable agricultural intensification using a structured stakeholder engagement process. <i>International Journal of Agricultural Sustainability</i> , 19(5-6), 474-496. doi:10.1080/14735903.2021.1897297
Publication	Winowiecki, L. A., et al. (2021). Assessing soil and land health across two landscapes in eastern Rwanda to inform restoration activities. <i>SOIL</i> , 7(2), 767-783. doi:10.5194/soil-7-767-2021
Dataset	Vågen, Tor-Gunnar; Winowiecki, L.A; Desta, Luseged; Tondoh, Ebagnerin Jérôme; Weullow, Elvis; Shepherd, Keith; Sila, Andrew, 2020, "Mid-Infrared Spectra (MIRS) from ICRAF Soil and Plant Spectroscopy Laboratory: Africa Soil Information Service (AfSIS) Phase I 2009-2013", https://doi.org/10.34725/DVN/QXCWP1 , ICRAF, V1, UNF:6:BMN2MBGqFewDKHPgleRjog
Software	The Regreening Africa App is a mobile-based android application that allows users to collect data at farm level on a range of land restoration practices that allows for robust landscape level monitoring.

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Regreening Africa	Equip countries with surveillance and analytic tools on land degradation dynamics, including the social and economic dimensions, to support strategic decision-making and monitoring for the scaling-up of evergreen agriculture; support countries in the accelerated scaling-up of evergreen agriculture, along with the development of agroforestry value chains; development of the App for helping farmers, government agents and project officers to collect data on key indicators of land restoration.
SAIRLA	Developed Sustainable Agricultural Intensification (SAI) innovations; develop environmentally and financially sustainable enterprises and boost productivity; tools for stakeholder engagement with evidence; developed the Stakeholder Approach to Risk Informed and Evidence Based Decision Making (SHARED) approach.
Agroforestry and Land Health	Soil property maps; land degradation risk maps; estimation of carbon sequestration; capacity building; development of an interactive online platform to inform the decision-making.
SOILSCAPE	SOILSCAPE harnesses the power of Cultural and Creative Industries (CCIs), artists, and civil society organisations (CSOs) to promote soil preservation across Europe and beyond. The project unfolds through 4 key stages: (1) Contemplation: Consulting stakeholders to understand individual perception on soils, arts, and links with societal values; (2) Preparation: Developing people-centric transformative strategies, including an artistic and creative international soil network.
ZIFLP	Establish baseline knowledge of soil productivity and land degradation; usage of Land Degradation Framework (LDSF) tool; increase soil and crop productivity; build capacity of Ministry of Agriculture staff for use of the interactive dashboard for resilient diagnostic and decision making in soil fertility recommendations; establish and conduct a monitoring programme for land health and degradation.

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure or equipment	Short description (Max 300 characters)
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Administrative forms

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Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999693350	ADELPHI RESEARCH GEMEINNUTZIGE GMBH

Short name: ADELPHI RESEARCH GEMEINNUTZIGE GMBH

Address

Street	ALT-MOABIT 91
Town	BERLIN
Postcode	10559
Country	Germany
Webpage	https://adelphi-research.de/en

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	31/12/2020 - yes
SME self-assessment	31/12/2020 - yes
SME validation	07/10/2008 - yes

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
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Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **André**

Last name* **Müller**

E-Mail* **mueller@adelphi.de**

Position in org. **Advisor**

Department **ADELPHI RESEARCH GEMEINNUTZIGE GMBH**

Same as organisation name

Same as proposing organisation's address

Street **ALT-MOABIT 91**

Town **BERLIN**

Post code **10559**

Country **Germany**

Website **https://adelphi.de/**

Phone **+49(30)8900068-910**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Sarah	Velten	velten@adelphi.de	+49(30)8900068-340
Nanne	Zwagerman	zwagerman@adelphi.de	+49(30)8900068-58

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	André	Müller	Man	Germany	mueller@adelphi.de	Category C Recognised	Leading	0000-0002-0990-6314	Orcid ID
Dr	Sarah	Velten	Woman	Germany	velten@adelphi.de	Category C Recognised	Team member	0000-0001-6771-4946	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input checked="" type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	European Union (2022): "The European nature protection toolkit: Toolkit for educators, students aged 13-16 years old" The Toolkit has been elaborated by adelphi, MIO-ECSDE and Netcompany-Intrasoft S.A. as part of the contract "Increasing public awareness about EU nature protection policy – utilising EU nature data", funded by the European Commission.
Publication	Mueller, A, Detges, A., Pohl, A. Reuter, M. H., Rochowski, L. Volkholz, J. and E. Woertz (2021) Climate change, water and future cooperation and development in the Euphrates-Tigris basin.
Publication	Kerres, M; Servos, Kramer, A., Hattermann, F., Tänzler, D., Pilz, T. und Mueller, A. (2020): Stop Floating, Start Swimming. Water and climate change – interlinkages and prospects for future action. Bonn/Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).
Publication	adelphi, Fresh Thoughts and PIK 2020: Climate change and the European water dimension: Enhancing resilience. Policy Paper. Berlin: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety.

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
EU Nature Conservation Policy	European Commission, DG ENV (2020-2022): The aim of the project was to raise awareness of the EU nature directives and the Natura 2000 network. For this purpose, existing EU data was processed by experts in the fields of biodiversity, communication and education. Websites for the general public have been created, a user-friendly Natura 2000 map was developed and tools and products for teachers have been provided to inspire young people about nature.
Support for coexistence with large carnivores	European Commission (2023-2027): Management of the Secretariat of regional Large Carnivores (LC) Stakeholder Platforms; collection of data on LC distribution, damages caused, damage mitigation measures; provision of best practice methods and tools; development of a communication campaign, targeting especially young people, and the dissemination of scientific information on large carnivores in order to counteract fake news regarding the topic.
GoNEXUS	European Commission (2021-2025): Developing policy briefs on the WEF Nexus and EU Water Cooperation, in addition to Conducting a Policy Dialogue; Conducting multi-stakeholder workshops, i.e. in the Zambezi River Basin; indicator-based assessment framework for analysis of the WEF nexus; Implementing dissemination activities, including trainings and webinars
Climate Change and the European Water Dimension	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (2020-2021): Developed background paper and policy paper on water-related climate adaptation in EU; Contributed to conference concept and managing logistics, i.e. moderation, website, and live streams.
CASCADES	European Commission (2019-2023): Authored study on climate change, water cooperation and security for Euphrates-Tigris River Basin; Carried out three workshops with high-ranking stakeholders focused on scenario building activities; Developed recommendations for EU policy to improve climate resilience of water management

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999975523	UNIVERSITY OF DUNDEE

Short name: UNIVDUN

Address

Street	Nethergate
Town	DUNDEE
Postcode	DD1 4HN
Country	United Kingdom
Webpage	www.dundee.ac.uk

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	18/03/2014 - no
SME self-assessment	18/03/2014 - no
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	School of Art and Design	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	13 Perth Road	
Town	Dundee	
Postcode	DD1 4HT	
Country	United Kingdom	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title Prof.

Gender Woman Man Non Binary

First name* **Mel**

Last name* **Woods**

E-Mail* **m.j.woods@dundee.ac.uk**

Position in org. Chair of Creative Intelligence, Co-Director Centre for Ecology Futures

Department Design and Making

Same as organisation name

Same as proposing organisation's address

Street 13 Perth Road

Town Dundee

Post code DD6 8LN

Country United Kingdom

Website m.j.woods@dundee.ac.uk

Phone +441382384646

Phone 2 +XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Prof	Mel	Woods	Woman	United Kingdom	m.j.woods@dundee.ac.uk	Category A Top grade re	Leading	0000-0002-5507-0976	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management

Communication, dissemination and engagement

Provision of research and technology infrastructure

Co-definition of research and market needs

Civil society representative

Policy maker or regulator, incl. standardisation body

Research performer

Technology developer

Testing/validation of approaches and ideas

Prototyping and demonstration

IPR management incl. technology transfer

Public procurer of results

Private buyer of results

Finance provider (public or private)

Education and training

Contributions from the social sciences or/and the humanities

Other
If yes, please specify: (Maximum number of characters allowed: 50)

Social Innovation

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Coulson, S., Woods, M. (2021). Citizen Sensing: An Action-Orientated Framework for Citizen Science. <i>Frontiers in Communication</i> , 6, Article 629700. https://doi.org/10.3389/fcomm.2021.629700
Publication	Woods, M, Balestrini, M, Bejtullahu, S, Bocconi, S, Boerwinkel, G, Boonstra, M, Boschman, D-S, Camprodon, G, Coulson, S, Diez, T, Fazey, I, Hemment, D, van den Horn, C, Ilazi, T, Jansen-Dings, I, Kresin, F, McQuillan, D, Nascimento, S, Pareschi, E, Polvora, A, Salaj, R, Scott, M & Seiz, G 2018, Citizen Sensing: A Toolkit. Making Sense. https://doi.org/10.20933/100001112
Publication	Fazey, I., Schöpke, N., Caniglia, G., Hodgson, A., Kendrick, I., Lyon, C., Page, G., Patterson, J., Riedy, C., Strasser, T., Verveen, S., Adams, D., Goldstein, B., Klaes, M., Leicester, G., Linyard, A., McCurdy, A., Ryan, P., Sharpe, B., ... Woods, M. Young, H. R. (2020). Transforming knowledge systems for life on Earth: Visions of future systems and how to get there. <i>Energy Research and Social Science</i> , 70, Article 101724. https://doi.org/10.1016/j.erss.2020.101724
Publication	Coulson, S., Woods, M., Scott, M., & Hemment, D. (2018). Making Sense: Empowering participatory sensing with transformation design. <i>Design Journal</i> , 21(6), 813-833. https://doi.org/10.1080/14606925.2018.1518111
Publication	Coulson, S., Woods, M., Scott, M., Hemment, D., & Balestrini, M. (2018). Stop the Noise! Enhancing Meaningfulness in Participatory Sensing with Community Level Indicators. In <i>Proceedings of the 2018 Designing Interactive Systems Conference</i> (pp. 1183-1192). Association for Computing Machinery (ACM). https://doi.org/10.1145/3196709.3196762

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Urban ReLeaf	Citizen-powered data ecosystems for inclusive and green urban transitions HORIZON-CL6-2022-GOVERNANCE-01-08 - Uptake and validation of citizen observations to complement authoritative measurement within the urban environment and boost related citizen engagement Grant agreement ID: 101086638 https://urbanreleaf.eu
WeObserve	An Ecosystem of Citizen Observatories for Environmental Monitoring SC5-19-2017 - Coordination of citizens' observatories initiatives Grant agreement ID: 776740 https://www.weobserve.eu/
GROW Observatory	Grant agreement ID: 690199 SC5-17-2015 - Demonstrating the concept of 'Citizen Observatories' https://growobservatory.org/
Making Sense	Grant agreement ID: 688620 ICT-10-2015 - Collective Awareness Platforms for Sustainability and Social Innovation https://making-sense.eu/

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
905106322	EUROPEAN RURAL DEVELOPMENT NETWORK

Short name: European Rural Development Network

Address

Street	UL OWOCOWA 8
Town	MILANOWEK
Postcode	05-822
Country	Poland
Webpage	www.erdn.eu

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	no
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Research	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	Dembego 6/79	
Town	Warszawa	
Postcode	02-796	
Country	Poland	

Links with other participants

Type of link	Participant
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Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Prof.**

Gender Woman Man Non Binary

First name* **Paweł**

Last name* **Chmieliński**

E-Mail* **pawel.chmielinski@erdn.eu**

Position in org. **President**

Department **Research**

Same as organisation name

Same as proposing organisation's address

Street **Dembego 6/79**

Town **Warszawa**

Post code **02-796**

Country **Poland**

Website **www.erdn.eu**

Phone **+48504854669**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Barbara	Wieliczko	barbara.wieliczko@erdn.eu	+48606364291
Marcin	Zekalo	marcin.zekalo@erdn.eu	+48604627913

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Prof	Paweł	Chmieliński	Man	Poland	pawel.chmielinski@erdn.eu	Category B Senior resea	Leading	0000-0001-8377-0702	Orcid ID
Prof	Barbara	Wieliczko	Woman	Poland	barbara.wieliczko@erdn.eu	Category B Senior resea	Team member	0000-0003-3770-0409	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input checked="" type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Chmieliński P., Wieliczko B., 2022, Research and innovation challenges for better policies in food systems and bioeconomy transitions – evidence from Poland, International Food and Agribusiness Management Review Volume 25, Issue 5, 789-801. DOI: 10.22434/IFAMR2021.0156</i>
Publication	<i>Wieliczko B., Chmieliński P., 2022, MAP Position Paper (Mazowieckie, Poland) -Towards sustainable and resilient value chains. DOI: 10.5281/zenodo.7234746</i>
Publication	<i>Chmieliński P., Wrzascz W., Zieliński M., Wigier M., 2022, Intensity and Biodiversity: The 'Green' Potential of Agriculture and Rural Territories in Poland in the Context of Sustainable Development, Energies 15, 2388. DOI: 10.3390/en15072388</i>
Publication	<i>Kozyra J., Chmieliński P., Jurga P., Maciejczak M., Borzęcka M., 2023, Executive summary of the strategic concept paper for bioeconomy: Poland. Available at: https://bioeast.eu/download/pl-concept-paper-summary/</i>
Publication	<i>Chmieliński P., 2021, Towards a strategic approach to research and innovation for food systems transformation in Central and Eastern Europe, Proceedings of the 10th International Scientific Conference Rural Development 2021, 339-344. DOI: 10.15544/RD.2021.059</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>BioEastsUP (H2020)</i>	<i>The overall objective of BIOEASTsUP project is to support the BIOEAST initiative and Action Plan for transition of 11 Central and Eastern European (CEE) to bioeconomy.</i>
<i>SHERPA (H2020)</i>	<i>Sustainable Hub to Engage into Rural Policies with Actors (SHERPA) is a four-year project (2019-2023) with 17 partners funded by the Horizon 2020 programme. The project aims to gather knowledge that contributes to the formulation of recommendations for future policies relevant to EU rural areas, by creating a science-society-policy interface.</i>
<i>GRANULAR (Horizon Europe)</i>	<i>GRANULAR will give rural actors novel data and re-useable tools to lead public action in rural areas. GRANULAR will create a Rural Compass, that take into account the factors affecting rural communities and their functional characteristics, informing policymakers and rural actors for the design of tailored rural policies.</i>
<i>PoliRural (H2020)</i>	<i>PoliRural provides a set of knowledge resources including an inclusive learning environment where rural populations, researchers and policymakers come together to address common problems; an evaluation exercise that uses text mining to assess the perceived effectiveness of past or planned policy interventions; and a foresight study that will collect the development trajectory of agriculture and its allied sectors until 2040 using several scenarios in which the evolution of rural populations.</i>
<i>Tools4CAP (Horizon Europe)</i>	<i>Tools4CAP is going to create an innovative toolbox empowering effective CAP governance towards EU ambitions. Tools4CAP will support the implementation of National Strategic Plans 2023-2027, and lay the foundations for sound preparation of Post-2027 Strategic Plans.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
891970776	CIBOS INNOVATION IDIOTIKI KEFALAIOUCHIKI ETAIREIA

Short name: CIBOS INNOVATION PRIVATE COMPANY

Address

Street	ZAN MOREAS 40
Town	ATHINA
Postcode	11745
Country	Greece
Webpage	https://cibos.gr/

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	31/12/2022 - yes
SME self-assessment	31/12/2022 - yes
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Dr**

Gender Woman Man Non Binary

First name* **Athanasia**

Last name* **Tsertou**

E-Mail* **athanasia.tsertou@cibos.gr**

Position in org. **CTO**

Department **CIBOS INNOVATION IDIOTIKI KEFALAIOUCHIKI ETAIREIA**

Same as organisation name

Same as proposing organisation's address

Street **ZAN MOREAS 40**

Town **ATHINA** Post code **11745**

Country **Greece**

Website **www.cibos.gr**

Phone **+302109223399** Phone 2 **+XXX XXXXXXXXXX**

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Athanasia	Tsertou	Woman	Greece	athanasia.tsertou@cibos.gr	Category A Top grade re	Leading	0000-0001-6242-2100	Orcid ID
Mrs	Evangelia	Latsa	Woman	Greece	geli.latsa@cibos.gr	Category C Recognised	Team member	0000-0002-7756-5494	Orcid ID
Ms	Fay	Misichroni	Woman	Greece	fay.misichroni@cibos.gr	Category B Senior resea	Team member	0000-0002-5356-4382	Orcid ID
Mr	Aris	Dadoukis	Man	Greece	aris.dadoukis@cibos.gr	Category B Senior resea	Team member	0000-0002-5276-2408	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input type="checkbox"/>
Communication, dissemination and engagement	<input type="checkbox"/>
Provision of research and technology infrastructure	<input checked="" type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input checked="" type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Software	<i>ActiveCitizen platform, for orchestrating and processing citizen-sourced information on a topic of interest for a city or large scale organization. It is a tool for public or private organisations, that wish to engage their community in collecting information for a topic of common interest. This may be the state of soil, pavements, roads or public spaces, (temperature, humidity, noise, air pollution), or type of land use.</i>
Software	<i>Tree registry for the city of Athens, Manheim, Cascais in development for the UrbanReleaf project. It comprises a web-based platform and a mobile app, for collecting text, images, videos from citizens as well as encompasses a full-featured version for city employees working in the greening department</i>
Software	<i>Digital interactive dashboard with georeferenced assets modelled and visualised, depicting plastic waste and several sustainability indicators regarding its reuse/recycling across a number of demonstration campaigns for EU oceans and shoreline. It is being developed in the context of REMEDIES project</i>
Software	<i>Set of augmented reality based tools to enhance the situational awareness and improve the processes of picking and inventory management in warehouses and other logistics hubs, for more information visit https://cibos.gr/products/pick-by-vision/ and https://cibos.gr/products/pick-by-voice/</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>ActiveCitizen Platform</i>	<i>Platform currently at TRL5-6, that aims to capitalize on citizen-generated information on a topic of interest for a local/regional authority. It support campaign creation, different levels of user management, data collection, filtering and analysis from citizens, integration APIs with other third party tools, mechanisms for measuring and improving data quality of information as well as georeferenced information, and pinning in a map.</i>
<i>REMEDIES, Horizon Europe 2022-2025</i>	<i>REMEDIES aims to create a trend on the prevention of plastic through traditional and modern channels, including through citizen science, towards a more plastic-conscious society. CIBOS will design and implement a sustainability impact dashboard leveraging UX-friendly technologies for maximum user engagement and a holistic assessment of the environmental and societal benefits of the nvironmental and societal benefits of the circular pathways in REMEDIES</i>
<i>UrbanReleaf, Horizon Europe, 2023-2026</i>	<i>Urban ReLeaf aims to advance citizen-powered science as a central resource for inclusive urban green planning in support of local policy making, European strategies and monitoring systems (e.g., the Green deal, Copernicus), and global efforts such as the SDGs and GEOSS. At the heart of Urban ReLeaf's action- and mission-oriented approach to innovation are public authorities and established communities and citizen groups in six pioneering Urban ReLeaf cities: Athens, Dundee, Cascais, Manheim</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
998080337	ELLINOGERMANIKI AGOGI SCHOLI PANAGEA SAVVA AE

Short name: GREEKGERMAN EDUCATION SCHOOL PANAGEA SAVVA SA

Address

Street	DIMITRIOU PANAGEA STTR
Town	PALLINI
Postcode	15351
Country	Greece
Webpage	www.ea.gr

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **unknown** (small- and medium-sized enterprise) for the call.

SME self-declared status	unknown
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Research	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	DIMITRIOU PANAGEA STTR	
Town	PALLINI	
Postcode	15351	
Country	Greece	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Mr**

Gender Woman Man Non Binary

First name* **Pavlos**

Last name* **Koulouris**

E-Mail* **pkoulouris@ea.gr**

Position in org. **Top Grade Researcher**

Department **Research and Development**

Same as organisation name

Same as proposing organisation's address

Street **Dimitriou Panagea Str., Pallini**

Town **Athens**

Post code **15351**

Country **Greece**

Website **https://www.ea.gr/**

Phone **+XXX XXXXXXXXXX**

Phone 2 **+XXX XXXXXXXXXX**

Other contact persons

First Name	Last Name	E-mail	Phone
Vasilis	Liakopoulos	vliakopoulos@ea.gr	+306936194633

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Mr	Pavlos	Koulouris	Man	Greece	pkoulouris@ea.gr	Category A Top grade re	Leading		
Mr	Vasilis	Liakopoulos	Man	Greece	vliakopoulos@ea.gr	Category B Senior resea	Team member		
Ms	Thalia	Tsaknia	Woman	Greece	tsaknia@ea.gr	Category B Senior resea	Team member		
Ms	Katerina	Riviou	Woman	Greece	kriviou@ea.gr	Category A Top grade re	Team member		
Dr	Georgios	Mavromanolakis	Man	Greece	gmavroma@ea.gr	Category A Top grade re	Team member		
Dr	Sofoklis	Sotiriou	Man	Greece	sotiriou@ea.gr	Category A Top grade re	Team member	0000-0001-8909-5963	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Katikas L. and Sotiriou S. (2023). <i>Schools as Living Labs for the New European Bauhaus, Universal Access in the Information Society, Special Issue: Green Digital Accessibility</i>
Other achievement	Katikas L., Tsaknia T., and Sotiriou S. (2023). <i>Scenarios of Plausible Futures for NBS in Education Deliverable, Nature-Based Solutions Education Network (NBS EduWORLD, D6.1), Technical Report, http://dx.doi.org/10.13140/RG.2.2.13514.95684</i>
Publication	Katikas L. and Sotiriou S. (2024). <i>Environmental Education and Sustainability, Chapter 1 and School Sustainability Education Best Practices, Chapter 12 of the book "European Green Deal in practice: research perspectives on environmental education and sustainability" that will be published by Springer within October 2024 (the Chapters have been already revised and accepted for publication).</i>
Publication	Sotirou S., Bybee R.W., & Bogner F.X. (2017). <i>PATHWAYS – A Case of Large-Scale Implementation of Evidence-Based Practice in Scientific Inquiry-Based Science Education. International Journal of Higher Education, 6(2), 8, https://doi.org/10.5430/ijhe.v6n2p8</i>
Publication	Sotiriou, S., Cherouvis, S., Zygouritsas, N., Giannakopoulou, A., Milopoulos, G., Mauer, M., et al. (2017). <i>Open Schooling Roadmap: A Guide for School Leaders and Innovative Teachers. Pallini: Publisher, ISBN: 978-960-473-893-9</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>Schools as Living Labs (SALL)</i> (H2020, GA No. 8717)	<i>SALL (https://www.schoolsaslivinglabs.eu) engages in dialogue between school communities, research institutions, science museums and centres and spaces of open-learning; Academy pilots in Greece will demonstrate how schools could act as the core nodes of the promotion of the Green Deal key areas in their local communities.</i>
<i>NBS EduWORLD</i> (H2020, GA No. 101060525)	<i>The overall objective of NBS EduWORLD (https://nbseduworld.eu/) is to nurture an NBS literate society, supporting a just transition to a sustainable future. For this, NBS EduWORLD will create an NBS community that facilitates synergies between NBS professionals and education providers and ensures free and easy access to NBS knowledge and resources for all.</i>
<i>FOODSHIFT 2030</i> (H2020, GA No. 862716)	<i>FoodSHIFT 2030 (https://foodshift2030.eu/) is putting citizens at the centre of food systems change in a novel approach to scale-up, multiply and share the best food innovations European communities have to offer. It focuses on identifying, maturing and scaling-up citizen-led innovations in the local communities that respond to social and environmental challenges.</i>
<i>STE(A)M Learning Ecologies (SLEs)</i> (H2020, GA No.	<i>SLEs (https://www.steamecologies.eu/) is developing engaging open schooling-enabled science learning paths for all in learning continuums of formal and informal learning environments that are also focusing on inclusiveness. The project highlights the necessary conditions for bringing together all, rather than some, of the actors: formal, non-formal and informal education providers, as well as enterprises and the civil society.</i>
<i>Smart Citizen Education for a Greener Future</i>	<i>GreenScent (https://www.greenscent.eu/) aims to change citizens' behaviors allowing them to be the ones who act to implement the policies of the European Commission in the context of the Green Deal. The behavioral change of citizens through the stimulation of their empathy for social and global issues in the context of the Green Deal and the achievement, on the part of the European Continent, of Climate Neutrality by 2050.</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
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Administrative forms

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Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999778419	EURICE EUROPEAN RESEARCH AND PROJECT OFFICE GMBH

Short name: EURICE EUROPEAN RESEARCH AND PROJECT OFFICE GMBH

Address

Street	HEINRICH-HERTZ-ALLEE 1
Town	ST INGBERT
Postcode	66386
Country	Germany
Webpage	www.eurice.eu

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	no
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

SME self-declared status	31/12/2022 - yes
SME self-assessment	31/12/2022 - yes
SME validation	11/09/2008 - yes

Administrative forms

Departments carrying out the proposed work

No department involved

Department name *Name of the department/institute carrying out the work.* not applicable

Same as proposing organisation's address

Street *Please enter street name and number.*

Town *Please enter the name of the town.*

Postcode *Area code.*

Country *Please select a country*

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title Dr

Gender Woman Man Non Binary

First name* **Sonja**

Last name* **Bergner**

E-Mail* **s.bergner@eurice.eu**

Position in org. Senior Research & Innovation Manager

Department EURICE EUROPEAN RESEARCH AND PROJECT OFFICE GMBH

Same as organisation name

Same as proposing organisation's address

Street HEINRICH-HERTZ-ALLEE 1

Town ST INGBERT

Post code 66386

Country Germany

Website https://eurice.eu/

Phone +XXX XXXXXXXXXX

Phone 2 +XXX XXXXXXXXXX

Other contact persons

First Name	Last Name	E-mail	Phone
Project	OFFICE	projectoffice@eurice.eu	+XXX XXXXXXXXXX

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Sonja	Bergner	Woman	Germany	s.bergner@eurice.eu	Category B Senior resea	Leading	0000-0003-2111-3402	Orcid ID
Dr	Wannes	De Man	Man	Belgium	w.deman@eurice.eu	Category C Recognised	Team member	0000-0002-2843-3241	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management

Communication, dissemination and engagement

Provision of research and technology infrastructure

Co-definition of research and market needs

Civil society representative

Policy maker or regulator, incl. standardisation body

Research performer

Technology developer

Testing/validation of approaches and ideas

Prototyping and demonstration

IPR management incl. technology transfer

Public procurer of results

Private buyer of results

Finance provider (public or private)

Education and training

Contributions from the social sciences or/and the humanities

Other
If yes, please specify: (Maximum number of characters allowed: 50)

Management of Open Calls/FSTP

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Successful valorisation of knowledge and research results in Horizon Europe: boosting the impact of your project through effective communication, dissemination and exploitation; 2022; ISBN 978-92-9469-287-0
Publication	Your Guide to Intellectual Property Management in Horizon Europe; 2022; ISBN 978-92-9469-458-4
Publication	Insights: Code of practice on the management of intellectual assets for knowledge valorisation; 2023; ISSN 2599-9427
Publication	Your Guide to IP Commercialisation, 2019; ISBN 978-92-9202-478-9
Publication	Successful Go-To-Market-Strategies; 2020; ISSN 2599-9427

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Horizon IP Scan	EC-H2020 (EASME/2020/OP/0005; 2020-2023); Role: Co-ordinator. Scope: to help European start-ups and SMEs involved in EU-funded research projects to efficiently manage and valorise existing IP. Further, it assists SMEs in developing a shared strategy with consortium partners to manage and exploit
European IP Helpdesk	EISMEA_2023_OP_0009; 2024-2026. Role: Co-ordinator. Scope: providing first-line support to European SMEs on IP management, protection and enforcement. It additionally assists SMEs & researchers participating in EU-funded research & innovation projects in dealing with IP issues
Case Studies on Technology Transfer	European Patent Office (EPO(CO/2020/002; 2020-2021); Role: Co-ordinator; Scope: Creation of Technology Transfer Case Studies – from EU Universities in 7 EU Member States
SOB4ES; HE, GA No: 101112831, 2023-2028	Role: Partner Organisation/WP Leader Integrating SOil Biodiversity to Ecosystem Services: testing cost-effectiveness of Soil Biodiversity indicators and the provision of soil biodiversity-based Ecosystem Services to build better land management solutions
FOODLAND; H2020, GA No: 862802, 2020-2024	Role: Partner Organisation/WP Leader FOODLAND aims at enhancing the diversity of food production and consumption in six African countries displaying different stages of the nutrition transition. To this end, FOODLAND will create a network of 14 local Food Hubs

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
Project Management Office (PMO)	Office premises: Two fully equipped offices at St. Ingbert and Berlin, Germany -including professional meeting rooms.
Communication	Hard- and Software for professional communication services
Meeting organisation	Different online tools for virtual meetings
Training Center	Professional training courses – mostly related to Innovation and IP Management: over 20,000 international participants enrolled to our online courses over the last two years
"IP Navigator®"	A self-developed tool-based solution to analyse patent and scientific databases – and to visualise the results.

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
875931341	Mistawasis Nehiyawak

Short name: Mistawasis Nehiyawak

Address

Street	Box 250
Town	Leask
Postcode	S0J1M0
Country	Canada

Webpage

Specific Legal Statuses

Legal person	yes
Public body	no
Non-profit	no
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	24/09/2024 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name Mistawasis Nehiyawak not applicable

Same as proposing organisation's address

Street Box 250

Town Leask, SK

Postcode S0J1M0

Country Canada

Department 2

Department name Muskeg Lake Cree Nation not applicable

Same as proposing organisation's address

Street Box 248

Town Marcelin, SK

Postcode S0J1R0

Country Canada

Department 3

Department name Kinnikinnick Consulting not applicable

Same as proposing organisation's address

Street Box 102

Town Hepburn, SK

Postcode S0K1Z0

Country Canada

Administrative forms

Links with other participants

Type of link	Participant
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Administrative forms

Main contact person

This will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to start grant preparation). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in the step "Participants" of the submission wizard.

Title **Ms**

Gender Woman Man Non Binary

First name* **Katherine**

Last name* **Finn**

E-Mail* **bridgetolandwatersky@gmail.com**

Position in org. **Project Manager**

Department **Kinnikinnick Consulting**

Same as organisation name

Same as proposing organisation's address

Street **Box 102**

Town **Hepburn, SK**

Post code **S0K 1Z0**

Country **Canada**

Website **https://www.bridgetolandwatersky.ca/**

Phone **+13064413119** Phone 2 *+XXX XXXXXXXXXX*

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Ms	Melissa	Arcand	Woman	Canada	melissa.arcand@usask.ca	Category B Senior resea	Team member		
Ms	Christy	Morrissey	Woman	Canada	christy.morrissey@usask.ca	Category A Top grade re	Team member		
Ms	Katherine	Finn	Woman	Canada	Bridgetolandwatersky@gmail.com	Category A Top grade re	Leading		

Administrative forms

Role of participating organisation in the project

Project management

Communication, dissemination and engagement

Provision of research and technology infrastructure

Co-definition of research and market needs

Civil society representative

Policy maker or regulator, incl. standardisation body

Research performer

Technology developer

Testing/validation of approaches and ideas

Prototyping and demonstration

IPR management incl. technology transfer

Public procurer of results

Private buyer of results

Finance provider (public or private)

Education and training

Contributions from the social sciences or/and the humanities

Other
If yes, please specify: (Maximum number of characters allowed: 50)

Indigenous Living Lab support

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Melissa M. Arcand. miyo wicêhtowin "good relations": reckoning with the relationship between Indigenous Peoples and soil science in Canada. Canadian Journal of Soil Science. e-First https://doi.org/10.1139/cjss-2024-0023</i>
Publication	<i>Melissa M. Arcand, Lori Bradford, Dale F. Worme, Graham E.H. Strickert, Ken Bear, Anthony Blair Dreaver Johnston, Sheldon M. Wuttunee, Alfred Gamble, and Debra Shewfelt. 2020. Sowing a way towards revitalizing Indigenous agriculture: creating meaning from a forum discussion in Saskatchewan, Canada. FACETS. 5(1): 619-641. https://doi.org/10.1139/facets-2020-0004</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
<i>Bridge to Land Water Sky</i>	<i>Canadian Indigenous Lead Living Lab</i>

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes

No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999861742	UNIVERSITAET ST. GALLEN

Short name: UNIVERSITAET ST. GALLEN

Address

Street	DUFOURSTRASSE 50
Town	ST GALLEN
Postcode	9000
Country	Switzerland
Webpage	www.unisg.ch

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	no

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	26/05/1988 - no
SME self-assessment	unknown
SME validation	unknown

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	School of Humanities and Social Sciences (SHSS), University of St	<input type="checkbox"/> not applicable
	<input type="checkbox"/> Same as proposing organisation's address	
Street	Müller-Friedberg-Str. 8	
Town	St.Gallen	
Postcode	9000	
Country	Switzerland	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Sabine	Hoidn	Woman	Germany	sabine.hoidn@unisg.ch	Category B Senior resea	Leading	0000-0002-9181-2623	Orcid ID
Dr	Daria	Loginova	Woman	Russia	daria.loginova@unisg.ch	Category C Recognised	Team member	0000-0002-4856-9648	Orcid ID
Ms	Regula	Broger	Woman	Switzerland	regula.broger@unisg.ch	Category C Recognised	Team member	0009-0001-1536-2237	Orcid ID
Prof	Maximilian	Palmié	Man	Switzerland	maximilian.palmie@unisg.ch	Category B Senior resea	Team member	0000-0001-9767-7226	Orcid ID

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input checked="" type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input type="checkbox"/>
Testing/validation of approaches and ideas	<input type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input checked="" type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	Hoidn, S. (2022). <i>High-impact student-centered learning and teaching practices: What we know and what we (should) do</i> . In J. Christensen Hughes, J. Mighty & D. Stockley (eds.), <i>Taking Stock 2.0: Research on Teaching and Learning</i> (346–368). Society for Teaching and Learning in Higher Education (STLHE). ISBN-13: 979-8828306107
Publication	Fellenz, M., Hoidn, S. & Brady, M. (eds.) (2022). <i>The future of management education</i> . Abingdon, UK: Routledge. ISBN 9780367559717
Publication	Hoidn, S. & Štastný, V. (2021). <i>Labour Market Success of Initial Vocational Education and Training Graduates: A Comparative Study of Three Education Systems in Central Europe</i> . <i>Journal of Vocational Education and Training</i> , Routledge, UK, https://doi.org/10.1080/13636820.2021.1931946
Publication	Hoidn, S. & Klemenčič, M. (eds.) (2020). <i>The Routledge international handbook of studentcentered learning and teaching in higher education</i> . Abingdon, UK: Routledge.
Publication	Hoidn, S. (2018). <i>Conducting interdisciplinary research in higher education: Epistemological styles, evaluative cultures and institutional obstacles</i> . <i>International Journal of Interdisciplinary Research and Innovations</i> , 6(3), 288–297.

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
Study on the future development of the EU Master	Expert Team Member & Scientific Adviser, together with PPMI (Public Policy and Management Institute, https://www.ppmi.lt/), DG EUROSTAT, European Commission
Switzerland Innovation Cooperation Programme	Project leader, organizer and moderator, University of St. Gallen together with Switzerland Innovation Park OST [https://www.linkedin.com/company/switzerland-innovation-park-ost/?originalSubdomain=ch]
Study on the impact and transformational potentia	Expert Team Member & Scientific Adviser, together with PPMI (Public Policy and Management Institute, https://www.ppmi.lt/), European Commission (DG EAC), 2021-DG EAC-European Universities-06
Leadership module development, 07/21-ongoing	Editor-in-Chief, SAGE Business Core Project, SAGE Publications Inc., Thousand Oaks, California, US The SAGE Business Foundations project is a multimedia (text, video, scenarios, etc.)
Road towards a European Degree	Expert Panel Member, together with PPMI, European Commission (DG EAC), 2021-DG EACFeasibility study European degree/2021-06

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

PIC	Legal name
999974650	UNIVERSITE DE GENEVE

Short name: UNIGE

Address

Street	RUE DU GENERAL DUFOUR 24
Town	GENEVE
Postcode	1211
Country	Switzerland
Webpage	www.unige.ch

Specific Legal Statuses

Legal person	yes
Public body	yes
Non-profit	yes
International organisation	no
Secondary or Higher education establishment	yes
Research organisation	yes

SME Data

Based on the below details from the Participant Registry the organisation is **not an SME** (small- and medium-sized enterprise) for the call.

SME self-declared status	10/09/2008 - no
SME self-assessment	unknown
SME validation	10/09/2008 - no

Administrative forms

Departments carrying out the proposed work

Department 1

Department name	Institute for Environmental Sciences	<input type="checkbox"/> not applicable
	<input checked="" type="checkbox"/> Same as proposing organisation's address	
Street	RUE DU GENERAL DUFOUR 24	
Town	GENEVE	
Postcode	1211	
Country	Switzerland	

Links with other participants

Type of link	Participant
--------------	-------------

Administrative forms

Researchers involved in the proposal

Title	First Name	Last Name	Gender	Nationality	E-mail	Career Stage	Role of researcher (in the project)	Reference Identifier	Type of identifier
Dr	Gregory	Giuliani	Man	Switzerland	gregory.giuliani@unige.ch	Category B Senior resea	Leading	0000-0002-1825-8865	Orcid ID
Mr	Bruno	Chatenoux	Man	Switzerland	bruno.chatenoux@unepgrid.ch	Category C Recognised	Team member	0000-0001-9947-2945	Orcid ID
Ms	Denisa	Rodila	Woman	Romania	denisa.rodila@unepgrid.ch	Category C Recognised	Team member	0000-0001-5101-8663	Orcid ID
Mr	Jean-Philippe	Richard	Man	Switzerland	jeanphilippe.richard@unepgrid.ch	Category C Recognised	Team member		

Administrative forms

Role of participating organisation in the project

Project management	<input checked="" type="checkbox"/>
Communication, dissemination and engagement	<input checked="" type="checkbox"/>
Provision of research and technology infrastructure	<input type="checkbox"/>
Co-definition of research and market needs	<input type="checkbox"/>
Civil society representative	<input type="checkbox"/>
Policy maker or regulator, incl. standardisation body	<input type="checkbox"/>
Research performer	<input checked="" type="checkbox"/>
Technology developer	<input checked="" type="checkbox"/>
Testing/validation of approaches and ideas	<input checked="" type="checkbox"/>
Prototyping and demonstration	<input type="checkbox"/>
IPR management incl. technology transfer	<input type="checkbox"/>
Public procurer of results	<input type="checkbox"/>
Private buyer of results	<input type="checkbox"/>
Finance provider (public or private)	<input type="checkbox"/>
Education and training	<input checked="" type="checkbox"/>
Contributions from the social sciences or/and the humanities	<input type="checkbox"/>
Other If yes, please specify: (Maximum number of characters allowed: 50)	<input type="checkbox"/>

Administrative forms

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call content.

Type of achievement	Short description (Max 500 characters)
Publication	<i>Building an Earth Observations Data Cube: lessons learned from the Swiss Data Cube (SDC) on generating Analysis Ready Data (ARD) DOI: https://doi.org/10.1080/20964471.2017.1398903 This paper presents an approach to enable rapid data access and pre-processing to generate ARD using interoperable services chains. The approach has been tested and validated generating Landsat ARD while building the Swiss Data Cube.</i>
Publication	<i>The Swiss Data Cube: Analysis Ready Data archive using Earth Observations of Switzerland DOI: https://doi.org/10.1038/s41597-021-01076-6 Here we present the Swiss Data Cube (SDC), unleashing the information power of Big Earth Data for monitoring the environment, providing Analysis Ready Data over the geographic extent of Switzerland since 1984, which is updated on a daily basis.</i>
Publication	<i>Data Cube on Demand (DCoD): Generating Earth Observation Data Cube anywhere DOI: https://doi.org/10.1016/j.jag.2019.102035 This paper presents the Data Cube on Demand (DCoD) approach, a proof-of-concept that aims at facilitating the generation and use of an EODC instance virtually anywhere in the World</i>
Publication	<i>Essential Variables for environmental monitoring: What are the possible contributions of Earth Observation Data Cubes DOI: https://doi.org/10.3390/data5040100 A comprehensive list of EVs that can take advantage of consistent time-series satellite data has been derived. In addition, a set of use-cases, using an Earth Observation Data Cube (EODC) to process large volumes of satellite data, have been implemented to demonstrate the practical applicability of EODC to produce EVs.</i>
Publication	<i>Living Earth: Implementing national standardised land cover classification systems for Earth Observation in support of sustainable development Christopher J. Owers, Richard M. Lucas, Daniel Clewley, Carole Planque, Suvarna Punalekar, Belle Tissott, Sean M. T. Chua, Pete Bunting, Norman Mueller & Graciela Metternicht (2021)</i>

List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal.

Name of Project or Activity	Short description (Max 500 characters)
H2020 ERA-PLANET / GEOEssential	<i>Essential Variables workflows for resource efficiency and environmental management</i>
FOEN Swiss Data Cube	<i>The main objectives of the Swiss Data Cube (SDC) is to support the Swiss government for environmental monitoring and reporting and enable Swiss scientific institutions (e.g., Universities) to facilitate new insights and research using the SDC and to improve the knowledge on the Swiss environment using EO data.</i>
UNIGE LC4SDG	<i>Land Cover Data Science for the SDGs. The aim of the LC4SDG project is to develop new methodologies for the automatic production of consistent and reliable yearly, medium-tohigh resolution (spatial, temporal, thematic) time-series of LC data and its change across Switzerland so as to inform national and regional environmental policies and planning.</i>
MONALISA	<i>The main goal of MONALISA is to identify and promote the expansion of innovative and tailored solutions to prevent and reverse land degradation and desertification (LDD) while showcasing their socio-economic and environmental effectiveness. MONALISA will put in place a transdisciplinary approach to integrate scientific and local knowledge, emerging from newly and established social learning spaces with multi-sector stakeholders and multi-disciplinary and interdisciplinary researchers.</i>
Nostradamus	<i>Nostradamus, in line with the Farm to Fork strategy, the Common Agricultural Policy, and the European strategy for data, will design, develop, and evaluate a scalable and robust platform for the online and real-time harvesting of valuable information derived from different data sources for developing several agricultural applications. Based on European and four national multidimensional datasets, an automated pipeline regarding the data acquisition, storage, and pre-processing, will be developed</i>

Administrative forms

Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work.

Name of infrastructure of equipment	Short description (Max 300 characters)
<i>HPC UNIGE</i>	<i>Baobab and Yggdrasil: the scientific compute clusters of Geneva's higher education institutions https://www.unige.ch/eresearch/en/services/hpc/</i>
<i>Swiss Data Cube</i>	<i>See above</i>

Gender Equality Plan

Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?

Yes No

Minimum process-related requirements (building blocks) for a GEP

- **Publication:** formal document published on the institution's website and signed by the top management
- **Dedicated resources:** commitment of human resources and gender expertise to implement it.
- **Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.
- **Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.
- **Content-wise, recommended areas to be covered** and addressed via concrete measures and targets are:
 - o work-life balance and organisational culture;
 - o gender balance in leadership and decision-making;
 - o gender equality in recruitment and career progression;
 - o integration of the gender dimension into research and teaching content;
 - o measures against gender-based violence including sexual harassment.

Administrative forms

Proposal ID 101219087

Acronym Nemesis

3 - Budget

No.	Name of beneficiary	Country	Role	Personnel costs/€	Subcontracting costs/€	Purchase costs - Travel and subsistence/€	Purchase costs - Equipment/€	Purchase costs - Other goods, works and services/€	Financial support to third parties/€ (actual cost)	Internally invoiced goods and services/€ (Unit costs-usual accounting practices)	Indirect costs/€	Total eligible costs	Funding rate	Maximum EU contribution to eligible costs	Requested EU contribution to eligible costs/€	Max grant amount	Income generated by the action	Financial contributions	Own resources	Total estimated income
1	Eratosthenes Centre Of Excellence	CY	Coordinator	690 000	0	81 000	150 000	85 000	1 000 000	0	251 500.00	2 257 500.00	100	2 257 500.00	2 257 500.00	2 257 500.00	0.00	0.00	0.00	2 257 500.00
2	Ypourgeio Georgias, Agrotikis	CY	Partner	98 500	0	12 000	0	1 500	0	0	28 000.00	140 000.00	100	140 000.00	140 000.00	140 000.00	0.00	0.00	0.00	140 000.00
3	Technologiko Panepistimio Kyprou	CY	Partner	108 500	0	12 000	15 000	0	0	0	33 875.00	169 375.00	100	169 375.00	169 375.00	169 375.00	0.00	0.00	0.00	169 375.00
4	Depi Spectrum (Computing %)	CY	Partner	136 500	0	12 000	0	4 500	0	0	38 250.00	191 250.00	100	191 250.00	191 250.00	191 250.00	0.00	0.00	0.00	191 250.00
5	The Cyprus Institute	CY	Partner	314 000	0	16 000	12 000	10 000	0	0	88 000.00	440 000.00	100	440 000.00	440 000.00	440 000.00	0.00	0.00	0.00	440 000.00
6	Institut National De Recherche	FR	Partner	318 973	50 000	29 000	0	65 500	0	0	103 368.25	566 841.25	100	566 841.25	566 841.25	566 841.25	0.00	0.00	0.00	566 841.25
7	Institut National D'enseigneme	FR	Affiliated	15 200	0	0	0	0	0	0	3 800.00	19 000.00	100	19 000.00	19 000.00	19 000.00	0.00	0.00	0.00	19 000.00
8	Centre De Cooperation Internationale	FR	Partner	190 880	0	25 746	0	103 000	0	0	79 906.50	399 532.50	100	399 532.50	399 532.50	399 532.50	0.00	0.00	0.00	399 532.50
9	Agroof	FR	Partner	169 400	0	12 500	0	25 900	0	0	51 950.00	259 750.00	100	259 750.00	259 750.00	259 750.00	0.00	0.00	0.00	259 750.00
10	Arvalis Institut Du Vegetal	FR	Partner	102 400	0	3 500	0	6 000	0	0	27 975.00	139 875.00	100	139 875.00	139 875.00	139 875.00	0.00	0.00	0.00	139 875.00

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11	Politecnico Di Milano	IT	Partner	280 500	0	14 750	0	24 750	0	0	80 000.00	400 000.00	100	400 000.00	400 000.00	400 000.00	0.00	0.00	0.00	400 000.00
12	Consiglio Per La Ricerca In Agricoltura E	IT	Partner	147 200	0	8 000	0	4 800	0	0	40 000.00	200 000.00	100	200 000.00	200 000.00	200 000.00	0.00	0.00	0.00	200 000.00
13	Legambiente Lombardia Onlus	IT	Partner	117 000	0	16 000	0	35 000	0	0	42 000.00	210 000.00	100	210 000.00	210 000.00	210 000.00	0.00	0.00	0.00	210 000.00
14	Universita Degli Studi Di Milano	IT	Partner	165 000	0	9 000	0	10 000	0	0	46 000.00	230 000.00	100	230 000.00	230 000.00	230 000.00	0.00	0.00	0.00	230 000.00
15	Ente Regionale Per I Servizi All'	IT	Partner	99 000	0	9 000	0	12 000	0	0	30 000.00	150 000.00	100	150 000.00	150 000.00	150 000.00	0.00	0.00	0.00	150 000.00
16	Iris Soc. Coop. Agr. Di Produzione E	IT	Partner	69 650	0	7 350	0	3 000	0	0	20 000.00	100 000.00	100	100 000.00	100 000.00	100 000.00	0.00	0.00	0.00	100 000.00
17	Institut National Agronomique	TN	Partner	250 000	0	12 000	23 000	35 000	0	0	80 000.00	400 000.00	100	400 000.00	400 000.00	400 000.00	0.00	0.00	0.00	400 000.00
18	Agence De Vulgarisation Et De La	TN	Partner	93 100	0	8 000	4 900	14 000	0	0	30 000.00	150 000.00	100	150 000.00	150 000.00	150 000.00	0.00	0.00	0.00	150 000.00
19	Ezzayra Solutions	TN	Partner	105 000	0	9 000	3 000	3 000	0	0	30 000.00	150 000.00	100	150 000.00	150 000.00	150 000.00	0.00	0.00	0.00	150 000.00
20	Universite 8 Mai 1945 Guelma	DZ	Partner	179 200	0	11 200	15 000	26 600	0	0	58 000.00	290 000.00	100	290 000.00	290 000.00	290 000.00	0.00	0.00	0.00	290 000.00
21	Bneder	DZ	Partner	98 000	0	9 000	2 000	3 000	0	0	28 000.00	140 000.00	100	140 000.00	140 000.00	140 000.00	0.00	0.00	0.00	140 000.00
22	Tm Blinacon	DZ	Partner	83 800	0	8 000	0	4 200	0	0	24 000.00	120 000.00	100	120 000.00	120 000.00	120 000.00	0.00	0.00	0.00	120 000.00
23	Universidad De Murcia	ES	Partner	270 375	0	9 000	0	7 505	0	0	71 720.00	358 600.00	100	358 600.00	358 600.00	358 600.00	0.00	0.00	0.00	358 600.00
24	Asociacion Valenciana De Agricultores	ES	Partner	226 800	0	10 000	0	42 000	0	0	69 700.00	348 500.00	100	348 500.00	348 500.00	348 500.00	0.00	0.00	0.00	348 500.00
25	El Junquero Sa	ES	Partner	126 000	0	9 270	0	6 000	0	0	35 317.50	176 587.50	100	176 587.50	176 587.50	176 587.50	0.00	0.00	0.00	176 587.50
26	Federacion De Cooperativas Agrariasde	ES	Partner	121 980	0	9 000	0	7 120	0	0	34 525.00	172 625.00	100	172 625.00	172 625.00	172 625.00	0.00	0.00	0.00	172 625.00
27	Odin Solutions Sociedad Limitada	ES	Partner	144 050	0	10 000	0	900	0	0	38 737.50	193 687.50	100	193 687.50	193 687.50	193 687.50	0.00	0.00	0.00	193 687.50

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28	Diabalkaniko Kentro Periballontos	EL	Partner	396 000	0	28 000	60 000	12 000	0	0	124 000.00	620 000.00	100	620 000.00	620 000.00	620 000.00	0.00	0.00	0.00	620 000.00
29	Maggioli Spa	IT	Partner	320 800	0	12 160	0	3 000	0	0	83 990.00	419 950.00	100	419 950.00	419 950.00	419 950.00	0.00	0.00	0.00	419 950.00
30	International Centre For Research In	KE	Partner	234 300	0	30 000	0	0	0	0	66 075.00	330 375.00	100	330 375.00	330 375.00	330 375.00	0.00	0.00	0.00	330 375.00
31	Adelphi Research Gemeinnutzig	DE	Partner	225 500	0	9 000	0	21 500	0	0	64 000.00	320 000.00	100	320 000.00	320 000.00	320 000.00	0.00	0.00	0.00	320 000.00
32	University Of Dundee	UK	Partner	292 400	0	30 000	0	10 000	0	0	83 100.00	415 500.00	100	415 500.00	415 500.00	415 500.00	0.00	0.00	0.00	415 500.00
33	European Rural Development	PL	Partner	235 000	0	20 000	0	5 000	0	0	65 000.00	325 000.00	100	325 000.00	325 000.00	325 000.00	0.00	0.00	0.00	325 000.00
34	Cibos Innovation Idiotiki	EL	Partner	280 000	0	15 000	5 000	8 500	0	0	77 125.00	385 625.00	100	385 625.00	385 625.00	385 625.00	0.00	0.00	0.00	385 625.00
35	Ellinogermani ki Agogi Scholi Panagea	EL	Partner	105 500	0	10 000	0	4 000	0	0	29 875.00	149 375.00	100	149 375.00	149 375.00	149 375.00	0.00	0.00	0.00	149 375.00
36	Eurice European Research And	DE	Partner	343 200	25 000	15 000	0	70 000	0	0	107 050.00	560 250.00	100	560 250.00	560 250.00	560 250.00	0.00	0.00	0.00	560 250.00
37	Mistawasis Nehiyawak	CA	Partner	70 163	0	10 000	0	0	0	0	20 040.75	100 203.75	100	100 203.75	100 203.75	100 203.75	0.00	0.00	0.00	100 203.75
38	Universitaet St. Gallen	CH	Associated	0	0	0	0	0	0	0	0.00	0.00	100	0.00	0.00	0.00	0.00	1 520 250.00	0.00	1 520 250.00
39	Universite De Geneve	CH	Associated	0	0	0	0	0	0	0	0.00	0.00	100	0.00	0.00	0.00	0.00	1 137 145.00	0.00	1 137 145.00
	TOTAL			7 223 871	75 000	551 476	289 900	674 275	1 000 000	0	2 184 880.50	11 999 402.50		11 999 402.50	11 999 402.50	11 999 402.50	0.00	2 657 395.00	0.00	14 656 797.50

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4 - Ethics & security

Ethics Issues Table

1. Human Embryonic Stem Cells and Human Embryos		Page
Does this activity involve Human Embryonic Stem Cells (hESCs)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve the use of human embryos?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
2. Humans		Page
Does this activity involve human participants?	<input checked="" type="radio"/> Yes <input type="radio"/> No	FSTP
Are they volunteers for non medical studies (e.g. social or human sciences research)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they healthy volunteers for medical studies?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they patients for medical studies?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they potentially vulnerable individuals or groups?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they children/minors?	<input checked="" type="radio"/> Yes <input type="radio"/> No	FSTP
Are they other persons unable to give informed consent?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve interventions (physical also including imaging technology, behavioural treatments, etc.) on the study participants?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve conducting a clinical study as defined by the Clinical Trial Regulation (EU 536/2014) ? (using pharmaceuticals, biologicals, radiopharmaceuticals, or advanced therapy medicinal products)	<input type="radio"/> Yes <input checked="" type="radio"/> No	
3. Human Cells / Tissues (not covered by section 1)		Page
Does this activity involve the use of human cells or tissues?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
4. Personal Data		Page
Does this activity involve processing of personal data?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve further processing of previously collected personal data (including use of preexisting data sets or sources, merging existing data sets)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Is it planned to export personal data from the EU to non-EU countries?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Is it planned to import personal data from non-EU countries into the EU or from a non-EU country to another non-EU country?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve the processing of personal data related to criminal convictions or offences?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
5. Animals		Page
Does this activity involve animals?	<input checked="" type="radio"/> Yes <input type="radio"/> No	ES LL
Are they vertebrates?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they non-human primates? (NHP)	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they genetically modified?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they cloned farm animals?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are they endangered species?	<input type="radio"/> Yes <input checked="" type="radio"/> No	

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6. Non-EU Countries

Page

Will some of the activities be carried out in non-EU countries?

Yes No

All

Co-creation, -development, -monitoring, & -governance activities will be carried out within the North African Living Lab (LL)(Tunisia/Algeria), following the common framework of the Nemesis LL network. These activities will include establishing the LL, defining key objectives and long-term strategies, and co-developing solutions with stakeholders to combat desertification and reverse land degradation. Baselines and starting points will be established at pilot sites, alongside tailored policy and social innovation initiatives such as socio-ecological experiments, think tanks, and the creation of VETs. The LL will also support dissemination, communication, and exploitation efforts, including the design and monitoring of Open Calls. In general, WP1-WP8 LL-tailored activities will be carried out in North Africa. Switzerland (MED Data Cube and Living Earth, Social Sciences and Humanities), Kenya (Global Soil Health Policy Hub), UK (Social Innovation), Canada (Transfer knowledge & Insights)

In case non-EU countries are involved, do the activities undertaken in these countries raise potential ethics issues?

Yes No

It is planned to use local resources (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc.)?

Yes No

Is it planned to import any material (other than data) from non-EU countries into the EU or from a non-EU country to another non-EU country? For data imports, see section 4.

Yes No

WP4

Soil samples will be collected across the North Africa Living Lab (Algeria/Tunisia) and sent to IBEC (Greece) for analysis to determine soil properties and Soil Health Descriptors, as well as to establish starting points and baselines. The same data will also be integrated with Earth Observation data to develop layers for the continuous assessment of Soil Health Descriptors and the Monitoring framework. This framework will support the Soil Monitoring Law and the designation of Soil Health Districts across the Mediterranean region.

Is it planned to export any material (other than data) from the EU to non-EU countries? For data exports, see section 4.

Yes No

WP3-7

Infrastructure for soil health co-monitoring (IBEC/CIRAD) will be established in the North African Living Lab (Tunisia/Algeria) to support the global dimension of EU strategies, the achievement of SDGs, and the implementation of the Soil Monitoring Law. This will strengthen adoption by non-EU countries, further promoting knowledge exchange, the transfer of best management practices, and cooperation with EU countries. Additionally, it will support the EU-AU partnership in their collaboration on sustainable ecosystems and efforts to reduce the EU's global footprint on soils.

Does this activity involve [low and/or lower middle income countries](#), (if yes, detail the benefit-sharing actions planned in the self-assessment)

Yes No

KE,TN

Could the situation in the country put the individuals taking part in the activity at risk?

Yes No

7. Environment, Health and Safety

Page

Does this activity involve the use of substances or processes that may cause harm to the environment, to animals or plants.(during the implementation of the activity or further to the use of the results, as a possible impact) ?

Yes No

Does this activity deal with endangered fauna and/or flora / protected areas?

Yes No

Does this activity involve the use of substances or processes that may cause harm to humans, including those performing the activity.(during the implementation of the activity or further to the use of the results, as a possible impact) ?

Yes No

8. Artificial Intelligence

Page

Does this activity involve the development, deployment and/or use of Artificial Intelligence-based systems?

Yes No

WP3-4

9. Other Ethics Issues

Page

Are there any other ethics issues that should be taken into consideration?

Yes No

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I confirm that I have taken into account all ethics issues above and that, if any ethics issues apply, I will complete the ethics self-assessment as described in the guidelines [How to Complete your Ethics Self-Assessment](#)



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Ethics Self-Assessment

Ethical dimension of the objectives, methodology and likely impact

Nemesis project will follow the 'Trustworthy AI Assessment List' set up by the High-Level Expert Group on Artificial Intelligence, established by the European Commission, and will ensure compliance with these recommendations in the following categories: a) human agency and oversight, b) technical robustness and safety, c) privacy and data governance, d) transparency, e) diversity, non-discrimination, and fairness, f) societal and environmental well-being, and g) accountability. Following a comprehensive analysis of our objectives, methodology, projected impact, and outcomes, we declare that the AI tools under development will focus exclusively on the MED Data Cube and the Living Earth platform, utilizing FAO's Land Cover Classification System (LCCS), optimized for Earth Observation data. The Data Cube will serve as a one-stop-shop for monitoring key soil health descriptors, biomass dynamics, ecosystem services, Land Use, Land-Use Change, and Forestry (LULUCF), as well as meeting the data requirements necessary for supporting Monitoring, Reporting, and Verification (MRV) frameworks linked to soil health. These frameworks will align closely with EU strategies, the Soil Mission Objectives, and the emerging Soil Monitoring Law. Importantly, these tools will not process or involve any sensitive data related to individuals, the environment, or security. Instead, the AI systems being developed within the Nemesis project will serve as a transformative force for advancing sustainable soil ecosystems, enhancing ecosystem monitoring, improving the provision of critical environmental services, optimizing land management, and fostering resilience through innovative co-created solutions. Nemesis is firmly committed to ensuring equitable access to AI for all stakeholders involved in soil health monitoring and management, irrespective of their resources or geographical location. This commitment extends particularly to bridging the digital divide between well-resourced and under-resourced regions. By developing affordable, user-friendly tools, we aim to democratize access to advanced technologies that monitor soil health and ecosystem dynamics, ensuring that no actors are left behind. To this end, we will implement user-oriented capacity-building activities, designed to enhance AI literacy and empower users with the necessary skills to fully leverage these tools. These capacity-building efforts, and with the establishment of VETs, will focus on enhancing the technical expertise of all participants. Additionally, we will foster collaborative governance models to ensure that AI tools are developed in consultation with local communities, reflecting their needs, and promoting long-term sustainability.

The Nemesis project includes partners from lower-middle-income countries, namely Kenya and Tunisia. These partners are well-established and respected organizations with extensive experience in international projects, including participation in H2020, Horizon Europe, PRIMA, and various other international research initiatives. These partners bring valuable regional insights and expertise to the project, particularly in addressing the specific challenges faced by soil ecosystems in their respective regions and across EMENA. Their active participation ensures that the Nemesis project remains globally relevant and inclusive of diverse ecological and socio-economic contexts. Inclusion of low and/or lower middle income countries, particularly for the establishment of the North Africa Living Lab, will support the global dimension of EU strategies, the achievement of SDGs, and the implementation of the Soil Monitoring Law. This will strengthen adoption by non-EU countries, further promoting knowledge exchange, the transfer of best management practices, and cooperation with EU countries. Additionally, it will support the EU-AU partnership in their collaboration on sustainable ecosystems and efforts to reduce the EU's global footprint on soils.

Remaining characters

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Compliance with ethical principles and relevant legislations

The Ethics Guidelines for Trustworthy AI, issued in 2019 by the Independent High-Level Expert Group on Artificial Intelligence, will be fully considered within the project, making sure that the work of the project follows the four ethical principles: respect for human autonomy, prevention of harm, fairness and explicability.

A critical element of trustworthy AI is transparency—users, including all actors engaged through the Living Labs and the Nemesis project, should be able to understand how the AI system reaches its conclusions. The Trustworthy AI Systems Methodology for the Nemesis project is transparent, accurate, inclusive, secure, and accountable. Explainable AI (XAI): Incorporating models that provide clear explanations of how data is analysed and how decisions are made. This involves using AI techniques that can be easily interpreted, such as decision trees or interpretable machine learning algorithms, allowing users to trust and act upon the insights. Data Lineage and Documentation: Ensuring all data sources, algorithms, and processing steps are clearly documented and traceable. This provides accountability and helps identify and correct any errors or biases in data collection or analysis. High-Quality Data Sources: The system will use validated, high-quality data from diverse sources (e.g., satellite imagery, local soil samples, historical climate data). Continuous data updates and integration will ensure near-real-time relevance. Model Validation and Testing: The project will conduct rigorous testing of models using cross-validation techniques. Robustness will be tested by simulating various real-world conditions to ensure the models can handle diverse scenarios. Continuous Improvement: The AI outcomes will be regularly updated and retrained with new data to improve their accuracy over time. Feedback from users (Living Lab ecosystems and

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stakeholders engaged) will help refine predictions and recommendations. Bias Mitigation: Special care will be taken to avoid inaccurate assessments. Inclusivity: Specific attention will be given to the needs of all genders by tailoring AI-driven recommendations to their specific contexts. The system will also provide information in local languages where necessary. Ethical Frameworks: We will ensure that data collection, analysis, and usage respect human rights, privacy, and cultural considerations. Given the sensitive nature of soil data, especially when linked to land ownership and agricultural practices, security and privacy will be prioritised. Compliance with Data Privacy Laws: The models and platforms will comply with data protection laws, ensuring that personal and sensitive data is handled ethically and securely.

Laboratory testing will be conducted using soil data collected from the region of Tunisia/Algeria, respectively. No exports of soil samples from EU will be conducted. All activities performed in the non-EU countries (Switzerland, United Kingdom, Tunisia, Algeria, Kenya), they are also allowed in all EU Member States. Special care will be given to all legislation in force which regulates data protection, privacy and ethical standards relevant to the project. Since the project foresees involvement of non-EU partners, special attention will be given to the legal framework of those countries with particular emphasis and comparison to the differences in regulation between them and EU and highlight some one of the key issues which should be respected taking into account how they are regulated in the EU. The legislative screening will make sure that every single relevant regulation is considered and duly respected. Since the beginning of the project, the operational protocols in respect of EU and national legislation for protection of privacy and personal data and respect and protection of fundamental rights as well as ethical principles to be followed in the processing of personal data within the project will be defined.

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Security issues table

1. EU Classified Information (EUCI) ²		Page
Does this activity involve information and/or materials requiring protection against unauthorised disclosure (EUCI)?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Does this activity involve non-EU countries which need to have access to EUCI?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
2. Misuse		Page
Does this activity have the potential for misuse of results?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
3. Other Security Issues		Page
Does this activity involve information and/or materials subject to national security restrictions? If yes, please specify: (Maximum number of characters allowed: 1000)	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Are there any other security issues that should be taken into consideration? If yes, please specify: (Maximum number of characters allowed: 1000)	<input type="radio"/> Yes <input checked="" type="radio"/> No	

Security self-assessment

Nemesis does not involve any EU Classified Information, and therefore no special handling or protection measures are required to safeguard EUCI. No third-country entities will have access to EU Classified Information, as none is involved in the activity. The results generated by Nemesis do not present any foreseeable risks for misuse. The outcomes are in line with the goals of the project and broader community benefits. Nemesis does not involve materials or information subject to any national security restrictions. No additional security concerns have been identified. Nemesis activities have been reviewed, and no further security risks are anticipated.

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²According to the Commission Decision (EU, Euratom) 2015/444 of 13 March 2015 on the security rules for protecting EU classified information, "European Union classified information (EUCI) means any information or material designated by an EU security classification, the unauthorised disclosure of which could cause varying degrees of prejudice to the interests of the European Union or of one or more of the Member States".

³Classified background information is information that is already classified by a country and/or international organisation and/or the EU and is going to be used by the project. In this case, the project must have in advance the authorisation from the originator of the classified information, which is the entity (EU institution, EU Member State, third state or international organisation) under whose authority the classified information has been generated.

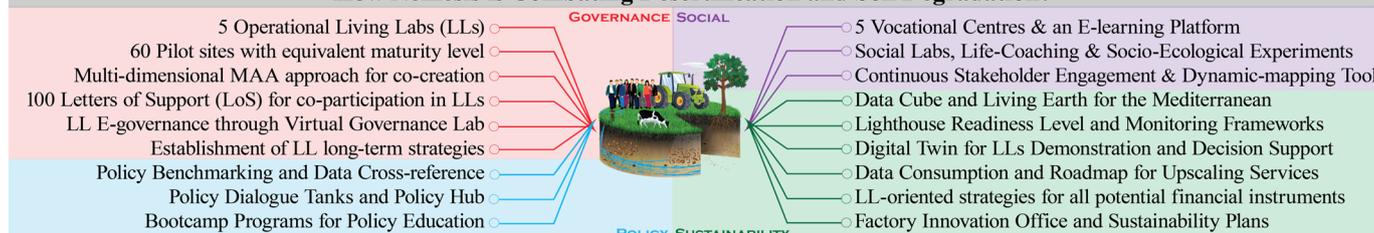
⁴EU classified foreground information is information (documents/deliverables/materials) planned to be generated by the project and that needs to be protected from unauthorised disclosure. The originator of the EUCI generated by the project is the European Commission.

List of participants

#	Participant organisation name	Short	Type	CTR	Ecosystem	Pilot
1.	ERATOSTHENES Centre of Excellence (Coordinator)	ECoE	RO	CY		Yes
2.	Agricultural Research Institute	ARI	PA	CY	Cyprus LL	Yes
3.	Cyprus University of Technology	CUT	UNI	CY	Ecosystem	Yes
4.	DEPI Spectrum LTD	DPS	SME	CY		No
5.	Cyprus Institute	CyI	RO	CY		Yes
6.	National Research Institute for Agriculture, Food and the Environment	INRAE	RO	FR	French LL	Yes
7.	French Agricultural Research Centre for Sustainable Development	CIRAD	RO	FR	Ecosystem	No
8.	Agroof Société Coopérative et Participative	AGF	NGO	FR		Yes
9.	ARVALIS Institut du végétal	ARV	RO	FR		Yes
10.	Politecnico di Milano	POLIMI	UNI	IT		Yes
11.	Council for Agricultural Research and Economics	CREA	RO	IT	Italian LL	Yes
12.	Legambiente Lombardia	LML	NGO	IT	Ecosystem	Yes
13.	Università degli Studi di Milano Statale	UNIMI	UNI	IT		Yes
14.	Regional Agency for Services to Agriculture and Forestry	ERSAF	PA	IT		Yes
15.	IRIS Cooperativa Agricola di Produzione e Lavoro PA	IRIS	SME	IT		Yes
16.	Institut National Agronomique de Tunisie	INAT	RO	TN		Yes
17.	Agence de la vulgarisation et de la formation agricoles	AVFA	PA	TN	North Africa LL	Yes
18.	Ezzayra Solutions	EZS	SME	TN	Ecosystem	Yes
19.	University of Guelma	UoG	UNI	DZ		Yes
20.	Bureau National d'Études pour le Développement Rural	BNDR	PA	DZ		Yes
21.	TM Blinacon	TMB	SME	DZ		Yes
22.	University of Murcia	UMU	UNI	ES		Yes
23.	Asociación Valenciana de Agricultores	AVA	NGO	ES	Spanish LL	Yes
24.	El Junquero Sa	EJS	SME	ES	Ecosystem	Yes
25.	Federación de Cooperativas Agrarias de Murcia	FCM	NGO	ES		Yes
26.	Odin Solutions Sociedad Limitada	ODINS	SME	ES		No
27.	interBalkan Environment Center	IBEC	NGO	GR		
28.	Maggioli SPA	MAGG	LE	IT		
29.	World Agroforestry Organization/Coalition of Action for Soil Health	ICRAF	IO	KE		
30.	adelphi research gmbH	ADR	RO	DE	Governance, Sci-	
31.	University of Dundee	UoD	UNI	UK	entific, Tech, Pol-	
32.	European Rural Development Network	ERDN	NGO	PL	icy and Soci(et)al	
33.	CIBOS INNOVATION IKE	CBS	SME	GR	Impact to support	
34.	Ellinogermaniki Agogi / Network of Schools as Living Labs	EGA	HSE	GR	the LL Ecosys-	
35.	EURICE European Research and Project Office GmbH	EURICE	SME	DE	tems and	
36.	Mistawasis Nêhiyawak	MSN	SME	CA	Knowledge shar-	
37.	University of St. Gallen	HSG	UNI	CH	ing	
38.	University of Geneva	UNIGE	UNI	CH		

RO (8)	Research Organization	UNI (8)	University	SME (9)	Small-Medium Enterprise	PA (4)	Public Authorities
NGO (6)	Non-governmental organization	IO (1)	International Organization	HSE (1)	Higher or Secondary Education	LE (1)	Large Enterprise

How Nemesis is Combating Desertification and Soil Degradation?



1. Excellence #@REL-EVA-RE@#

Current state: The [European Commission's \(EC\) Joint Research Center \(JRC\)](#) and the [Mission Board for "A Soil Deal for Europe"](#) assessed that 60-70% of the EU soils currently face the effects of unsustainable management practices, threatening soil and human health. Urgent and strategic measures are imperative to enhance sustainable management practices and safeguard the integrity of EU soils to effectively meet the [EU Green Deal's](#) and [Directive on Soil Monitoring and Resilience](#) objectives. Co-emerging challenges like the ongoing financial instability, climate change, political volatility, and even a war in Europe, highlight the need to operate within an open, co-creative,

Nemesis Living Labs (LLs) are place-based, problem-solving, co-creation, co-development, & livelihood-centred real-life environments, which will function as decentralized community-based platforms, (a) providing co-solutions (**co-creation of solutions**) for combating desertification & reversing soil degradation and (b) serving as open-access repositories of resources & affordable, accessible, adaptable, & scalable assets that contribute to the welfare of individuals & communities.

trustworthy, and inclusive framework, particularly in soil ecosystems and food safety¹ domains. **In this context**, LLs are pivotal in promoting the adoption of pioneering monitoring and management schemes within the [Soil Mission](#) and [EU strategies for sustainable ecosystems](#)². These real-life environments facilitate: **1.** the green transition towards healthy soils in an ecological, innovative, and co-creative manner, fostering knowledge and exchange, skills acquisition³, local/national/regional development, inclusive (end-)users engagement, and social/policy innovation; **2.** Experimentation and co-implementation of innovative co-solutions by diverse stakeholders to effectively mitigate adverse environmental impacts⁴; **3.** Cooperation and shared expertise to test, refine, and scale up emerging techniques, disseminate and upscale best practices, and advance pilot sites within LLs into Lighthouses (LHs) for soil health².

Why LLs to Combat Desertification NOW? The [European Court of Auditors](#) (ECA) report⁵ and EC⁶ underscore that the EU faces a concerning trend to desertification: Southern, Central, and Eastern European lands identified as being at High or Very High Risk, increased from 14% in 2008 to 25% in 2017. The EC emphasizes that countries within the Mediterranean region (MED) are among those facing the highest risk of desertification, with the [Union for the Mediterranean](#) highlighting North Africa (NA) as a prime example of severe desertification and climate change impacts. Desertification threatens food security, while intensifies water scarcity, economic instability, potential health crises, human displacement, and social disruption. To address this, the EC must increase efforts to enhance the EU legal framework for soil conservation and implement actions to achieve **land degradation neutrality by 2030**⁷. Simultaneously, the worsening environmental conditions in NA, force migratory waves to Europe, intensifying the challenges to be faced⁸. By engaging local communities in consultation processes, LLs will cultivate ► co-ownership, ► inclusivity, ► gender-responsive co-creation, ► knowledge acquisition and application, and ► innovation, leading to sustainable/scalable co-solutions deeply informed by local contexts, user needs, and culture^{9,10}.

Five Nemesis' LLs for combating desertification and soil degradation will establish a set of co-solutions in six countries in the MED through an open-access/bottom-up multi-actor approach (MAA), supported by a Digital Twin (DT). Figure 1 shows the domain of each LL and specific challenges; **Cyprus-CY:** Soil-Water; **France-FR:** Soil-Biodiversity; **Italy-IT:** Soil-Crop; **Spain-ES:** Soil-Pasture; **NA (Algeria-DZ and Tunisia-TN):** Cross-border LL in Soil Management practices). NA LL will further support [EU's global footprint on soils](#), a key objective of the [Soil Mission](#).



Why Nemesis tackles desertification and enhances soil health in the MED? Nemesis establishes five autonomous, yet interconnected, user-oriented self-sustainable LLs (in EU: CY, FR, IT, ES; in NA: TN/DZ-Fig. 1) across MED. Through them, Nemesis LLs address the desertification root causes as defined in the Impact Assessment Report¹¹, as well as combat other interconnected soil challenges, defined by the [Soil Mission](#) and the [Directive on Soil Monitoring and Resilience](#). Nemesis LLs will further be transformed into a multidisciplinary virtual LL environment (Digital Twin), incorporating relevant Soil Health Descriptors (SHDs) across diverse real-life ecosystems, and interconnecting all five Nemesis LLs into a universal hub for innovative co-solutions. The envisioned tools/frameworks will ensure the long-term viability and optimal functionality of the LLs, transforming pilot sites into LightHouses (LHs) that will serve as exemplars for promoting broad scaling up of co-solutions and achievements to tackle those challenges. The LLs will involve (end-)users targeting innovation through continuous consultation, inclusive workshops, real-world testing, and co-governance models (100 Letters of Support (LoS) have been already signed from LLs' diverse stakeholders and are available upon request). This inclusive approach exchanges new and tacit knowledge and develops adaptable tools to support decision-making and policy-shaping¹². Figure 2 presents the **Vision and Mission of Nemesis**, as a collaborative project and as a dynamic, autonomous, and sustainable LL community.

¹ European Parliament, 2024, Environment, Public Health and Food Safety, [Activity report 2019-2024](#).
² J. Bouma, J. and C. P. Veerman, 2022, Developing Management Practices in: "Living Labs", DOI: [10.3390/land11122178](#)
³ Bianchi, G., et al., 2022, The European sustainability competence framework, DOI: [10.2760/13286_JRC128040](#).
⁴ Bouwma, I., et al., 2022, Sustainability Transitions and the Contribution of Living Lab, DOI: [10.3390/su142315628](#)
⁵ European Court of Auditors, 2018, [Special report: combating desertification in the EU: a growing threat in need of more action](#) and [Background paper: Desertification in the EU](#).
⁶ European Commission, 2023, [Impact Assessment Report, Commission Staff Working Document, Part 3/5](#)
⁷ Právilie, R., Borelli, P., Panagos, P., et al., 2024, A unifying modelling of multiple land degradation pathways in Europe, DOI: [10.1038/s41467-024-48252-x](#)
⁸ European Parliament, 2021, [Report on a new EU-Africa Strategy – a partnership for sustainable and inclusive development](#).
⁹ Mohamed A. E.A., 2023, An overview of land degradation, desertification and sustainable land management, DOI: [10.1007/s12210-023-01155-3](#)
¹⁰ Compagnucci, L., et al., 2021, Living Labs and User Engagement for innovation and Sustainability, DOI: [10.1016/j.jclepro.2020.125721](#)
¹¹ European Commission, 2023, [Impact Assessment Report, Commission Staff Working Document, Part 1/5](#)
¹² European Court of Auditors, 2018, [Background paper: Desertification in the EU](#).

Fig. 2. Visions and Missions of Nemesis project and the LL network for the MED and EMENA regions

Mission of Nemesis project: To establish five autonomous, community- and place-based LLs that integrate affordable, flexible, adaptable, and scalable innovation and collaboration, fostering sustainable co-solutions to combat desertification, enhancing soil health, and promoting resilience across the MED.

Vision of Nemesis project: To establish a dynamic MED LLs community that catalyzes socio-environmental change, nurtures a harmonious coexistence with nature, and inspires a paradigm shift in addressing desertification and soil health challenges, ultimately fostering thriving and sustainable MED ecosystems.

Mission of Nemesis LLs network: To cultivate a synergistic ecosystem of LLs within the MED, dedicated to co-creating, testing, and disseminating innovative co-solutions that address the complexities of desertification, soil health degradation, environmental sustainability, considering local conditions, while assessing the potential transferability of co-solutions.

Vision of Nemesis LLs network: To become a frontrunner Hub in collaborative research, innovation, and knowledge exchange, serving as a beacon of expertise, innovation, and co-solutions in tackling desertification, nurturing soil health, and advancing sustainable development across MED.

Dissemination/outreach activities will extend across the EMENA (Europe, Middle East, and North Africa)

1.1. Objectives and ambition #@PRJ-OBJ-PO@#

Nemesis targets to co-create solutions for combating desertification and soil degradation through the following Key Objectives (KOs), all aligned with the outcomes/scope/destination of the [2024-SOIL-01-01](#) call. To justify this, the relevant Expected Outcomes (EOs) and Expected Impacts (EIs) from Impact Section 2 have been linked to the KOs.

KO1: Establish an integrated autonomous and sustainable LL community to co-create solutions to tackle desertification & improve soil health in the MED & beyond.

- ▶ Co-creating & co-governing 5 LLs employing digital tools;
- ▶ Define a trans-organizational LL co-governance structure for seamless coordination & decision-making;
- ▶ Incorporate customized business models to enhance R&I capabilities, facilitate infrastructure development, & promote sustainable & adaptable best practices within the LLs;
- ▶ Promote transparency, co-creation, inclusive, & responsible advancement, formulating an unequivocal LL data management plan that promotes the principles of data openness & cultural sensitivity;
- ▶ Establish a framework for facilitating the exchange of knowledge, experiences, & strategies among the 5 LLs.

Outputs: ■ 5 autonomous interlinked LLs; ■ Customized Governance/Business models for each LL (D1.2); ■ Open-Access Policy for each LL (D1.4); ■ Ethical Guidelines for Nemesis LL network (D1.4); ■ Local/National/Regional/EU Multi-Actor-Platforms (MAPs) (D1.3); ■ Multi-stakeholder governance, Dynamic-mapping tool (D1.3).

Linked	KPIs:	1,2,3,4,5,6,7 & Dis/tion KPIs Section 2.2.2	WPs	1	
Relation to the Soil Mission topic:		EO	1-4	EI	1-7

KO2: Enable synergistic interdisciplinary collaboration to co-create & implement locally-tailored & innovative scientific-technological-societal co-solutions to combat desertification & soil degradation.

- ▶ Bridge the gap between the key actors within the Quintuple Innovation Helix (QH), fostering shared knowledge, mutual understanding, & co-ownership;
- ▶ Establish a transdisciplinary network of stakeholders within dynamic, multi-disciplinary platforms to synergistically tackle complex desertification & co-selected soil health challenges;
- ▶ Ensure the co-design of locally adapted co-solutions harmonized with the socio-cultural fabric & distinct requirements of the local communities by establishing participatory R&I ecosystems, integrating existing and tacit knowledge, & advance local/national/regional/EU knowledge throughout the entire problem-solving process;
- ▶ Enable exchange of ideas & cross-fertilization of expertise, fostering the co-creation & co-governance of context-specific co-solutions;
- ▶ Facilitate stakeholder involvement & encourage crowdsourcing of data from their respective fields by fostering knowledge-transfer activities & facilitating the adoption of adaptable & affordable co-solutions.

Outputs: ■ Inclusive & gender-responsive Multi-Actor-Approach (MAA) & MAPs (D1.3); ■ Co-creation to co-develop events: workshops/webinars/information days/conferences/trainings (Table 9, p.28); ■ Stakeholders dynamic-mapping tool (D1.3); ■ Defining co-solutions (≥10 per LL) through co-creation and ranking by stakeholders (D4.1); ■ Practice Abstracts (≥50) communicating easy to access information to practitioners; ■ Social Labs per LL with ≥20 participants (D6.3); ■ LL life-coaching events per LL with ≥10 participants (D6.2); ■ ≥5 Socio-ecological experiments per LL for raising awareness (D6.2); ■ Collaborative platforms for bridging the gap between key actors (D1.3, D5.2, D6.2-6.3, D8.3); ■ 1 Crowd-sourcing app using low-cost sensors (D3.3); ■ Establishment of 5 VETs for transferring knowledge (D6.5); ■ Knowledge and insights exchange between LLs (D6.3).

Linked	KPIs:	1,2,3,5,6,8 & Dis/tion KPIs Section 2.2.2	WPs	1,3,4,5,6,8	
Relation to the Soil Mission topic:		EO	1-4	EI	1-7

KO3: Define context-specific sustainable solutions addressing scalability, transferability, and reproducibility, co-created within the established transdisciplinary LLs.

- ▶ Provide a virtual representation of Nemesis LLs, utilizing advanced data technologies & data-driven approaches, to assess & demonstrate the technical feasibility of co-solutions, considering their potential transferability across diverse land uses, management practices, pedoclimatic conditions, etc.;
- ▶ Establish harmonized frameworks & aggregated & easily accessible well-structured data silos to assess & support the scalability, transferability,

reproducibility, & adaptability of co-solutions, strategies, methodologies, and/or technologies across diverse local, geographical, socio-economic, & environmental contexts within MED; ► Foster knowledge dissemination & cross-learning anchored in analysing multi-dimensional factors diversified from the LL pilot sites.				
Outputs: ■ Development of well-structured databases (in-situ, lab, Earth Observation) (D3.2, D3.4, D4.3) for assessing the ESG impact of solutions co-created within LLs (D4.1); ■ Virtual representation of LLs (D3.3) through the development of a Digital Twin (DT) ingested with modules for describing Soil-Biodiversity-Water-Crop-Pasture-Management processes and for assessing the scalability and adaptability of solutions (D4.3); ■ Cost-benefit analysis tool for assessing the socio-economic dimension of developed solutions considering local conditions, while assessing the potential transferability (D6.2); ■ Training activities (Table 6, p.25) /material ingested into open-access E-learning platform (D6.4); ■ Key messages to Target Groups (TGs) and Practice Abstracts (≥50).				
Linked	KPIs:	1,2,3,4,5,7 & Dis/tion KPIs Section 2.2.2	WPs	3,4,6
Relation to the Soil Mission topic:		EO	1-4	EI
				1-7
KO4: Formulate a framework to systematically identify & showcase LHs within the LLs, serving as exemplars for outstanding achievements in soil health improvement & desertification mitigation.				
► Devise a robust framework, employing a multi-dimensional co-creating & co-developing approach, to establish explicit criteria & descriptors for evaluating pilot sites effectiveness encompassing soil health-oriented Environmental-Socioeconomic-Governmental (ESG) aspects; ► Develop a systematic data collection & analysis process to assess the performance of pilot sites; ► Establish baselines & long-term monitoring protocols to monitor the progress & impact of interventions, serving as a basis for evaluating the viability of promoting a pilot site to LH.				
Outputs: ■ Lighthouses Readiness Level conceptual framework for assessing the capacity of pilot sites (60 pilot sites plus those incorporated by the Open Calls) to be advanced into LightHouses (LHs) (D4.5; D6.6); ■ Monitoring Framework for assessing the socio-economic, environmental, and networking impact of pilot sites (D4.5) based on established baselines (D4.3) and assessment of zero-point (t ₀) maturity level (D1.1); ■ Up-to-Date MED Data Cube (DC) and Living Earth for storing harmonized required data for the assessment (D3.2, D4.2) and strengthening upscaling of LL services; ■ Framework operating as self-assessment tool for pilot sites and LLs (D6.6).				
Linked	KPIs:	1,2,3,4,8 & Dis/tion KPIs Section 2.2.2	WPs	1,3,4,6
Relation to the Soil Mission topic:		EO	1-4	EI
				1-7
KO5: Establish baselines for soil health challenges in the Living Labs, enabling accurate & spatio-temporal assessment of soil health descriptors (SHDs), monitoring progress, & supporting the EUSO development.				
► Integrate SHDs, relative to Nemesis LLs main & subsequent objectives, as outlined by the Soil Mission Implementation Plan & Directive on Soil Monitoring & Resilience , while incorporating insights from ongoing related EU projects; ► Establish a distinct reference point to enable precise spatial-temporal co-monitoring of soil health dynamics, employing advanced geospatial technologies & data-driven methodologies to validate the effectiveness of co-solutions in combating desertification; ► Ensure data integrity, consistency, & comparability for easy data & metadata retrieval & analysis for each LL; ► Establish robust protocols & data management systems to facilitate informed decision-making & policy-shaping; ► Ensure compatibility & interoperability, facilitating seamless integration & sharing of data to bolster the development of EUSO by harmonizing data & metadata, accordingly.				
Outputs: ■ Library of SHDs (D2.1, already included ≥19); ■ ≥10 Joint activities with on-going projects for utilizing outcomes in regard to defining the SHDs (D8.2); ■ Baselines and soil health conditions starting point as reference for assessing the progress within pilot sites (D4.3); ■ MED Data Cube (DC) for storing and updating data derived for/from pilot sites concerning soil health (D3.2); ■ Living Earth introducing the FAO Land Cover Classification System (LCCS) framework optimized for EO data (D3.2); ■ ≥25 Environmental Descriptors incorporating (i) SHDs and (ii) MRV frameworks from relative projects (e.g., MARVIC , MRV4SOC) (D3.2); ■ Harmonization of data and metadata (D4.2); ■ Data dictionary for DC (D4.2); ■ Open-access policy for LLs (D1.4); ■ Data Visualization stored within DC (D4.2); ■ ≥5 development of applications for data-driven decision making using App. Synthesis Engine for LLs (D3.4); ■ Data-driven policy creation implementing policy benchmarking & policy alignment (D2.1, D5.1).				
Linked	KPIs:	1,2,3,4 & Dis/tion KPIs Section 2.2.2	WPs	1,2,3,4,5,8
Relation to the Soil Mission topic:		EO	1-4	EI
				1-7
KO6: Monitor and assess the impacts of innovative solutions on selected soil health challenges and related ecosystem services, demonstrating their technical feasibility and economic viability through cost-benefit analyses.				
► Develop a solid framework for the socio-economic assessment of the proposed co-solutions, integrating Soil Health Descriptors (SHDs) into the economics of soil health improvement & desertification mitigation while considering societal implications; ► Utilize long-term monitoring data to assess the sustainability & resilience of co-created adaptive solutions & strategies for addressing evolving challenges from technical, environmental, & socio-economic perspectives; ► Develop a framework for the robust evaluation of the LLs socio-economic impact, analysing their contributions to local communities; ► Evaluate the effectiveness of LLs by assessing & demonstrating the technical feasibility of solutions to potential interested stakeholders.				
Outputs: ■ Impact assessment of LLs and co-solutions implemented within them using monitoring and robust cost-				

benefit analysis frameworks and evaluating the impact on ecosystem services and LL communities (D4.4-4.5); ■1 Digital Twin (DT) for assessing the technical feasibility of co-solutions within LLs prior to implementation and potential transferability to diverse environmental conditions (D3.3) leveraging Nemesis DC & Living Earth (D3.2); ■DT for demonstrating co-solutions; ■Cost-benefit analysis tool for assessing the socio-economic dimension of developed solutions considering local conditions, while assessing the potential transferability (D4.4); ■≥3 storylines (baseline/optimistic/pessimistic) as evolving challenges for desertification and soil health (D2.2); ■Development of intervention strategies and settling up the key objectives and contingency plans for each LL (D2.3).

Linked	KPIs:	1,2,3,4,5,7 & Dis/tion KPIs Section 2.2.2	WPs	2,3,4
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Relation to the Soil Mission topic:	EO	1-4	EI	1-7
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KO7: Develop sustainable strategies to ensure Living Labs’ long-term continuity through actionable models

► Identify & prioritize key success factors for the LLs sustainability, accomplished through implementing a collaborative strategy & the development of feasible models/guidelines; ► Engage in a co-creation process to develop sustainable strategies that ensure the long-term continuity of the LLs; ► Integrate LLs into regional, national, & international policy recommendation sources, ensuring their institutional embedding & longevity through policy alignment, advocacy, & active role in policy shaping; ► Explore funding schemes, assess the potential for partnerships, & co-develop strategies to harness resources aiming to boost the LLs’ activities; ► Capacity building activities to LL ecosystems for IPR management & translating solutions’ impact to financial revenues; ► Establishment of Task Force for upscaling, promoting, & disseminating LL-derived solutions at a global level.

Outputs: ■ Report for long-term KPIs (environmental, technological, socio-economic, governance, policy) for each LL as future targets (D1.1, D2.3, D4.5, D5.3, D6.1); ■ 10 LL-oriented sustainability plans (2 per LL incorporating all instruments) and 1 plan for Nemesis outcomes (D8.4, D8.6); ■ Intervention strategies for each LL ensuring integration of LLs into the shaping of cohesive policies for soil health and desertification (D2.3, D8.6); ■ 5 Local/National Policy Tanks (≥20 participants) & 1 EU Policy Tank ≥30 participants from ≥10 Member States and NA, and Policy Hub network comprising more than 50 policymakers and 100 stakeholders (D5.2-5.4); ■ 1 Entrepreneurship Hub comprising ≥100 stakeholders and MAPs (local/national/regional/EU) for partnerships and collaborative activities (D1.3, D8.3); ■ Training activities for LL ecosystems for IPR (D8.2) and converting ESG impacts from services into revenues for LLs (D8.5); ■ LLs Factory Capitals Office for market research and funding, and upscaling (D8.6).

Linked	KPIs:	1,2,3,4,5,7 & Dis/tion KPIs Section 2.2.2	WPs	1,2,4,5,6,8
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Relation to the Soil Mission topic:	EO	1-4	EI	1-7
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KO8: Compile the advanced solutions in a comprehensible & accessible manner, expediting their adoption among stakeholders while effectively disseminating acquired knowledge & maximizing overall accessibility & uptake.

► Develop a user-friendly digital platform with accessible formats for presenting the compiled co-solutions, including reports, manuals/guidelines, & interactive training materials, to ensure usability; ► Elaborate on establishing Vocational Education & Training institutions (VETs) within LLs to equip stakeholders with the essential knowledge & skills for adopting innovative co-solutions; ► Establish effective communication channels, co-creating outreach strategies to disseminate compiled knowledge widely to relevant (end-)users; ► Foster a culture of continuous learning & improvement; ► Encourage the information exchange & promote broader accessibility to compiled knowledge by co-creating an open-access policy; ► Monitor the impact & continuous uptake of knowledge, evaluation frameworks to assess the effectiveness of efforts & identify areas for improvement.

Outputs: ■ 1 Nemesis platform facilitating collaboration, e-learning, policy, data collection & analysis, entrepreneurship, and monitoring components within LLs (D3.1); ■ Establishment of 5 VETs (D6.5); ■ Dissemination material and outreach activities [Table 8-10, p.27] (D7.1); ■ Translating key messages from each pilot site into accessible "social" messages (D6.2) and business opportunities (D6.2 & D8.3); ■ Open-access policy for all LLs (D1.4); ■ Self-assessment tools considering LH Readiness Level (D6.6); ■ Social Labs per LL with ≥20 participants (D6.3); ■ Practice Abstracts (≥50) communicating easy to access information to practitioners (WP2-WP7); ■ ≥5 Policy Bootcamps ≥25 participants per LL (D5.5); ■ E-learning platform ≥5 languages material translated (D6.4).

Linked	KPIs:	1,4,5,6 & Dis/tion KPIs Section 2.2.2	WPs	1,2,3,4,5,6,7,8
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Relation to the Soil Mission topic:	EO	1-4	EI	1-7
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KO9: Advancing sustainable soil health solutions through cross-project synergies & interdisciplinary collaboration.

► Promote open collaboration, knowledge exchange, & cross-learning between different projects within the Mission “[Soil Deal for Europe](#),” co-creating platforms & events for sharing insights & regular interactions among stakeholders; ► Forge synergies with other Soil Health LL projects & with relative initiatives funded under different segments of the Soil Mission; ► Seek synergies with flagship projects, while capitalizing on the support services provided by the ['Living Lab Support Structure'](#); ► Utilize the power of joint efforts, co-creating campaigns & initiatives that raise awareness & mobilize support at regional & EU levels; ► Cooperation with relevant networks active at local level, such as [EU CAP Network operational groups](#), [AKIS](#), & other existing relevant partnerships (such as [Agroecology Partnership](#)); ► Facilitate Financial Support for Third Parties to advance LLs' technological maturity, expand their co-creating & co-developing networks & pilot sites, & raise awareness for soil health across the future generation;

Outputs: ■ Co-develop events: workshops/information days/joint activities (Section 2.2.1/2.2.2, Table 9-10, p.28); ■ Report for synergies with on-going projects (≥15) in Cluster 6 , Soil Mission , EJP Soil , EIP AGRI (D7.2); ■ Nemesis platform facilitating collaboration, policy, & entrepreneurship components within LLs (D3.1); ■ Think Tanks virtual events ≥5 inviting experts; ■ 3 Open Calls; ■ EU LLs Conference - EU LL Club organized by Nemesis Coordinator.				
Linked	KPIs:	1,2,3,4,5,6,7,8 & Dis/tion KPIs Section 2.2.2	WPs	3,7
Relation to the Soil Mission topic:		EO	1-4	EI
				1-7

1.1.1. Nemesis ambition

Desertification strategies and policies at the EU level

Current state-of-the-art: EU highlights desertification and land degradation as pressing concerns, marked by immediacy and increasing severity¹³. Although the EU strategies and policies contribute to desertification's alleviation and soil amelioration, yet lack precision targeting¹⁴. The lack of a dedicated desertification EU strategy is evident, with references dispersed across various frameworks, i.e., [Common Agricultural Policy \(CAP\)](#), [EU Forest Strategy](#), & [EU Adaptation Strategy](#). To tackle the ■ limited coherence in EU efforts, ■ lack of a co-governance structure and ■ long-term plan to address these issues⁴, the [European Committee of the Regions \(CoR\)](#), [European and Economic Social Committee \(EESC\)](#), and the [ECA](#) have called on the EC to develop a legal framework for an effective and coordinated EU-wide fragmented approach to combat the desertification effectively.

Beyond the state-of-the-art and innovation potential: Nemesis addresses this challenge by fostering collaboration among diverse stakeholders. Nemesis LLs will support the shaping of [Soil Monitoring Law \(SML\)](#), potentially including a targeted EU strategy dedicated to combat desertification and land degradation, by utilizing its outcomes and networks. By consolidating expertise (policy recommendations, harmonized monitoring frameworks and base-lines, decision support tools) and fostering cooperative networks (MAPs, Policy Hub, Policy Dialogue Tanks, & Policy Bootcamps), Nemesis will establish a cohesive co-governance and long-term structure tailored for sustainable solutions. This approach will enhance resource allocation and amplify the EU strategy’s effectiveness. By harmonizing data repositories (MED DC and Living Earth), Nemesis will align existing EU frameworks with a primary strategy, ensuring seamless policy implementation. This approach will “co-generate” tailor-made knowledge and bridge the coordination gap, enhancing the effectiveness of EU efforts in addressing these issues in MED and beyond.

Targeted Living Labs for Sustainable Soil Health and Soil Monitoring Law Support

Current state-of-the-art: Building in parallel with the efforts of the first Soil Health LLs, which address multiple soil health challenges ([SOILCRATES](#), [iCOSHELLS](#)) under the same land uses or fields with similar lifespan/growth cycle crops ([GOV4ALL](#), [LivingSoiLL](#)), is essential. However, an additional more focused and specialized approach emphasising on land management for specific soil health challenges is crucial, since 24% of EU soils are subject to 1 degradation process, 16% to 2, 10% to 3, and 5% to 4¹⁵. LLs on specific challenges across diverse land uses are needed to robustly support the [SML](#), achieve effective and targeted interventions while considering local contexts.

Beyond the state-of-the-art and innovation potential: By specializing in one degradation process, such as desertification, LLs can provide dedicated, intensive research and effective co-solutions. Adopting the [One-Out-All-Out \(IOAO\) approach](#), Nemesis designates combating desertification as its primary objective across diverse focus areas (soil-water-crop-biodiversity-livestock-management) and land uses, and establishes tailored sub-objectives (6 objectives / 11 soil health challenges) for each of the pilot sites within the 5 LLs (Fig. 8). All Nemesis outcomes—incl. MED DC and Living Earth for monitoring multiple SHDs, multi-focusing policy briefs and practice abstracts, multi-spectral education programs, and multi-oriented socio-ecological experiments, among others—will assist in combating desertification and other soil health challenges. The co-creation of databases of combined co-solutions will help mitigate potential rebound effects, ensuring that measures do not adversely impact other [Soil Mission objectives](#).

Scaling, Reproducibility, and Transferability of Environmental Impact and Management Practices

Current state-of-the-art: Addressing the intricate challenges of reversing land degradation and combatting desertification requires a holistic approach beyond mere homogenization¹⁶. While pilot sites serve as initial testing grounds for potential solutions, the focus on scaling, reproducibility, and transferability without considering a broader spectrum of environmental conditions and management practices would be myopic. Thus, co-solutions that are tested only across homogenized land uses are not assigned for their potential adoptability. Ignoring these complexities among diverse ecosystems can undermine the viability of solutions when transposed to different contexts.

Beyond the state-of-the-art and innovation potential: Nemesis will virtually represent the LLs through a DT to encompass the intricate interplay of soil management, water, crops, soil biodiversity, and livestock. The project presents an innovative approach that aligns technological advancements with the multifaceted demands of scaling, adopting, reproducing, and demonstrating interventions. Nemesis DT will test and refine strategies in a controlled yet dynamic environment, enabling robust evaluation and optimization of management practices and proposed co-solutions. DT’s LL demonstration capacity will bridge technological and land management innovation with end-users, enhancing their awareness and engagement. Nemesis MED Data Cube (DC) and Living Earth, along with the diverse socio-economic and environmental conditions across heterogeneous pilot sites, present a unique opportunity

¹³ European Commission, 2023, Impact Assessment Report, Commission Staff Working Document, Part 2/5
¹⁴ Dr. Irene Heuser, I., 2022, Soil Governance in current EU Law and in the EU Green Deal, DOI: [10.1016/j.soisec.2022.100053](https://doi.org/10.1016/j.soisec.2022.100053)
¹⁵ Panagos, P., et al., 2024, How the EU Soil Observatory is providing solid science for healthy soils, DOI: [10.1111/eiss.13507](https://doi.org/10.1111/eiss.13507)
¹⁶ Pfotenhauer, S., et al., 2022, The politics of scaling, Social Studies of Science, DOI: [10.1177/03063127211048945](https://doi.org/10.1177/03063127211048945)

to showcase innovations and further evaluate the scalability, reproducibility, and transferability of solutions explored in related projects (e.g., [TERRASAFE](#), [MONALISA](#)). This heterogeneity will be further reflected in the virtual LL.

Assessment methodologies and evaluations at EU level in desertification and land degradation

Current state-of-the-art: While soil health data linked to desertification and land degradation is systematically collected by both the EC and Member States, an agreed, standardized, and harmonized assessment methodology at the EU level is missing⁴. Moreover, within the [Land Degradation Neutrality target-setting voluntary programme of the UNCCD](#), only one Member State (IT) is currently engaged. This shows the need for increased participation and the formulation of national action plans under the guidance of EC, as well as the establishment of baselines for identified soil health challenges⁷. An evaluation of land degradation within the EU remains pending since the EC has not yet provided practical guidance to Member States for navigating toward land degradation neutrality. Formulating a well-defined EU vision regarding the soil strategy for achieving land degradation neutrality by 2030 is crucial.

Beyond the state-of-the-art and innovation potential: Nemesis will address the absence of a standardized methodology and conclusive assessments of desertification and land degradation across the MED. Through the knowledge exchange with ongoing projects (e.g., [AI4SOILHEALTH](#), [BENCHMARKS](#)) and in collaboration with experts and stakeholders, Nemesis will confront these issues, ensuring consistency in evaluating desertification and linked soil degradation through the establishment of baselines and pilot sites initial reference points. Nemesis foresees a scientific implementation of current assessment methodologies and evaluations of desertification (i.e., Land Sensitivity Analysis, Environmentally Sensitive Areas) and SHDs, planning the application of holistic frameworks of Land Degradation analysis. This will be achieved by leveraging the accumulated data, whereas the project will conduct rigorous analyses, develop practical guidance, and generate comprehensive reports, thereby bridging the gap in the EC's analysis and policy shaping. Nemesis will undertake region-specific evaluations of progress toward the commitment to achieving land degradation neutrality by 2030, leveraging the planned DC and Living Earth. Along with the co-creation of the Nemesis platform, crowdsourcing app, DT, e-learning space, and app generation engine, these tools will equip stakeholders with standardized and harmonized soil health-related services, data collection, analysis, and visualization, enabling to advocate for policy changes and make responsible decisions across the MED.

EU-projects in desertification lack cost-benefit assessments and sustainability

Current state-of-the-art: The [European Court of Auditors](#) highlighted that EU projects can yield positive outcomes in the context of desertification (e.g., [MONALISA](#), [TERRASAFE](#))⁴. Initiatives addressing desertification are dispersed across various domains of the EU policies, prominently featuring rural development and extending into the environment, climate, research, and regional policy domains. Nevertheless, concerns persist regarding the sustainability of these endeavors over the long term¹⁷. Member States exhibited limited use of cost-benefit analyses and faces unavailability to conduct long-term impact assessments of EU-funded projects. This limitation can be attributed to desertification not being their primary focus, the absence of a robust multi-actor approach, or due to time constraints.

Beyond the state-of-the-art and innovation potential: Nemesis continuously integrates co-governance and co-business models tailored for each LL, enhanced by a dedicated task focused on cultivating long-term viability and capacity-building activities for LL ecosystems. Nemesis prioritises the integration of comprehensive **cost-benefit analyses** and **monitoring impact assessments** as components within its innovative solutions to address and mitigate sustainability challenges against long-term enviro-socio-economic impacts. Project's approach engages networks across Member States/globally, by establishing the Factory Innovation Capitals Office, which will undertake the LLs long-term international promotion and exploitation upscaling of outcomes. The international invitation for continuous dialogue and advancement of LLs will also be empowered at local/regional level through multi-stakeholder governance, continuous consultation, and engagement with LL communities. This will be achieved by the planned dynamic mapping tool for LL (end-)users, LL life coaching, and Social Labs/Twinning programs for knowledge exchange between LLs. Nemesis inclusive collaboration will position the LLs not as isolated entities but as seamlessly integrated components of the forthcoming global and local/EU policy framework and informed decision-making to combat desertification and land degradation. Through synergies, Nemesis will lay the foundation for integrating the outcomes of funded projects into the five LLs, ensuring long-term dissemination and enhancing the impact for both the LLs and other projects, such as [MONALISA](#), [TERRASAFE](#), [CERBERUS](#), (Nemesis partners in all).#§PRJ-OBJ-PO§#

1.2. Methodology #@CON-MET-CM@# #@COM-PLE-CP@#

1.2.1. Overall Methodology

Nine WPs (Fig. 3) are designed to establish the **5** autonomous and sustainable LLs. Integrating a co-eco-approach¹⁸, **5 pillars** (Legend in Fig. 3) have been co-designed to establish and long-term operationalize real-life environments. LLs will encompass social, technological, business, management, policy-shaping, and sustainability tools critical to advancing the maximum number of each LL pilot sites to LightHouses (LHs) of knowledge exchange, co-eco-innovation, and -governance. **With 60 already selected pilot sites**, (more to come through the Open Call #1), and the **100-actor support commitment (LoS already obtained)**, the Nemesis multi-voice co-development methodology encourages the co-creation of solutions and builds trust for long-term enviro-socio-economic-innovation.

Nemesis Multi-Actor-Approach (MMA): Nemesis objectives address the needs of all Target Groups (TG – see

¹⁷ Beaudoin, C., 2022. A research agenda for evaluating living labs as an open innovation model. DOI: [10.1016/j.envc.2022.100505](https://doi.org/10.1016/j.envc.2022.100505)

¹⁸ Varvaris, I., et al., 2024. Review on Quintuple Helix Innovation and introducing co-eco-approach in support of climate change mitigation and adaptation.

Section 2), including LLs' (end)users, creating a dynamic/participatory/sustainable soil management model. Through co-creation and co-governance, stakeholder engagement is enhanced via a gender-responsive, multi-dimensional MAA, aligned with the [European Commission's Joint Communication](#). Nemesis fosters a bottom-up approach and collaborative partnerships within the LLs across all WPs, while co-designing LL activities, such as ranking solutions to be implemented in the pilots and providing feedback on OC#1 and 2. Nemesis consortium consists of key actors with diverse expertise and complementary types of knowledge, ensuring a balanced and effective team, involving actors from academia/industry/governance/civil society, incl. citizens/schools. By integrating tacit knowledge and existing practices, and building synergies with relevant projects and ecosystems (e.g., [AKIS](#)), Nemesis harnesses collective insights and adopts an integrative multi-actor engagement, adding a practical dimension to the engagement approach that transforms stakeholders into active LL players who support (non-)scientifically the [SML](#), related [SDGs](#) and existing EU strategies (Fig. 9). This produces open-access/understandable ready-to-use knowledge, tools, services, and products that align with the needs/problems/challenges/opportunities of its target audience. The QH model and existing MAPs around mature pilot sites enhance engagement strategies. Tailored dissemination/outreach efforts, using existing networks and including user-oriented practice abstracts ensure that knowledge sharing meets all TGs.



Fig. 3. Nemesis' main methodology pillars (see Legend) and corresponding Work Packages.

1.2.2. Nemesis concepts, models, and assumptions

Nemesis' LLs will act as co-creation and co-design platforms for place-based problem solving incorporating feasible co-solutions that will effectively combat desertification and contribute to the [Mission objectives](#). To achieve this, the active engagement of stakeholders under proper gender balance conditions is essential for ■ identifying key challenges/opportunities; ■ building trust and legitimacy; ■ promoting co-ownership, co-governance, and sustainability; ■ fostering co-creation/eco-innovation and ■ cross-fertilization of competencies skills, ideas and knowledge exchange between the LLs. The overall dynamic Nemesis concept and methodology are based on revealing LL (end-)users' needs, expectations, challenges, and opportunities through a continuous bottom-up approach, incorporating:

- A multi-actor engagement process will be employed throughout the project duration (T1.3), identifying relevant stakeholders (incl. pupils, teachers, and local communities) as well as developing a solid MAA strategic plan (early project stages, WP1), with the latter targeting on co-creation and co-validation processes in all project activities.
- Nemesis consortium, along with the 100 external stakeholders already committed to being involved (100 LoS) and the project's strategy to recruit more LLs-relevant (end-)users, will formulate R&I ecosystems with stakeholders (Section 3.2), fostering collaboration among diverse actors to co-establish sustainable real-life environments.
- Nemesis methodology is built around omnidirectional knowledge transfer activities between experts and communities, encompassing knowledge dissemination to relevant (end-)users (T6.3-6.5) and co-creation and co-design

actions within MAPs. This ensures that the project results (i) build on and improve existing practices and knowledge and (ii) are exploited by (end-)users to develop good practices and policies. Synergetic collaboration between relevant projects/networks and Nemesis' LLs will foster the cross-fertilization of skills and competencies.

- Nemesis demonstrates the project's added value by building on top of partners' successful contributions on past or ongoing projects, resulting in practical, ready-to-use, open-access, and easily understandable co-solutions.
- Using project partners' dissemination channels, networks, and communities, Nemesis will apply advanced dissemination tools and methods to reach (end-)users, ensuring they will be informed about activities within LLs.
- Nemesis' **co-creation procedure** is organized into six main consequential steps: (1) co-planning, (2) co-design, (3) co-construction, (4) co-development, (5) co-management/-monitoring, and (6) co-governance. Each step comprises tools and processes available to the pilot sites to accomplish the pathway to becoming LHs. LLs stakeholders will contribute to all/some steps based on their capacities and willingness to participate in the envisioned activities.

Pillar 1: Nemesis LL establishment, co-governance, and strategies (WP1 and WP2)



Fig. 4. Nemesis Ant Nest Living Lab approach

1. LLs' interconnectivity: Drawing inspiration from the organization and collaboration within ant nests (Fig. 4), Nemesis will employ a holistic co-creative approach to address desertification and advance soil health innovation. Integrating self-organization, open innovation inclusivity, and sustainability, a dynamic ecosystem will accelerate the development of impactful co-solutions and policy recommendations (WP5). Diverse stakeholders engage to contribute/learn, as

the collaboration within ant nest chambers (mitigating S1,S2 barriers, Table 5). Nemesis' approach **establishes LLs as interconnected nodes** facilitating the cross-pollination of ideas and yielding affordable/adaptable co-solutions.

Why Nemesis LLs' thematics: Nemesis LLs prioritize supporting EC strategies and the [SML](#), while also considering the local needs of the involved communities (Table 1). The principal root causes for land degradation linked to desertification are climate change, poor irrigation and water management, monocropping, overapplication of fertilizers and pesticides, deforestation, insufficient vegetative soil cover and vegetation, wildfires, land abandonment, overgrazing, and erosion¹⁰. To tackle these and cover local communities' needs, Nemesis LLs will focus on 5 interconnected themes: **Soil-** a) **-water**, b) **-biodiversity**, c) **-crop**, d) **-management practices**, and e) **-livestock**.

Table 1. Nemesis LLs 60 pilot sites to be merged with these from the Open Call #1. *LL4 Cross-border LL between Tunisia and Algeria

Living Labs #	LL1	LL2	LL3	LL4*	LL5
Q1. In which country is the LL located?	Cyprus 	France 	Italy 	Tunisia/Algeria 	Spain
Q2. In which region(s) or sub-region(s) is the LL located?	Limassol Nicosia Paphos	Occitanie, Provence, Auvergne-Rhône-Alpes	Lombardy Emilia-Romagna	Jendouba, Kef, Souk-Ahras	Murcia, Valencia (Castellon, Alicante, Valencia)
Q3. What is the main Land use in the LL?	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture
Q4. § Which Mission Soil specific objective(s) will be mainly addressed in the LL?	The primary objective for all LLs will be combating Desertification (1), while each pilot site will also support additional sub-objectives (Fig. 7) aligned with Mission objectives ■CY:1,2,4,5,6,8; ■FR:1,2,4,6; ■IT:1,2,4,5,6,8; ■NA:1,2,4,5,7,8; ■ES:1,2,4,5,6.				
Q5. *Which soil health challenges will LLs tackle?	1, 6, 9, 10, 11, 12	1,3,7,9,10,11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	1,2,3,4,5,7,8,9,10,11	1,2,3,4,5,6,7,8,9,10,11
Q6. How many experimental sites will the LL have?	12	12	12	12	12
Q7. Will sites that demonstrate a high potential and can be converted to LHs be identified in the same region of the LL?	Yes	Yes	Yes	Yes	Yes
Q8. Which project partner is in the lead of the LL?	ECoE	INRAE	POLIMI	INAT	UMU
Q9. Which type of actors are you planning to involve in the LL?	Actors representing all QH will be involved in each LL. This has been accomplished through the partners participating as beneficiaries in each LL, and the organizations that have already signed LoS to be involved from the start of the project.				
Q10. Already ongoing co-creation activities in some of the pilot sites of the LL?	Yes	Yes	Yes	Yes	Yes

Q11. Indicate the approximate budget that will be dedicated for the establishment and implementation of activities in the LL?	€1,250,000	€1,250,000	€1,250,000	€1,250,000	€1,250,000
	Additional funding dedicated for the establishment, implementation of activities, post-project sustainability of the LLs:			EU funding: €5,750,000	
Q12. If you are planning to engage further actors or entities not already involved as partners, please indicate how many and of which type?	Nemesis will engage variety of actors through the MAA. 100 LoS have already been signed by external partners that commit their LLs participation in various ways and additional will participate through the OCs#1,2. To be engaged: A: researchers, B: landowners or C: land managers D: industry E: public administrations, F: civil society representatives (e.g., NGOs)				
	(22) B:3, C:8, D:2, E:4, F:5	(21) B:10, C:2, D:3, E:3, F:3	(20) A:1,B:6, C:1,D:2,E:2,F:8	(17) A:4, B:3, C:4, D:2, E:2, F:2	(20) A:7, B:2, C:2, D:2, E:1; F:6
Q13. Are you planning to make use of Financial Support to Third Parties (FSTP)?	Yes	Yes	Yes	Yes	Yes
	3 OCs will be conducted to: 1. Enlarge stakeholder involvement and the LLs network, 2. Support LLs' technological advancement, and 3. Enhance awareness of young people.				

*Objectives:1.Desertification; 2.Conserve Soc; 3.Sealing; 4.Reduce Soil Pollution; 5.Prevent Erosion; 6.Improve Soil Structure; 7.Reduce EU global footprint; 8.Improve soil literacy; *Challenges: 1)Soc loss mineral; 2)SOC loss organic; 3)Excess nutrients; 4)Acidification; 5)Erosion; 6)Compaction; 7)Contamination; 8)Salinization; 9)Desertification; 10)Reduces water retention; 11)Soil biodiversity loss; 12) Sealing/land take. ▶ from Directive SML Impact Assessment Report.

2. Autonomous Living Labs (LLs): Co-governance and co-eco-business models will be developed to ensure autonomy and business sustainability of Nemesis' LLs. Steering Committees (SCs) will be formed for each LL through fair, inclusive, gender-responsive, and representative procedures to oversee the decision-making and strategic direction. To operationally strengthen the SCs, capacity-building ([ENOLL programs](#)) will be conducted to elevate their knowledge and expertise, fostering a common understanding of the LL operation best practices. LL-oriented co-governance and co-eco-business models will be generated, ensuring a thorough evaluation process (T1.2). The co-governance models will ensure: (i) the institutional governance settings at operational level ranging from decision-making structures to revenue-generation strategies; (ii) the modalities and procedures to engage diverse stakeholders, from all helices, including rules for dissemination of the LL activities. Nemesis also activates (iii) mechanisms for transnational cooperation and sharing of experiences among the practices in all pilot sites, so that healthy soil against desertification governance is perceived as part of a higher EU-level societal challenge. Aligning with the [SoilWise project](#) for FAIRness on soil data, the establishment of ethical guidelines (mitigating E barrier, Table 5) and open-access policies forms an integral aspect of LLs. Nemesis will extend its co-governance approach to stakeholder management utilizing power interest and stakeholder-responsibility matrices¹⁹. Inspired by the [DESIRA](#), Nemesis will develop a dynamic-mapping tool using geospatial databases within WebGIS to ensure network representation and organic growth. The tool will integrate existing networks, support interactive mapping, and include role-based access control for secure data management. An invitation system will also facilitate the organic expansion of LLs' networks. By adopting a technology and human-centric approach, an e-governance tool (e-GovBook) will be developed for each LL, enabling timely responses and communication, and effective resource allocation and decision-making.

3. Reproducibility assurance: Comprehensive and tailored long-term strategies for each LL will foster sustainable interventions that effectively combat desertification and improve soil health. These strategies will be adapted to the unique characteristics of each LL, considering the broader objective of potential **reproducibility of the outcomes** at the EMENA. These customized strategies, encompassing aspects related to soil, crops, water, and pasture management, will serve as models for addressing land degradation and desertification in analogous regions across the EU.

4. Assessment of land degradation and relevant policies using Soil Health Descriptors (SHDs): A comprehensive, structured review of data will be conducted, including the use of [Copernicus Services](#), to outline the current state of desertification and interconnected land degradation across MED. Data will be sourced from diverse open repositories, including open databases housing information on management practices, soil health, and desertification risk, such as the [FAO Soils Portal](#), national databases, [LUCAS](#), [World Atlas of Desertification](#). The **SHDs** related to desertification and accompanied sub-objectives and soil health challenges will be expanded, incorporating insights and outcomes from the [Soil Mission Implementation Plan](#) and [Directive on Soil Monitoring and Resilience](#), and pertinent projects like [AI4SOILHEALTH](#), [BENCHMARKS](#), [TERRASAFE](#), [MONALISA](#), among others.

Moreover, **SDG indicators** related to desertification ([Target 15.3](#)) reported by [UNCCD](#) will be utilized e.g., [15.3.1](#), [2.4.1](#), [6.5.1](#), [11.3.1](#), [15.1.1](#), etc. Gaps, inconsistencies, and required improvements will be identified through policy benchmarking by aligning the collected data with existing or planned EU strategies and policies. These insights will subsequently inform **policy recommendations (WP5)**. Based on the existing state of desertification and consideration of current policies (incl. identified gaps, inconsistencies, and potential enhancements), the key drivers leading to these soil health unfavourable conditions and desertification risk will be pinpointed, and priority ranked.

5. Desertification scenarios based on the established MAPs: The abovementioned outcomes (4) will constitute the foundation for developing at least 3 desertification scenarios in a place-based manner specific to the MED and through a co-participatory approach involving the MAPs These scenarios will serve as narratives upon which the LLs strategies will be tailored: (i) baseline scenario, representing the current trajectory with minor changes in policy or management, (ii) optimistic scenario, assuming the best-case outcomes for factors like climate projections, policy

¹⁹ Agarwal, U.A., et al., 2023. Relationship Management. DOI: [10.1007/978-981-19-8206-4_11](https://doi.org/10.1007/978-981-19-8206-4_11)

implementation, and social factors, and (iii) pessimistic scenario, assuming worst-case conditions. A 4th scenario will also be explored as an optional (alternative) scenario, e.g., based on different combinations of factors, such as varying degrees of policy implementation. Mediterranean Desertification and Land Use (MEDALUS) methodology and factor analysis will be utilized to define Environmentally Sensitive Areas (ESAs) in relation to desertification and land degradation²⁰. Elements such as Land Use/Land Cover (LULC) changes and climate projections ([RCP4.5](#) and [RCP8.5](#)), social factors, vegetation patterns, soil characteristics, and indices gauging management quality (including policy implementation) will be used for developing these scenarios²¹. Each LL will define the main goals of its strategy to fit its ecosystem's unique features and needs. A contingency plan will be formulated, aligned with the [Farm to Fork Strategy](#) and [SML](#), among others, to underpin the development of policy recommendations (*WP5*).

Pillar 2: Data Ecosystem, Monitoring framework (WP3 and WP4), and Pilot Sites for LLs

LLs need to be equipped with comprehensive open-access tools and technologies for monitoring, reporting, and verifying the ESG impacts of best practices and validated services, providing the capacity to upscale and downstream the validated services across regions facing common challenges. By leveraging the planned digital advancements, LLs will create a dynamic environment that will facilitate testing and iterative design processes. Nemesis will define the data requirements of various stakeholders and end-users to ensure efficient: (i) decision-making and (ii) policy-making and implementation of EU strategies related to sustainable land management and desertification. The adopted approach will include the development of a data cube, a Digital twin, the Nemesis App Generator, the crowd-sourcing app, the Nemesis platform, Soil Health Descriptors (SHDs), as well as co-solutions and spectral libraries for monitoring SHDs. Socio-economic analysis including cost-benefit analyses will be of major importance in the project.

1. Data Ecosystem - Development of a data cube (DC) as one-stop-shop and Living Earth for MED (Start: TRL4-Through WP3-End: TRL 7): Inspired by [Nostradamus](#) and [e-shape](#) projects, Nemesis will co-develop a data cube for the MED, to operate as a consolidated data repository for the LLs. The DC will provide end-users with one-stop-shop co-solutions for accessing and analysing vast amounts of data. Open Data Cube (ODC)-derived Analysis Ready Data (ARD) will support the generation of environmental information. **Earth Observation (EO) data:** EO data will provide harmonized spatial-temporal information to assess current changes and inform/test prediction models used to implement desertification-soil-health-oriented services. Specialized DC enriched with satellite sensor data (e.g., Sentinel-1, 2 / Landsat) will be supported by the LL harmonized *in-situ* and laboratory databases in a structured manner. The "harmonization data framework" and consequent creation of "harmonized" DC will support the EU Soil Monitoring framework, channelled via the [European Soil Data Center \(ESDAC\)](#) and the [EU Soil Observatory \(EUSO\)](#) indicator dashboard, facilitating broad access to the data for all stakeholders. Through the harmonized data and associated metadata, stakeholders will access consistent and standardized soil health information, facilitating collaboration, knowledge sharing, and informed decision-making across MED, with LLs acting as knowledge meta-source. This will ensure data and information interoperability alongside long-term sustainability. Basic environmental information will be gathered from EO data. **Environmental Descriptors (EDs):** The framework will consistently retrieve EDs related to defined SHDs. Nemesis will generate spatially explicit EDs and make them available at the use-case pilot sites supporting the implementation of desertification-soil health-oriented services. For LLs, through WP2 and WP4, data derived from sources, such as soil analysis *in-situ* and measurements from labs and acquired infrastructure (WP7, OC#2), will be rasterized and optimized to a proper format, ingested within the DC. **Integration of other open data:** To support the upscaling and downstreaming of services across MED, existing open soil databases and data streams (mitigating T2 barrier, Table 5) will be integrated within the MED DC (e.g., LUCAS, Copernicus, [Planet](#), [GEO/GEOSS](#)). These will be further supported by synergies with EU-funded projects in [EU Missions, Cluster 5](#), and [6](#) with similar objectives (T7.2). Nemesis will collect geospatial data to support the relevant objectives of EU initiatives (e.g., [MRV4SOC](#), [MARVIC](#)). The project will prioritize the needs-based data requirements through a SWOT analysis considering the stakeholders' needs, EU soil-related strategies, and Nemesis targets. **Data Monitoring GUI and Living Earth:** The MED DC will have the Data Monitoring Graphical User Interface (GUI), offering various tools to apply to the data including search and filtering. Building upon the MED DC, Nemesis will introduce the existing [FAO Land Cover Classification System \(LCCS\)](#) framework optimized for EO data, called 'Living Earth' (T3.2). This system will address semantic challenges of LCCS for consistent EO implementation, including modifications to EDs, interdependency within the modular-hierarchical framework, and increased flexibility with limited data²². Essential descriptors will be generated, partly or fully (FAO LCCS classes²³), including additional descriptors (e.g., SHDs using also open-access databases). Nemesis *Living Earth* components will focus on the: **a.** advancement/implementation of algorithms that target the interrogation of dense time series of EO data (incl. Sentinels & Landsat) data to inform on, e.g., routine agricultural, forestry, water, etc.; **b.** provision of quantitative biophysical data (e.g., on vegetation productivity, soil health) for assessing trends to climate or other environmental change and **c.** routine production of detailed land cover across MED based on relevant taxonomies.

2. Nemesis Digital Twin (DT) (Start: TRL3-Through WP3-End: TRL 6) is "a virtual representation of real-world entities and processes, synchronized at a specified frequency and fidelity": Due to actual size, data, infrastructure and

²⁰ Perović, V., 2021. Major drivers of land degradation risk in Western Serbia: Future scenarios, DOI: [10.1016/j.ecolind.2021.107377](https://doi.org/10.1016/j.ecolind.2021.107377)

²¹ Rita M.D.S.P., 2021. Desertification risk assessment in Northeast Brazil: Current trends and future scenarios DOI: [10.1002/ldr.3681](https://doi.org/10.1002/ldr.3681)

²² Owers, C.J., et al., 2021. Living Earth: Implementing national standardized land cover classification systems. DOI: [10.1080/20964471.2021.1948179](https://doi.org/10.1080/20964471.2021.1948179).

²³ Lucas, R. et al., 2022. A globally relevant change taxonomy and evidence-based change framework for land monitoring. DOI: [10.1111/gcb.16346](https://doi.org/10.1111/gcb.16346).

involved stakeholders of the LLs, a virtual representation of the LLs is needed and will be achieved through a digital twin (DT), linked through RESTful-APIs with MED DC. Nemesis aims in (i) reducing the decision cycle time to near-zero; (ii) increasing anticipation and less reactive decision making, shifting from crisis management to opportunity management and demonstration tool; (iii) developing new guidelines and policy recommendations for robust and optimal decisions and (iv) reduced administrative/financial burden. Nemesis DT will be aligned to the EC vision (“[Destination Earth](#)”) which develops high-precision Earth’s digital models as one of the pillars of the [European Green Deal & Digital Strategy](#). The DT development will consist of: **a. data acquisition** through collecting and integrating diverse pre-processed/harmonized data (remote sensing/climate/soil quality/land-use) into the MED DC; **b. Model selection and development** of process-based models which accurately show sophisticated Soil-Crop-Biodiversity-Water-Pasture interactions to simulate "virtual" hypothetical experiments; **c.** Design a comprehensive DT framework to **integrate the models with the DCs** through SQL/SPARQL; **d. A scenario builder** where personalised simulations can be executed; the DT system will automatically retrieve the relevant models and data through API endpoints according to the scenario; **e. A user-friendly GUI and visualization tools** will facilitate user experience. The DT will be calibrated/validated (mitigating T4 barrier, Table 5), with real-world observations/historical data.

3. Nemesis App Synthesis Machine (Start: TRL3-Through WP3-End: TRL

6): By initially mapping the potential diverse utilization of data within the DC by stakeholders, Nemesis App Synthesis Machine will allow automatic generation of software components, enabling users to define data visualizations and logic flows through graphical or textual languages, ensuring comprehensive and efficient user-oriented application development. These cloud-based add-on modules facilitate easy application creation and data utilization. Using Model Driven Engineering, they provide domain-specific languages for non-technical users to design applications without programming, promoting the citizen developer concept. Applications are developed quickly, error-free, and integrate with external tools via standard REST endpoints, forming the Nemesis Cloud APIs. cyber-physical applications will have two main components: App Logic Components (ALC), which process data from the DC to generate domain-specific insights, and App GUI Components (AGC), which visualize these insights.

4. LL infrastructure & crowd-sourcing app (Start: TRL3-Through WP3-End: TRL 6): Nemesis will deploy a digital platform and crowd-sourcing app (Fig. 5) to collect data using the Nemesis existing infrastructure (i-BEC toolbox²⁴, CIRAD Biofunctool toolbox²⁵, Automated ground scanners²⁶, Section 3.2.2) as well as other technologies from OC#2. Inspired by [ECHO](#) and [GROW](#) projects for empowering/engaging citizens in data collection and soil science, the app will support/promote user engagement. This will trigger data collection campaigns in designated locations, allowing users to keep track of their observations and rate their experience. Initiatives will be designed and managed through a web-based API, to allow each LL to design measurement campaigns, associate them with specific targets to users, accompany them with educational material, and monitor participation and engagement levels. The app and corresponding API will support features for assigning quality levels to observations.

5. Nemesis platform: The **Nemesis platform**, linked with the dissemination web infrastructure, will support the longevity and success of LLs, policy recommendations, technological breakthroughs, digital co-solutions, Data Ecosystem, VETs, and foster stakeholder collaboration (Fig. 6). The platform will host **all components** developed throughout Nemesis. Its objective is to maximise the LLs impact by facilitating effective co-creation and co-governance. The platform engenders collaboration across: (i) policy enrichment, (ii) entrepreneurial endeavours; (iii) collaborative nexus; (iv) pilot site monitoring; (v) data ecosystem user-interface; (vi) interactive e-learning.

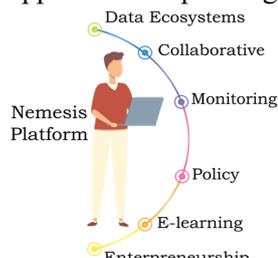


Fig. 6. Nemesis platform

The proposed holistic monitoring framework for LLs is described in 6, 7, 8 and 9, below.

6. Baselines for reporting Soil Health Descriptors (SHDs): At all LLs’ sites, selective soil sampling will be conducted based on [LUCAS 2009/2012](#) to define the starting point of desertification mitigation and SHDs’ “evolution”. Drawing from the established SHDs relative to desertification, Nemesis will determine the critical soil characteristics across all participating pilot sites (such as texture, SOC, pH, nutrient availability). To generate the SHDs layers across the pilot sites²⁷, various data will be used together with AI techniques (e.g., Random Forest, Neural Networks). **Types of data:** **a.** EO data stored within the Data Cube (DC), **b.** data collected from pilot sites and **c.** existing databases (e.g., LUCAS, pilot sites open historical data). These SHDs initial assessments will establish the baselines and thresholds for each site prior to proposed co-solutions implementation, enabling comparisons over time.

7. Co-solutions and spectral libraries for monitoring SHDs: Nemesis will develop a database of validated co-solutions (e.g., nature-based and technological) to support the objectives and targets of the LLs (databases from reports, [Oppla](#), [Lenses Project NBS Catalogue](#), [PubMed](#), etc.). Following a bottom-up approach, co-solutions will be ranked based on the needs, challenges, and maturity level of each LL through open workshops with local stakeholders



Fig. 5. Nemesis’ LL acquired infrastructure linked with the crowdsourcing app

²⁴ Karyotis, K., et al., 2021, Evaluation of a micro-electro-mechanical systems spectral sensor for soil properties estimation, DOI: [10.3390/land10010063](https://doi.org/10.3390/land10010063)

²⁵ Thoumazeau, A., 2019, Biofunctool®: a new framework to assess the impact of land management on soil quality, DOI: [10.1016/j.ecolind.2018.09.023](https://doi.org/10.1016/j.ecolind.2018.09.023)

²⁶ Belaud et al. (2024). In situ soil imaging, a tool for monitoring the hourly to monthly temporal dynamics of soil biota. Biol. Fertil. Soils. DOI: [10.1007/s00374-024-01851-8](https://doi.org/10.1007/s00374-024-01851-8)

²⁷ Tziolas, N., et al., 2021, Earth Observation Data-Driven Cropland Soil Monitoring: A Review. DOI: [10.3390/rs13214439](https://doi.org/10.3390/rs13214439)

and MAPs, and then adapted to the local contexts. LLs will implement solutions within the pilot sites, while also couple them to minimize rebound effects. Nemesis will also create the soil spectral library utilizing near-infrared (NIR) measurements. The established spectral library will also support the [GEO-CRADLE](#) incorporating the generated datasets into the [GEOSS Platform](#) and serving for future updates of baselines/thresholds. Nemesis will capitalize on existing initiatives, such as [Soil Bon](#), to expand its information repository regarding the pilot sites' soil conditions. **Pilot studies:** Nemesis delivers a list of pilot sites for the 5 LLs (60 pilot sites in total – already identified), across various land uses (Fig. 7). Nemesis picks adjacent regions in each country, following the [NATI00NS](#) recommendations. To interpret the map in Fig. 7, the following details are provided: a) Pilot site soil type; b) Management type; c) Synergies between Nemesis LLs; d) Partner(s) responsible; e) Funding schemes of the projects that pilot site was used for; f) Examined SHDs; g) Sub-objectives beyond desertification; h) Established MAPs.

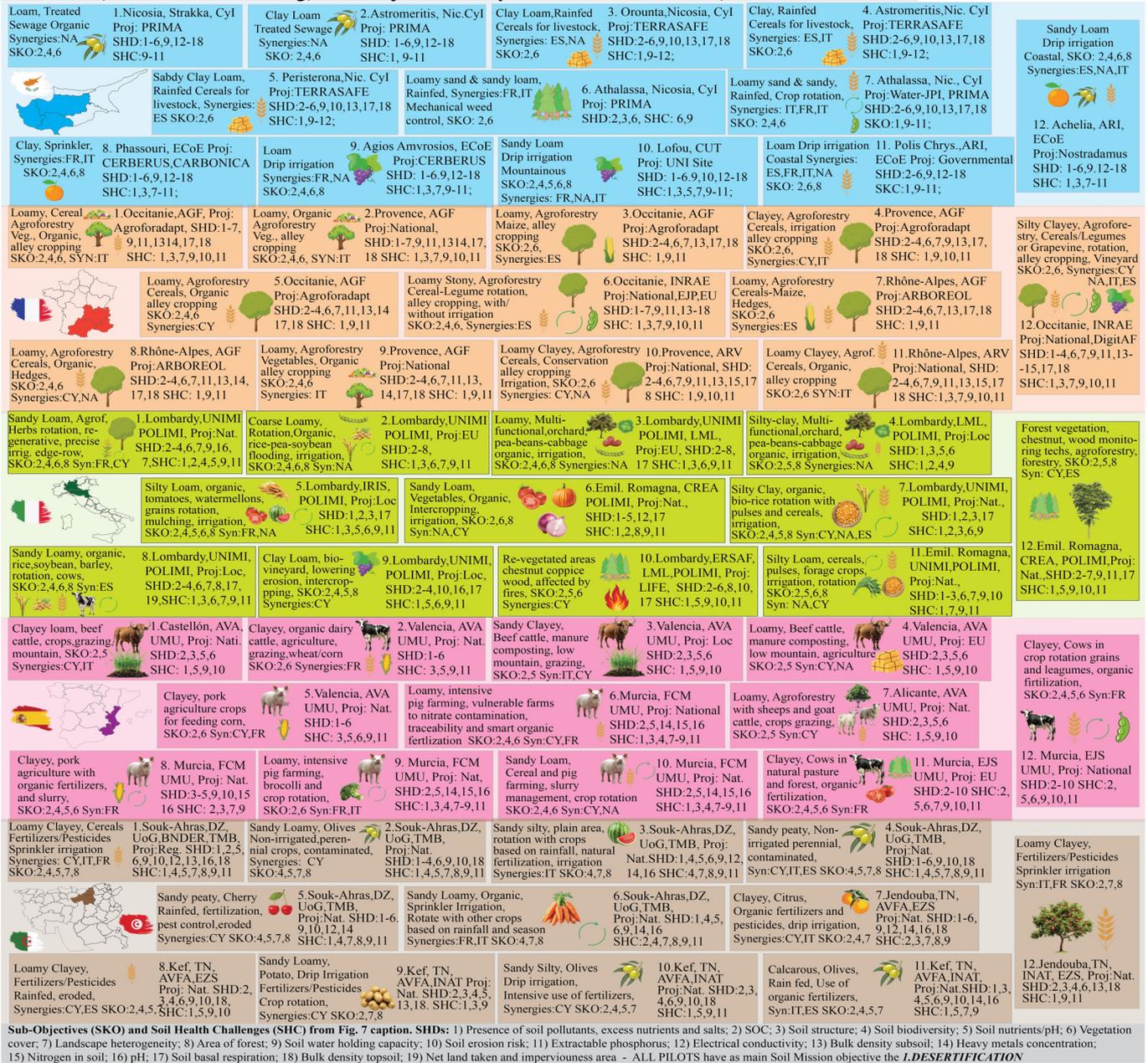


Fig. 7. Nemesis LLs Pilot sites, Sub-objectives and SHDs based on [Soil Mission Implementation Plan](#), [Directive](#), and MAPs

8. Cost benefit analysis and soil health 'economy': Nemesis will develop a cost-benefit analysis tool for assessing and evaluating the generated co-solutions (T4.4). The incorporated SHDs and the impacts of the co-solutions on land degradation and desertification will be translated into the 'economy' of soil health, using socio-economic models and variables, market analysis and trends, and ESG impact assessments. Apart from soil fertility, another two economic aspects related to soil health will be considered: (i) the impact of the conservation system in reducing operational costs, and (ii) its effect on enhancing the soil's biological, physical, and chemical attributes, which are key components for soil health metrics. The socio-economic impact of the developed innovative co-solutions will be evaluated, involving the collection of qualitative (incl. surveys) and quantitative information to establish a baseline profile and measure the impact for two stakeholder groups: decision-makers and policymakers. This tool will account for perspectives within MED and encompass other regions like the Balkan and beyond. This framework will: **a.** function as a self-assessment instrument, enabling quantifying the impact generated by each LL at various tiers, including

local/national/regional/EU levels; **b.** serve as an evaluation tool, to assess LLs potential to be advanced into LH.

9. Socio-economic and environmental monitoring: Building upon the cost-benefit analysis and the Data Ecosystem, a framework will be developed to systematically monitor and evaluate LLs and their broader impacts. This requires assessing socio-economic and environmental impacts on ecosystem services, facilitating policy formulation, fostering multi-stakeholder collaboration and continuous engagement in joint activities, nurturing knowledge sharing, and integrating developed tools and frameworks. The social monitoring component will verify the LLs non-isolation and social acceptance of the outputs through interviews with local actors and surveys submitted to citizens pre- and post-interventions to measure the gaps covered by LLs. The surveys number will be statistically significant depending on the pilot site MAP. A result-based management plan will be adopted for the environmental impact monitoring and impact on the soil ecosystem. The developed spectroscopy models, data, and metadata stored in DCs and acquired infrastructure (Open Call #2, infrastructure/crowd-sourcing app) will be included. This dynamic, reflective evaluation process will be continuously updated throughout and beyond the project's trajectory and serve as a self-assessment benchmark for comparison against predefined progress KPIs for advancing pilot sites into LHs.

10. Evaluation methods of LLs and criteria for Lighthouses (LHs): Similar to the LL-RL framework from the [PREPSOIL](#) project, LL-tailored LH Readiness Level (LH-RL) frameworks will be developed (mitigating T5 barrier, Table 5), allowing the Nemesis LLs Steering Committees (SCs) to evaluate and assess pilot sites for their potential to become LHs and provide structured feedback. Reports will be prepared by each LL SC using a common shared template, and Nemesis will explore collaboration with (end-)users and related projects (e.g., [SOILL](#), [SMS](#)) to involve their experts in reports' review and providing feedback. This will result in a criteria list that reflects exemplary performance in soil health and related ecosystem services and considers social-economic-technological innovation, data-driven decision-making tools, and policy recommendations. Joint workshops/webinars will be organized to facilitate input from established MAPs, and ongoing projects. The criteria established will not only be used for assessment but also possess a dynamic dimension, *crucial for determining if these sites can maintain their status as LHs over the long term*. As soil health, ecosystem dynamics, and stakeholder-needs evolve, the criteria will adapt accordingly.

Pillar 3: Societal and Policy Advancement of Living Labs (WP5 and WP6)

The methodology in this pillar is divided into two main components: **(1) Social Innovation** and **(2) Policy Innovation**.

1. Social Innovation, Raising Awareness, and Sharing knowledge:

a. Roadmap and Awareness raising: A social innovation roadmap will be designed for each LL within Nemesis, considering their respective maturity levels and establishing long-term KPIs. This roadmap aims to elevate these pilot sites into LHs. As a first step, the 'Stakeholder Shaking Actions.' will be initiated: To maximise the awareness and engagement, alongside the WP7 dissemination activities, key messages from all pilot sites will be shared through digital channels, significantly amplifying the LHs' (end-)users. Social-ecological experiments and "LL-principles life-coaching" will be conducted across the LLs, to reshape stakeholders' perspectives regarding land degradation and desertification. These Life-Coaching (incl. webinars, 'cafés des sciences', school visits by LLs) will convey LLs' outcomes and the complex interactions between ecological and social processes into actionable "social" messages, fostering soil health-aware socio-ecological communities. The events will also focus on soil literacy, incorporating open-access materials from related projects (e.g., [SOILSCAPE](#), [CURIOSOIL](#), [LOESS](#)). LL-oriented social-ecological experiments at selected pilot sites will serve as demonstrations, enhancing stakeholder acceptance of environmental policies and co-solutions. The experimental design will include ■event planning, ■pilot setup, ■stakeholder involvement, ■educational displays, and ■hands-on activities using existing/acquired infrastructure (IBEC/CIRAD).

b. Twinning programs integrating Social Labs: Knowledge exchange and transfer, along with empowering collaboration between the Nemesis LLs, will be the core elements in co-creation and building partnerships, supported by the planned Twinning Programs. Activities will include virtual meetings as Think Tanks among experts and the integration of Social Labs with MAPs, with open invitations and dialogues extended to all relevant local, national, and regional stakeholders aiming to achieve a soil-related cultural shift. The Social Labs will support the sharing of insights and challenges faced in daily operations and will also promote the LLs sustainability by disseminating their activities and messages. Additionally, they will provide the environment for collaborative problem-solving and innovation, fostering a sense of community and shared purpose. This approach could attract more service customers across the MED region, ensure adaptability in developed services, and aid potential upscaling efforts.

c. E-learning material for public: Reversing soil degradation and combating desertification is crucial in today's world, being highly dependent on effective education and engagement. All multilingual training material and methodologies needed to **(i)** combat desertification and promote soil health, **(ii)** advance pilot sites into LHs, and **(iii)** foster knowledge among stakeholders through seamless operations within the established LLs, will be integrated into an interactive, user-friendly environment hosted by the Nemesis platform. Gender-responsive and culturally contextualized interactive tools and hands-on activities will be developed. Incorporating student learning material into the Nemesis platform will transform it into a repository of educational resources for teachers by School LLs ([SALL](#)).

d. VET establishment as Nemesis Academies: Vocational education and training structures (VETs) will be established within the LLs throughout the project's duration. By outlining all the essential steps (see T6.5) required during the project, VETs will evolve into sustainable learning ecosystems, fostering continuous skill enhancement. This will

significantly contribute to the long-term success and resilience of the MED region and the EMENA at large, in combating desertification by shaping business owners into pioneers of responsible soil health eco-innovation. This approach will propagate innovative characteristics to a broader audience, thereby increasing the potential end-users of the LLs. VET training resources will potentially be used by upper primary and secondary school teachers.

2. Policy Innovation and cultivating policy-educated stakeholders

Through four interlinked steps, Nemesis will leverage its generated data and access networks to support policy through data-driven methodologies. These steps focus on helping LLs and policymakers utilize project outputs, educating stakeholders on policy shaping, and establishing a foundation for soil health, aiding the EC in meeting targets set by the [SML](#). The project will expand the co-creation for policy by organising **local and EU Policy Dialogue Tanks** and engaging with policymakers beyond Nemesis’ focus places and countries through utilizing the developed global Nemesis policy network (**Policy Hub** reaching into the local/national/EC/global policy arena, T5.2) and will provide tangible feedback/insights to policy recommendations (T5.4). Nemesis will launch interactive toolkits and policy recommendations (T5.4) alongside actions targeting local authorities to ensure replication beyond the project. These will include **LL-tailored policy frameworks and briefs** based on outcomes from WPs 2-4, focusing on democratic innovations and participatory governance for resilient policy interventions. The aim is to enhance local deliberative processes and integrate them into national policymaking. Nemesis will engage policymakers and decision-makers to validate recommendations and broaden adoption. Thus, stakeholders involved will include but not be limited to LLs and their local networks, policy lobbying private sector companies, policymakers on a local/regional/national level, and policymakers at the EU level to ensure the uptake of the project's outputs and its sustainability. Additionally, Nemesis will explore ways to support the EC's efforts to reverse soil health degradation. To achieve this, it will conduct **Policy Bootcamps in LLs**, educating key actors/individuals on the policy-shaping process. This will foster collaboration and empower participants to shape policies, leading to stronger support and commitment.

Pillar 4: Outreach, Knowledge Valorisation , and Innovation Expansion through Open Calls (WP7)

1. Dissemination (see more in section 2.2): Dissemination activities (see ANNEX FSTP, as part also of disseminating the OCs), include: presentations and active participation in relevant forums and discussions, targeted workshops/events in collaboration with EU institutions ([EC & European Presidency of the Council](#)), presentation of the results to decision-makers, policymakers, and relevant stakeholders (incl. citizens/pupils through the Education for Climate Coalition) through social media, newsletters, blogs, etc.. The exploitation and dissemination plans will be developed, as well as measures for the optimal use of the project results. The project results will be disseminated through: (i) European-wide networks of the project partners; (ii) [Erasmus+](#) as VET and the [Teacher Academies](#) supporting projects mainly on Sustainability, Environmental and Climate Change Education; (iii) established Soil Mission’s LL as well as LL networks of participants (local governments, industry, farmers, retailers, societal entities, citizens and local communities) including LLs territories (see Synergies Section 1.2.4); (iv) [JRC Units \(C, D, E, S, T\)](#). An internal and external communication link will be established for stakeholders' requirements.

2. Open Calls (OC): Nemesis will initiate three open calls (ANNEX FSTP): The **1st Open Call (OC#1 - Pillar 1)** with the main objective to increase the number of pilot sites within each LL. The **2nd Open Call (OC#2 - Pillar 2)** to enhance innovation on **cost- effective technological co-solutions** to be integrated in the LLs (**Technological Advancement Section**). The **3rd open call (OC#3 - Pillar 3)** to raise awareness among the young generation, such as pupils enrolled in elementary/high schools, building on the [SALL school network](#) where educators are familiar with science education programmes by fostering collaboration between schools and local communities.

Table 2. Open Calls descriptions, objectives, targets, and visions (for OC#1 & 2, stakeholders/MAPs will provide feedback prior to selection).

OC#1	LLs Networking – No of projects: 5-8 – Total Budget: €500,000
Objectives: Attracting and engaging systems actors/innovators who develop services benefiting and speeding the establishment of the Nemesis LLs by OC1# expanding the innovation network	
Third-Parties Benefits	For OC#1: Beneficiaries (individual/team projects) will have access to (i) infrastructure, tools and resources; (ii) project & LL events; (iii) experts and key ecosystem stakeholders; and (iv) other use-cases (sharing knowledge & experience). Stakeholders/MAPs will provide feedback prior to final selection.
Third Parties to deliver: Expansion of stakeholders engaged through project and within LLs, increasing the number of pilot sites within each LL, enlarging the number of pilot sites to become LHs; KPIs: Each LL will incorporate ≥1 additional pilot site(s) (12 already included at proposal stage), each possessing the necessary level of maturity in terms of MAP, infrastructure, and impact resulting from ongoing or past projects.	
OC#2	LLs’ Technological Advancement - No of projects: 3-6 – Total Budget: €450,000
Objectives: Attracting and engaging systems actors/innovators to develop services that can benefit and speedup the establishment of Nemesis LLs by (ii) OC#2 introduction of advanced low-cost technologies.	
Third-Parties Benefits	For OC#2: Upon consultation with Nemesis/LLs MAPs, Beneficiaries (individual or team projects) will have early access to (i) infrastructure, tools & resources; (iii) experts & key ecosystem stakeholders; and (iv) access use-cases to pilot their co-solutions; (v) other use-cases (sharing knowledge and experience).
Envisaged to be Delivered by Third Parties: For OC#2 Technological advancement of LLs incorporating affordable, adoptable, and innovative technologies within the LLs for supporting Nemesis objectives. KPI: at least	

one technology will be incorporated in each LL for supporting LLs’ objectives.	
OC#3	Raising Awareness to young people - No of projects: 10-15 – Total Budget: €50,000
Objectives: Attracting and engaging pupils in schools (from elementary up to high school level) for building on future generations, promoting soil health and combating desertification, and inspiring environmental awareness and innovation through OC#3 school competitions utilizing the school-as-living-lab concept.	
Benefits to pupils	For OC#3: Pupils, by collaborating with the local community and involved organizations will create educational projects and campaigns that raise awareness about soil health. Pupils will engage in real-life projects, where they will develop collaborative skills such as critical and systems thinking.
Envisaged: For OC#3 Expansion of stakeholders engaged through the project and within the LLs, increasing soil health awareness, and reforming future R&I ecosystems; KPIs: Representation of schools from all LL countries.	

Pillar 5: Exploitation and Holistic Sustainability plan for Living Labs and Nemesis outcomes (WP8)

1. Exploitation plan and IPR capacity building: All partners will contribute to the Exploitation Strategy and Plans to maximise the project's knowledge and technologies for market and societal value. Individual and Joint Exploitation Plans will outline pathways for commercial/non-commercial use. Business plans will assess market potential, while scientific advances and re-use will be pursued through models, methods, and prototypes for future activities. IPR capacity-building activities within the LL ecosystems will be conducted focusing on key themes such as (i) how to protect IP, (ii) how to manage agreements related to co-developed IP (e.g., joint ownership, licensing agreements), and (iii) how to manage cost/revenue sharing, among other relevant topics. These activities will ensure that Nemesis LLs are well-equipped to handle IP issues effectively, fostering a robust and sustainable innovation environment.

2. Entrepreneurship Hub: will adopt innovative and affordable co-solutions by gathering key players from across the industrial sector and fostering collaboration between the LHs and researchers, citizens, and policymakers. This will be achieved by translating the key messages from the LHs into entrepreneurship opportunities for future tailored innovations and soil-business growth. Capitalizing on industrial events and workshops, the hub will strengthen the industrial sector in the MED region and beyond, translating soil health into soil economy, and catalysing collaboration, innovation, and knowledge dissemination. By connecting various stakeholders and facilitating the exchange of insights, the hub will ensure that the innovative co-solutions developed within the Nemesis LHs are effectively applied to real-world challenges, ultimately contributing to a sustainable future. The potential for co-organizing events and workshops with the [European Institute of Innovation and Technology \(EIT\)](#) and [EDIHs](#) will be explored.

3. Capacity building for converting services into revenues: Except the user-oriented capacity building activities to stakeholders regarding Nemesis outcomes (T7.5, mitigating T1 barrier, Table 5), capacity-building activities for LL ecosystems will focus on equipping LL ecosystems with the skills and tools to translate the environmental-socio-economic-governmental (ESG) impacts of their services and co-solutions into potential revenue streams (during project and post-project). These activities will be delivered by experienced Nemesis partners. This initiative includes interactive workshops, expert sessions, and practical tools for accurate revenue mapping. By providing this mentorship to Nemesis LLs, these activities aim to ensure that LLs can effectively leverage ESG metrics, enhancing their long-term sustainability and financial viability while fostering innovation and resilience within the ecosystems.

4. LLs Factory Innovation Capitals Office and Sustainability plans of the LLs and project outcomes: as innovation ecosystems and their components: Nemesis LLs sustainability strategy includes the establishment of the Factory Innovation Capitals Office as entity (M24), to serve as the LLs primary dissemination body during and after the project (mitigating T6, EC barrier, Table 5). By leveraging the WP1-WP7 services and tools, data ecosystem, and established network, the Office will recommend upscaling and downstreaming services at local, national, and EMENA levels, focusing on pedoclimatic conditions, soil health challenges, communities’ needs and requirements, and dynamic market analysis (T8.4). The leverage of open-access and user-oriented repositories for soil health data will be exploited through strategic meetings with other projects, such as [SoilWise](#). It will liaise with EU/global initiatives, and collaborate with the Entrepreneurship Hub, to connect customers with the LL services and promote funding opportunities through various instruments (Table 3). A dedicated secure area within Nemesis platform, will keep the LL ecosystems updated. Regular engagement/joint actions with EU networks will promote LL outcomes and foster partnerships, aligning with LLs business models and leveraging exploitation strategies through the [Horizon Results Booster](#). ECoE will organize the EU LLs Conference - EU LL Club, providing the space for Soil Health and other LLs worldwide to showcase their impact, build partnerships, and inspire one another in tackling challenges, including sustainability. The Office will initiate the LLs consultancy and dissemination to (end)users in M24, aiming to increase income potential from all instruments starting from M36, with a focus on maximizing these outcomes beyond the project's duration. Strategic partnerships with organizations, EC agencies, and local/national policymakers will be sought to secure financial support towards achieving LLs’ and components’ full sustainability, delineating the planned short-, mid-, and long-term objectives/priorities. The Office will develop a self-sustainability plan. A sustainability plan will also be developed for all Nemesis project outcomes involving representatives from LLs, industry experts, relevant organizations ([CEDEFOP](#), [EVTA](#), [EVBB](#), [EIB Advisory services](#), [EIT](#)), and other stakeholders. Finally, strategic meetings and planning sessions will be organized with key EC agencies to develop a solid roadmap for the LLs. This roadmap will ensure the long-term sustainability of the LLs by enabling their continuous

service to EC agencies and positioning them as pivotal contributors to shaping local/national/EU/global policies.

Table 3. Sustainability instruments for Nemesis LLs & KPIs (more in Section 2.2.4) (meetings facilitated by reports for LL internal use).

Pathway	Instrument	Description and KPIs
Price based instruments	Price based – Grants	Grant funds provided with no expectation of repayment. From NGOs, public/private foundations, international organizations, or EC e.g., Horizon Europe, PRIMA, USDA. KPI: ≥15 joint consortium partners proposals; ≥5 national joint proposals.
Private Investments & Partnerships	Quantity based-Market	Instruments-supply and demand of soil health services and products through co-creation activities. KPIs: ≥10 services per LL based on implemented solutions; ≥5 meetings each LL with industries and on-going projects to test solutions/technologies.
	Crowd-funding, Venture Capital, Angel investors	Donors to support soil health projects; investing in Soil Health LLs, providing both capital and valuable guidance; Venture capital firms to support growth and innovation. KPI: ≥10 meetings (≥2 each LL) with key relative to instrument stakeholders.
	Risk management	Instrument for managing environmental & financial risks associated with adopted soil health practices (incl. Insurance schemes for losses from soil management co-solutions. KPI: ≥10 meetings (≥2 each LL) with key relative to instrument stakeholders.
Regulatory instruments	Regulatory	Regulatory reform such as a change in policies, regulations, and/or enforcement. Supporting LL-based government bodies, EC/national/local agencies for cohesive policy-shaping. KPI: ≥10 meetings (≥2 each LL) with key relative to instrument stakeholders.
Financial Planning & Management	Internal Planning and Management	Regularly updating and revising financial plans to adapt to new findings, and changes in funding availability; Ensuring efficient allocation of resources to various activities; Regular assessment of financial performance to guide future planning.
	Office recommendations	Following best practices and strategic recommendations provided by the Factory Innovation Office; Sharing findings and successful practices with stakeholders at various levels to promote widespread adoption and attract further funding.

1.2.3. Multidisciplinary approach & Social Sciences and Humanities (SSH)

Nemesis builds upon a multidisciplinary and interdisciplinary MAA by bringing together community members and experts from different disciplines such as LL approaches, Big Data analytics, ecosystem modelling, soil science, geoinformatics, soil-water resources-pasture-crop management, social sciences including educational and vocational training experts, policy creation and political science, education, business and management, agroeconomics and agricultural management, computer engineering, environmental engineering, EO and geospatial analysis. The MAA will address local, national, regional, and MED needs and tackle complex issues that require collaborative efforts by establishing a LL community, including local communities and civil societies. The MAA brings complementary expertise together and allows for sharing knowledge to co-create innovative co-solutions. All partners are specialists in different areas, with extensive experience in international collaboration and European R&I projects. The project’s agenda is co-designed to foster cooperation along each WP task. The WP leaders will also act as mediators and facilitators to foster collaborative activities and co-creation and to constructively deal with possible conflicts. Local, national, cross-national, and regional MAPs will be developed in a co-creative manner. Stakeholders from MAPs will continuously participate in co-creation activities within the project to co-design, -implement, -develop, -monitor, -validate, and update Nemesis’ LL joint R&I strategy and results. Each MAP will identify and liaise with local stakeholders, engaging them in R&I and support in business development, organizing engagement events, and facilitating the uptake of the co-developed knowledge. **Nemesis also integrates strong Social Science and Humanities (SSH by HSG)** aspects in its methodology to actively engage with stakeholders affected by soil health, ensuring the co-participation in all project steps, the LLs and the resilience strategies. Nemesis consortium includes expertise from various SSH disciplines such as economics, business, sociology, political science, and education to co-develop scalable platforms, co-solutions, training material, evaluation assessment tools, policy recommendations, stakeholder engagement formats, and sustainability plans. The SSH disciplines will contribute to ■steer the co-creation process towards co-solutions that target the needs, challenges and opportunities for the LL (end)users; ■psychological, pedagogical and «diffusion of innovation theory» insights; ■the effective and sustainable co-development, co-monitoring and co-evaluation of all project results, including tackling legal, technical and human obstacles; ■ensure that the Nemesis’ outcomes are robust, trustworthy, accessible and highly user-friendly; ■a critical review of all deliverables by a panel composed of both SSH/STEAM experts; ■co-design/conduct inclusive project activities and events that foster knowledge exchange, promote resilience, networking and solicit feedback from all stakeholders allowing for bidirectional information flows; ■inform/engage (end)users by promoting resources and user-friendly platforms, and provide guidance to use them effectively; ■support the concerted dissemination through impactful channels; ■produce easily understandable information (e.g., policy briefs, training material) and tailor all communications to different Target Groups (TGs Section 2); ■translate the produced knowledge into comprehensive and people-centred (online) TGs-tailored training activities and materials to strengthen knowledge transfer and foster digital and management skills advancement; ■use knowledge created in disciplines such behavioural methodologies for “stakeholders shaking”; ■enable (end)users to access, analyse, evaluate and monitor high-quality data to make better-informed

decisions. Nemesis ensures that the co-creation process within the LLs will be based on the Responsible Research and Innovation principles of anticipation, reflexivity, inclusion, and responsiveness.

1.2.4. Synergies & Nemesis project list whose results will feed into the project



Synergies: Task 7.2 focuses on synergising with projects and initiatives, through partners’ participation, or by leveraging existing networks or partnerships (e.g., [Partnership for Sustainable Food Systems](#) and [FOODPathS](#)) with direct communication (Fig. 8). The synergies will broaden the pool of potential stakeholders, avoiding knowledge overlap and double funding issues. The collaboration plan includes synergies with projects such as [SOILL](#), [NATI00NS](#), [Soil-Wise](#), [NBSOIL](#), [LivingSoiLL](#), [GOV4ALL](#), [PREPSOIL](#), [iCOSHELLS](#), & [SOILCRATES](#). Agroecology LLs estab-

lished under the “[European partnership on accelerating farming systems transition](#)”, ensuring the LLs effective operation. In return, Nemesis will provide feedback/tools/practices to enhance them and support collaboration between them. To enrich Nemesis' insights **concerning SHDs**, strategic synergies with initiatives such as [AI4SOILHEALTH](#), [BENCHMARKS](#), and others (Fig. 8) will expand the current SHD list. To expand the LL network, close connections with [ENOLL](#) and all Soil Health LLs will be established. Synergies will be split into a) activities oriented toward the entire LL network or overall project activities, and b) LL-tailored synergies based on the specific needs and commonalities between the projects and LLs.

Table 4. Nemesis consortium activities whose results will feed into the project. – Abbreviation: Horizon Europe (HE)

Relevant projects	Key results for leverage
EXCELSIOR , H2020, ECoE	Digital Innovation Hub for EO & Geospatial Information in the EMENA; Ecosystem services using EO data; Targeted education services & entrepreneurship Hub.
NATI00NS , HE, POLIMI	Engagement of relevant identified stakeholders across EU; Participation in NATI00NS’s events for dissemination & outreach activities; LL methodology.
PREPSOIL , HE, INRAE	Engagement of relevant stakeholders across EU; LL & LH RLS; Atlas of living labs & soil lighthouses for dissemination, exploitation, & outreach activities.
ECO-READY , HE, CUT	ECO-READY LLs ecosystems collaboration with Nemesis network, link with EIT Food , Synergies with 10 LLs in the domains of biodiversity, food security, & climate change.
MRV4SOC , HE, CREA	Standardized MRV schemes and integration in Living Earth frameworks, while providing data through MED DC for supporting the MRV4SOC approaches and tools across LLs.
Nostradamus , HE, UNIGE, HSG, ECoE	Multi-functional open-access digital applications & services for resilient agricultural sector; Upscaling services derived from LLs to Germany, Slovenia, Serbia, Switzerland.
CERBERUS , HE, ECoE	Early pest detection & intelligent spray applications to reduce pesticide use integrating Copernicus-enhanced observation models, IoT, robot monitoring & citizen-generated data.
TERRASAFE HE, Cyl	Nature-based, social & technological innovations for combatting desertification; Multi-actor platforms for synergies; Testing & Validating technologies; SHDs for Desertification.
SOILSCAPE HE, ICRAF/CA4SH	Soil literacy innovations & open-access materials to be utilized for awareness raising; People centric transformative strategies; Art-based methodologies for engagement.
SALL HE, EA	Academy pilots to act as the core nodes of the promotion of the SML in local communities; School network, living-lab-based methodology, training & support materials.
GROW Observatory H2020, UoD	Frameworks crowdsourced ground observations from low-cost sensors; Engagement with community groups who have decided to remain active; Local networks.
MONALISA HE, UNIGE	Insights from innovative grazing systems & management practices; MAPs; Testing/validating applications; Cost-benefit & business models for combatting desertification.
AgroOasis Life, ARI	Sustainable management co-solutions for combatting desertification & policy recommendations for efficient monitor & management.
SoilWise HE, CIRAD, CREA	Harmonization frameworks for open repositories aligning with FAIR principles, Soil Health Performance Indicators further feeding the Nemesis SHDs & Repository of technologies.

1.2.5. Gender dimension in Nemesis project

Nemesis will prioritize gender sensitivity and intersectional factors throughout the project. Nemesis will integrate gender analysis into co-creating activities by addressing the distinct biological/sociocultural needs of different genders in developing innovations/solutions (mitigating S3 barrier, Table 5). ECoE/WP/Task leaders will ensure that gender equality is embedded in all R&I activities/events to promote equal opportunities and eliminate gender-based disadvantages. Such measures: ■Mixed teams whenever possible; ■Ensuring that stakeholders groups are gender balanced to consider the respective needs, perspectives, and interests of the different genders; ■All actors promote a balanced representation of different genders within the teams (mixed teams more productive); ■Implementing mechanisms to foster a respectful, gender-neutral culture, supporting interdisciplinary collaboration and fair treatment, for

ALL individuals. Sexual harassment or disrespect will not be tolerated; ■ Supported by ECoE and SSH colleagues (HSG), project participants who take on leadership positions in the course of this project will actively provide for a gender balance in their teams, make themselves available as mentors and apply gender-inclusive leadership practices to claim fairness, support and promote disadvantaged genders, and facilitate work-life integration; ■ Project participants will generate, report and disseminate results, (policy) recommendations and training materials in a gender-sensitive way so that they are valuable and relevant for all. The gender action plan (D9.3) will contain all aforementioned measures; however, it will be tailored to each LL context, to include actions and interventions for tackling local gender-related challenges/needs. The proportion of non-cis-male project participants accounts for 52%.

1.2.6. Open science practices

Nemesis open science practices include: (a) **Open access and open IPR to research data** will enhance sharing via the certified repositories of partners, such as the [KTISIS](#) of CUT (*digital format*) (*ECoE full access*), under the principle of “as open as possible, as closed as necessary”; (b) **Early and open sharing of research** through preregistration, registered reports, pre-prints, or crowd-sourcing and considering only repositories and journals that accept open licensing under CC by or similar. This will be enabled through the continuous monitoring of dissemination activities by EURICE. Indicatively, some repositories for general research fields are [Figshare](#), [PeerJ](#), [arXiv](#), [Zenodo](#), while some discipline-specific repositories are [AgriXiv](#), etc. A Zenodo.org community will be setup for openly sharing project data, including outputs for allowing others to build on Nemesis work; (c) **Research output management**, as described in the DMP (D9.2); (d) **Measures to ensure reproducibility of research outputs including** 2-step publication process; Nemesis will pay special attention to ensure the reproducibility of the outputs by admitting to reproduction, replication, and re-use; (e) **Participation in open peer review**; and (f) **Citizen, civil society and end-user engagement**. Nemesis project will involve diverse stakeholders during all R&I processes, dissemination, and communication activities and jointly develop a consortium-wide publication strategy (WP7). These activities will enhance (i) relevance and effectiveness by aligning R&I with societal needs, expectations, and values, (ii) creativity and quality by expanding collective capabilities, research scope, and data quantity and quality, and (iii) public transparency and confidence in Nemesis. The project will reinforce the interaction between science and society by promoting the R&I agendas co-creation to involve communities directly in ‘doing’ R&I. Best practices and know-how from H2020 and Horizon Europe projects and initiatives will be considered (Fig. 8, joint activities). The consortium’s social media will be interconnected to the Nemesis dedicated social media channel. A Nemesis website will serve as central information hub for all stakeholders informing about the project, its progress and results. All research outputs produced from the implementation of Nemesis will be **aligned with the EU’s Open Access and Open Science obligations**. All publications will be published as “open access” papers following the “Gold” and “Diamond” model. For results published in traditional journals where these standards are not possible, these will be deposited into an online certified repository, assuring **open access to the articles**, exploiting the prior obligation of the EC as the funder of the research (green license). Nemesis will also **exploit the offer of Open Research Europe** for fast and free publication of results that will be disseminated broader and more transparent. For data or other results that open science practices cannot manage, **Nemesis will provide measures aligned with open knowledge sharing (e.g. workshops, presentations) and FAIR principles** promoted by EC while safeguarding the legitimate interests of the projects’ partners for commercial exploitation of the results (IPR). Open-source software will be promoted and shared on GitHub, excluding confidential/private data from the developers. **Data collection activities (e.g. during workshops, LL local activities) will adhere to the General Data Protection Regulation (GDPR)** and other privacy regulations valid at a national level, and security protocols adopted by commercial products will protect storage on digital platforms.

1.2.7. Management of data & other research outputs and AI trustworthiness

A Data Management Plan (DMP), for evolving research outputs into FAIR data, will be formulated by M6. The DMP (D9.2) will continuously be revised, and a final version will be submitted (mitigating T1 barrier, Table 5). Processing of personal data will be conducted according to the provisions of a) the GDPR (Regulation (EU) 2016/679)39, b) the Universal Declaration of Human Rights and the Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, and c) the national laws. **Privacy by design**: Partners will conduct all data collection in a privacy-aware manner and develop all IT co-solutions complying with the “privacy-by-design” approach. **Data types**: Nemesis is expected to utilize/generate 3 types of data: (1) EO, (2) ground measured, & (3) multi-source derived data (existing databases, e.g., soil, land-use, etc.). Indicatively, the data files generated will be submitted to the repositories mentioned above with the following formats according to the data type to be interoperable (switchable): **Containers**: TAR, ZIP, **Databases**: XML, CSV, **Geospatial**: SHP, GeoTIFF, NetCDF, **Moving images**: MOV, MPEG, AVI, **Sounds**: WAVE, MP3, **Statistics**: ASCII, SAS, SAV, **Still images**: JPEG, PDF, PNG, GIF, **Tabular data**: CSV, Text: XML, PDF/A, HTML, ASCII, **Web archive**: WARC. **Data collection**: The personal data collection and use will follow the data minimization principle. Sensitive personal data about ethnic origin, political opinions, religious/philosophical beliefs, trade union membership, or information concerning sex life will not be collected. **Data exploitation**: When feasible, the consortium will take measures to enable Third Parties to access, mine, exploit, reproduce and disseminate free of charge for any user our nonpersonal, non-protectable research data. **Data curation**: The consortium will deposit its research data in certified data repositories. Personal data will be stored in secure and

encrypted systems. **Data security:** Nemesis ensures data security, data recovery, secure storage of sensitive data, and that data is safely stored in certified repositories for long-term curation. **Mailing list:** Contact management software will be used to store personal data. It will enable subscribers to manage their subscriptions, providing an opt-in and opt-out process, and always under privacy principles. **Ethical and legal aspects:** The DMP will review and address any ethical/legal issues that might impact data sharing and outline relative procedures to project data management (E1 barrier, Table 5). The metadata will be made open under a Creative Common Public Domain Dedication (CC0) or equivalent, in line with the FAIR principles. **Data protection team:** This team will be responsible for data management and quality assurance comprised of the consortium partners' existing Data Protection Officers. Data will be handled under the FAIR principles. For findability purposes, all data/research outputs will be processed using the FAIRification process, including linkable data, license assignment, and metadata definition. Semantic models will be employed to convert any nonFAIR existing data. Persistent URLs and Digital Object Identifiers will be used accordingly to ease user access. The FAIR Data Point (metadata) content will be based on popular tools such as the [RE3Data Schema](#), [SHACL](#) (leading to RDF). To achieve the results interoperability, controlled vocabularies will be used, such as the [AGROVOC Multilingual Agriculture Thesaurus](#) combined with [NASA Thesaurus](#). The SAFE Format will be used for satellite images, combining image data in a binary data format and product metadata in XML. **For reusability purposes**, metadata will be provided to allow easy discovery, and will be generated with rich contextual descriptions. A README file will include a) short description of data included along with tables, figures, or sections; b) tabular data: column headings and row labels, data codes, and units definitions; c) data processing steps that may affect interpretation of results; d) description of what associated datasets are stored elsewhere, if applicable; e) contact information. Nemesis will ensure the trustworthiness and reliability of its AI systems based on [EC Trustworthy AI Assessment List](#): (i) Development/use of “White Glass” Models; (ii) Dealing with AI trustworthiness towards Nemesis’ tools adoption; (iii) Compliance with mandatory regulations (e.g., GDPR). Nemesis will consider Regulation (EU) 2024/1689 ("[EU AI Act](#)") for prohibited AI System (Art. 5 EU AI Act) and High-risk AI Systems (Chapter III EU AI Act) to enhance trustworthiness and mitigate any potential AI-related risks (see Part A-AI Ethics).

1.2.8. Project compliance with the 'do no significant harm' principle

Nemesis is fully compliant with the Do No Significant Harm (DNSH) Principle since its activities (both those carried out during the course of the project as well as the expected life cycle impact of the innovations at a commercialization stage, including both products and services), substantially contribute in a positive way and/or do not significantly harm any of the six environmental objectives set out in Articles 9 and 17 of the [EU Sustainable Finance Taxonomy Regulation](#). A preliminary analysis of key considerations that could potentially harm any of the six environmental objectives, especially in case a future wide-scale roll-out of Nemesis co-solutions is achieved, and respective mitigation actions are presented in Section 2.1.3. This project aims to positively contribute to several of the six environmental objectives in Article 17 of the Regulation (EU) 2020/852. This project will ultimately provide knowledge and pathways necessary to steer effective action towards combatting desertification and enhancing soil health, as well as for protecting and restoring biodiversity and ecosystems. [#§CON-MET-CM§#](#) [#§COM-PLC-CP§#](#) [#§REL-EVA-RE§#](#)

2. Impact [#@IMP-ACT-IA@#](#)

Nemesis will provide diverse results (Section 2.3) that significantly contribute to the Expected Outcomes (EO) in the medium term and the Expected Impacts (EI) in the long term, aligned with the Soil Mission.

TG1 – Academia (AC): Engage in collaborative research, providing scientific insights to improve soil health and combat desertification through practical experimentation and knowledge sharing.	5th HELIX OF QUINTUPLE - Sustainable soil ecosystems utilizing, co-created, co-developed, affordable, adaptable, flexible co-solutions
TG2 – Private Sector and Industry (PSI): Co-create to co-develop solutions (co-solutions) for sustainable management, integrating innovative co-solutions to foster responsible land use.	
TG3 – Governance bodies / Policymakers (GP): Policymakers at local/regional/EU level for engaging informed policies related to soil health improvement and combating desertification.	
TG4 – Land Managers (LM): Insights for needs and challenges to co-create acceptable open-source solutions to improve their efficiency, reduce costs, increase competitiveness & profitability.	
TG5 – Citizens and Local Communities (CLC): Individuals to participate in awareness & educational initiatives to adopt soil-friendly behaviours, contributing to local sustainability efforts.	
TG6 – EU Projects and Networks (RP): Collaborate within a dynamic ecosystem, sharing findings to combat desertification & support evidence-based decision-making & policy-creation.	
TG7 – Media (M): Disseminate accurate information to raise awareness about soil health and desertification issues, fostering public understanding and encouraging informed actions.	
TG8 – Civil Society (CS): Raising awareness, engage in community-driven initiatives that mobilize action, influencing policies/practices to address soil degradation & desertification effectively.	

Nemesis has already initiated the identification of the LL-oriented TGs.

Soil-Water LL	Farmers, farmers’ associations, environmental & soil scientists, ecologists, NGOs and community organizations, agricultural advisors, policymakers, municipalities, local communities, irrigation specialists and engineers, climate scientists, AgTech SMEs, local social media, etc.
Soil-	Conservationists and biodiversity experts, farmers and land managers, soil scientists incl. soil ecologists,

Biodiversity LL	agronomists, agroecologists, NGOs, policymakers, local communities, agricultural colleges, ‘chambres d’agriculture’, local social media, landscape planners, organic farming and agroforestry associations, etc.
Soil-Livestock LL	Livestock farmers, animal and soil scientists, agronomists, policymakers, NGOs, local communities, feed and forage producers, animal welfare organizations, grazing management consultants, local social media, agribusiness, organic and regenerative agriculture practitioners, citizens, etc.
Soil Management LL	Farmers, farmers’ associations, policymakers, municipalities, NGOs, consultants and land managers, composting and organic matter recycling industries, organic farming associations, soil scientists, local social media, AgTech and precision agriculture SMEs, citizens, environmental advocacy groups, etc.
Soil-Crop LL	Agronomists, farmers and farmers’ associations, NGOs, policymakers, local communities, municipalities, crop scientists, local social media, precision agriculture SMEs, climate-smart agriculture SMEs, agrochemical, food processing and distribution companies, plant breeders, insurance, etc.

2.1. Project’s pathways towards impact

2.1.1. Project’s Expected Outcomes specified in this topic

Nemesis will significantly contribute to the outcomes specified in this topic and to the Key Impact Pathways that have been designed to achieve EU’s goals in relation to the EC guidelines²⁸.

Call Expected Outcome#1 (EO1): 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.

Narrative: Nemesis will establish fully operational, co-participatory real-life environments, LLs, through the deliverables (D1.1-D1.4, D7.4, D8.2-D8.6). These will act as user-centered hubs of innovation and collaboration, driving the co-creation of solutions for soil health challenges across diverse landscapes. Structured data review (D2.1) and harmonized data (D4.2) alignment with policies (D5.1), all stored within the Nemesis Data Ecosystem (D3.2), will ensure that R&I activities are grounded in a broader policy context. The inclusive, bottom-up approach will outline the LLs strategy and define KOs (D2.3) integrating interdisciplinary/transdisciplinary elements. This approach, foundational in D1.1-1.3, supports the development of a gender-responsive, inter- and transdisciplinary MAA to be ingested across all WPs and will enhance collaboration between research, practical application, and policymaking to address soil-related environmental-socio-economic challenges. Nemesis MAPs, also incorporating the existing MAPs from the 60(+) pilots, and the dynamic stakeholder’s co-governance (D1.3), will serve as collaborative cross-sectoral platforms at local/national/regional/EU levels, co-forming the LL methodologies related to R&I and policy shaping. LLs’ collective impact will be monitored (D4.5), focusing on performance assessments and stakeholder engagement to maintain an adaptable, collaborative framework. Open Policy Tanks (D5.3) and Policy Hub (D5.2) will raise cross-sectoral dialogue for co-creating policies informed by the latest research and practice, while Policy Bootcamps will foster mutual understanding for responsible adoption, supported by the DT (D3.3). Social Labs (D6.3) will extend the collaborative efforts beyond technical solutions, incorporating socio-ecological dimensions.

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1,2,3,4,5,7,8

Related WP: 1,2,3,4,5,7,8 **Objectives:** 1-9 **KPIs** 1,2,3,4,5,6,7,8 & Dis/tion KPIs Section 2.2.2

Call Expected Outcome#2 (EO2): Enhancement of soil health in rural or urban areas where living labs are deployed, based on an established monitoring framework.

Narrative: Nemesis, through five LLs and supported by comprehensive monitoring frameworks and tools, will improve soil health across diverse environments in line with the [SML](#). A data and SHDs review (19 SHDs already incorporated as defined by [Soil Implementation Plan](#) and [Directive on Soil Monitoring and Resilience](#)) for desertification and sub-objectives (D2.1, Table 1), followed by policy benchmarking (D2.1) and scenario development (D2.2), will guide the establishment of the LLs’ long-term Key Objectives, aligning their evidence-based planned activities toward soil health improvement. The co-creation of solutions database adapted to the LLs’ local contexts and a roadmap for their implementation (D4.1) will directly contribute to soil restoration. Data harmonization (D4.2) will ensure consistency across LLs, while baseline establishment for SHDs (D4.3) will provide critical reference points for systematic monitoring. The cost-benefit analysis tool (D4.4) will evaluate the economic viability of interventions, ensuring that the implementation of solutions is affordable for end-users, supported by socio-economic benefits alongside environmental ones. A holistic monitoring framework (D4.5) will track performance and ESG impacts of the co-solutions, providing continuous feedback for improvement. The MED DC (D3.2) and Living Earth frameworks will enhance the monitoring capacity of soil health across the LLs and potential soil districts across MED, while also integrating data required for the deployment of Monitoring, Reporting, and Verification frameworks of relevant EU initiatives (e.g., [MARVIC](#), [MRV4SOC](#)). Additionally, these tools will support the upscaling of implementation and monitoring efforts across the MED, thereby expanding the LLs’ impact on soil health. The DT (D3.3) will enhance the LLs’ capacity and impact by demonstrating co-solutions, while simultaneously functioning as a DST to strengthen the adoption of these solutions and their impact through scenario simulations. The crowdsourcing app (D3.4) will improve the efficiency of soil health data collection, while the app engine (D3.5) will facilitate the easy development and provision of services for soil health. Collaboration among stakeholders will be

²⁸ [Paving the pathways to impact, 2018, EC DG Research & Innovation](#)

fostered through the Policy Dialogue Tanks (D5.3), Social Labs (D6.3), and Entrepreneurship Hub (D8.3), enabling long-term (i) co-creating, (ii) co-monitoring, and (iii) co-governing activities, bolstered by synergies with ongoing projects. Cross-referencing LLs' data with existing and forthcoming regional/national/EU policies (D5.1) and policy recommendations (D5.4) ensures that soil health interventions will align with broader policy goals, further supporting the soil health strategies. Educational and capacity-building activities (D7.5), including LL life-coaching and awareness-raising efforts (D6.2), the e-learning space (D6.4), and VETs (D6.5), will systematically promote the informed policy shaping and the adoption of best practices in land management, equipping stakeholders with tools and skills to implement, monitor, and sustain soil health improvements. The integration of additional technologies from OC#2 (D7.4), beyond those provided by IBEC/CIRAD, will further enhance soil health monitoring.

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1,2,3,4,5,6,8

Related WP: 1,2,3,4,5,6,7,8 **Objectives:** 1-9 **KPIs** 1,2,3,4,5,6,7,8 & Diss/tion KPIs Section 2.2.2

Call Expected Outcome#3 (EO3): Practice-oriented knowledge and tools are more easily available to land managers and contribute to an enhanced consideration and uptake of effective solutions for soil health and related ecosystem services across territories and sectors, in regions where the selected living labs are operating.

Narrative: Nemesis transforms land managers into stewards of sustainable soil health and ecosystem services through collaboration, empowerment, and knowledge dissemination. Data and metadata alignment (D2.1 & D5.1), ensures that the developed tools and knowledge bridge research, policy, and practical application. Social Labs (D6.3) and the gender-responsive, interdisciplinary, and transdisciplinary MAA (D1.3) enrich land managers' expertise, fostering collaboration and integrating diverse perspectives. The LLs VETs (D6.5) equip land managers with skills, serving as hubs for knowledge dissemination and participatory learning. Apart from providing practice abstracts in the EU CAP Network format, the e-learning platform (D6.4) offers learning opportunities and empowers land managers to assess soil health on-site, while supporting multiple languages. Cost-benefit analysis (D4.4) demonstrates the feasibility and value of sustainable practices across different regions, enabling easy adoption. LLs operate under an open-access model (D1.4), making the generated knowledge available to all. Continuous dissemination of the project results and key messages (D6.2 & D7.1) ensure a dynamic flow of insights, catalysing collaboration and informed decision-making. To foster co-ownership while addressing local and soil district communities' needs through a co-governance framework (D1.3), a co-solution database and adaptation strategy (D4.1) will be developed for all LLs. Pilot Sites' demonstrations, socio-ecological experiments (D6.2) using acquired infrastructure (IBEC/CIRAD), and demonstration tools like the DT (D3.3) will enhance solution adoption. A user-friendly GUI for Data-Ecosystem (D3.2) will empower land managers to exploit stored data. The crowdsourcing app integration (D3.4) underscores Nemesis' commitment to inclusive/affordable innovation. These will further support [EAGF/EAFRD](#).

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1-8

Related WP: 1,2,3,4,5,6, **Objectives:** 1-9 **KPIs** 1,2,3,4,5,6,7,8 & Diss/tion KPIs Section 2.2.2

Call Expected Outcome#4 (EO4): Policy makers in the EU and Associated Countries are more aware of local needs and differences with regard to soil health and can use this knowledge to design more effective policies.

Narrative: A robust foundation is established by cross-referencing data with policies (D2.1 and D5.1), connecting research and policy. Scenarios in D2.2 highlight current and future challenges, urging policymakers to address soil health complexities and understand local and regional needs. The MAA (D1.3) will foster cross-sectoral cooperation, infusing policymakers with insights for shaping effective policies and decisions. LLs and their virtual counterparts (D3.3) will make policy design a dynamic, informed process. Through the DT, linked with the Nemesis open-access DC and Living Earth (D3.2), and the e-learning platform (D6.4), policymakers can explore policy outcomes in a risk-free virtual environment, simulating and predicting impacts. The Policy Tanks and Hub (D5.3 & D5.2) will become arenas for data-driven policy creation, where recommendations (D5.4) and knowledge exchange empower policymakers with both localized and broader wisdom. Policy Education Bootcamps (D5.5) will ■enhance stakeholders' understanding of policy design enabling them to support implementation, ■provide constructive feedback and ■cultivate the next generation of responsible policymakers, while also supporting [EARFD/EAGF](#). Nemesis will offer tools to review/monitor existing policies while enabling the co-design and implementation of cohesive initiatives across local/national/regional/EU levels, with emphasis on establishing the Factory Innovation Office (D8.4) and short- and long-term policy-oriented sustainability plan (D8.6) for supporting [SML](#), [EU Green Deal](#), and [CAP \(GAECs\)](#). Nemesis, through MED DC/Living Earth (D3.2), will support also defining Soil Districts across MED.

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1-8

Related WP: 1,2,3,5,7,8 **Objectives:** 1-9 **KPIs** 1,2,3,4,5,6,7,8 & Diss/tion KPIs Section 2.2.2

2.1.2. Project's Expected Impacts specified in Mission: A Soil Deal for Europe.

Nemesis will significantly contribute to the long-term wider impacts, specified in Mission: A Soil Deal for Europe.

Mission Expected Impact#1 (E11): Increased knowledge on soils/underlying soil processes is widely available to a range of stakeholders and the public, and is used to inform science/practices/policies to reduce pressures on soils.

Narrative: Nemesis project outcomes, along with the e-learning platform, ensure effective dissemination of competence-based training materials for enhancing and developing knowledge and skills to all TGs (research, decision-making, policy-shaping). Twinning Programs and VETs integration ensure efficient knowledge distribution, with

the latter utilizing updated materials from the e-learning platform. Supported by the open-access MED DC and Living Earth, DT will deepen understanding in the interconnected soil-water-biodiversity-crop-pasture management nexus, aligning with Soil Mission's goals to address soil pressures. The LLs' sustainability plan, during and beyond the project, ensures long-term generation and dissemination of knowledge through open-access publications, practice abstracts, and policy recommendations, guaranteeing the diffusion of awareness and key messages across public, research, governmental, and industrial domains. They will advance co-solutions and SHDs monitoring, fostering an array of cost-effective and adaptable technologies, already included from the first years of the project (D3.3 & OC#2). These technologies will facilitate continuous soil health monitoring and reporting by a wide range of stakeholders through a crowd-sourcing app (D3.4), fostering increased knowledge about soils across MED, and providing the capacity for data-driven decision-making and policy creation for sustainable soil ecosystems.

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1-8

Related WP: 1-8 **Objective:** 1-9 **KPIs** All in Table 6 & Diss/tion KPIs Section 2.2.2

Mission Expected Impact#2 (EI2): Land managers, industries, businesses, consumers and society at large work together, in particular through Living Labs, to take effective action on soil health across sectors and land uses.

Narrative: LLs will implement a bottom-up, multi-dimensional MAA approach to continuously involve stakeholders in all activities. Tailored, cross-sectoral collaborative platforms—expanded through a dynamic mapping tool and supported by entrepreneurship and policy hubs within the Nemesis platform (D3.1) and a sustainability plan—will enable land managers/industries/businesses/citizens to actively co-create, -develop, and -validate solutions generated by the LLs. Awareness cultivation will be driven by ■cross-collaboration within Social Labs, ■LL life-coaching to foster mindset shifts for collaborative problem-solving, ■socio-ecological experiments, clear messaging, and co-eco-business models, ■engaging and educating the future generation of soil stakeholders, and ■the robust and enduring operation of LLs beyond the project's lifespan. These efforts will compel stakeholders to prioritize soil health and combat desertification in their decision-making, ensuring sustained collaboration and effective actions. Incorporating stakeholders from all sectors into the LL (e-)governance models and platforms will facilitate knowledge exchange and co-ownership. These models will foster seamless knowledge flows, connecting land managers/industries/consumers/society into a cooperative network. The e-learning platform will enhance collaboration across clusters by balancing knowledge and aligning understanding while preserving individual perspectives.

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1-8

Related WP: 1-8 **Objective:** 1-9 **KPIs** All in Table 6 & Diss/tion KPIs Section 2.2.2

Mission Expected Impact#3 (EI3): A wide range of innovations – adapted to local conditions - are in place to address the manifold pressures on soils and improve soil conditions, contributing to the Mission’s objectives.

Narrative: During and beyond the project's lifetime, LLs will be equipped with tools and knowledge to offer innovative, user-centred, and data-driven solutions for decision-making and policy-shaping. These will be place-based tailored to local conditions to meet the specific objectives across farms, forest, landscapes, and peri-urban settings in diverse geographical and socio-economic contexts. LLs will possess scalability and adaptability for other regions leveraging MED DC and Living Earth, accompanied by tools for demonstrating and assessing potential applicability of co-solutions (DT, Cost-Benefit). The primary objective of the Nemesis project is to establish 5 pipelines for the continuous flow of innovations from pilot sites that have been advanced to LHs, driving the [transition to healthy soils by 2030](#). Nemesis's achievements are dedicated to combat desertification; ► these tools will assist to reverse land degradation and restore soil health and ecosystems, effectively monitoring key SHDs across all eight Soil Mission objectives (Desertification and sub-objectives). Nemesis initiative will robustly support the new cohesive [SML](#) and designated [Nature restoration targets](#) with all the project’s outcomes, while also harmonizing data in alignment with [ESDAC](#), [EUSO](#), and [GLOSOB](#) to advance the EU soil monitoring system. By raising soil health awareness, VETs, e-learning, demonstration tools, and engaging soil users via communication channels and crowd-sourced data collection, Nemesis will evolve co-creation efforts into a holistic approach for innovation adoption.

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1-8

Related WP: 1-8 **Objective:** 1-9 **KPIs** All in Table 6 & Diss/tion KPIs Section 2.2.2

Mission Expected Impact#4 (EI4): “Soil literacy”, awareness and societal engagement, and appreciation of the vital functions of soils is increased, including awareness on the links between healthy soils, nutritious and safe food and a healthy environment.

Narrative: Nemesis’ LLs and LHs will establish long-term social innovation roadmaps and utilize diverse dissemination channels to raise awareness in soil health, engaging civil society and communities in co-creation (incl. local communities; local schools, e.g., [OSOS](#), [SALL](#) and [Foodshift 2030](#) networks; NGOs; Farmers’ and Pastoralists’ Associations but also rely on [Education for Climate Coalition](#)). By leveraging the open-access e-learning platform and offering training materials in ≥5 languages, will enable over 50% of the EMENA population to foster an appreciation for how healthy soils underpin nutritious, safe food and a wholesome environment. The Entrepreneurship-Policy-Knowledge-Collaborative Hubs will serve as platforms for broader engagement: Individuals will participate in various activities, including business-oriented ventures and VET activities, aligned with societal values. Open-access material from Soil Literacy projects (e.g., [SOILSCAPE](#), [CURIOSOIL](#), [LOESS](#)) will be integrated into the

Social Innovation Activities, socially impacting the established LLs on local communities and future generations. Informed stakeholders will act as additional dissemination channels, amplifying awareness to a broader audience. The LLs emergence as hubs of education and innovation will empower individuals to become soil health custodians.

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1-8

Related WP: 1-8 **Objective:** 1-9 **KPIs** All in Table 6 & Diss/tion KPIs Section 2.2.2

Mission Expected Impact#5 (EI5): More sustainable methods for soil management are applied and contribute to healthy oceans and water, and climate adaptation on land.

Narrative: Nemesis fosters healthy soil, protects oceans, and supports land adaptation to climate change. Scenario development and long-term strategies (Section 1.2.3) align sustainable approaches by integrating [Ocean/Climate](#) Missions perspectives. Nemesis LLs' core theme of desertification, alongside sustainable soil-crop-water-biodiversity-pasture management, will contribute to nurturing healthy oceans and enabling climate adaptation (e.g., C sequestration in soils) and mitigation on land. Aligned with the [Destination Earth](#), Nemesis DT will assess sustainable solution impacts on soil, and impact of soil health on the broader ecosystem, oceans, and climate adaptation. Soil management embraces environmentally responsible, socially equitable, and economically viable practices. Project outcomes (e.g., DC, VETs, Cost-Benefit, impact framework, SHDs) adhere to these principles. Nemesis connects key actors to achieve sustainable soil ecosystems through frugal innovation in green infrastructures. Technological advancements in LLs and the validated DT enable sustainability assessment across diverse enviro-socio-economic contexts. The Data Ecosystem with ingested data requirements for validated Monitoring, Reporting and Verification (MRV) frameworks and DT establish links between soil health and [Ocean/Climate adaptation](#) Missions, simulating the impact of sustainable solutions on reducing agrochemical/sediment inputs ([Zero pollution action plan](#)), achieving land sector climate-neutrality, and responses to extreme weather events ([Climate Adaptation Strategy](#)).

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1-8

Related WP: 1-8 **Objective:** 1-9 **KPIs** All in Table 6 & Diss/tion KPIs Section 2.2.2

Mission Expected Impact#6 (EI6): Support Mission's several EU policy and international commitments ranging from land degradation neutrality, food and nutrition security to biodiversity

Narrative: Nemesis supports effective data-driven policies to achieve sustainable soil ecosystems and halting desertification, aligning with [SDG 15.3](#) (land degradation neutrality and restoration). The established LLs and LHs will adopt long-term key objectives to support EU policies (Fig. 9), particularly the [SML](#), including the determination of Soil Districts, their monitoring, and soil health improvement, among others. These policies range from land degradation neutrality and food security to biodiversity. In developing strategies and integrating co-solutions, Nemesis considers all relevant EU strategies that recognize the significance of soil health (Section 2.1.2, Fig. 9), and collaboratively integrated them into the LLs' storylines. The data required to achieve the goals of current and planned EU strategies related to soil ecosystems will be stored and harmonized within the Nemesis Data Ecosystem, while being cross-referenced with EU and global policies. Nemesis will provide tools (incl. Digital Twin, MED DC) for co-creating, co-validating, co-monitoring, and co-governing sustainable solutions aligned with EU policy targets and suitable for various regions/ecosystems. The LLs and LHs will serve as a continuous source of evidenced-based policy recommendations. The Policy Dialogue Tanks and Policy Hub will disseminate these to a broader audience, while Policy Bootcamps will educate stakeholders in "policy design," enabling them to support EU strategies.

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1-8

Related WP: 1-8 **Objective:** 1-9 **KPIs** All in Table 6 & Diss/tion KPIs Section 2.2.2

Mission Expected Impact#7 (EI7): Support Mission for a Directive on Soil Monitoring and Resilience (Soil Monitoring Law) throughout activities for supporting soil monitoring, soil education and citizens engagement, and contributing to the definition of sustainable soil management practices.

Narrative: Nemesis establishes soil monitoring frameworks aligned with the [SML](#). It harmonizes data and metadata integrated within the Data Ecosystem, develops baselines for SHDs, and will continuously monitor LL performance. Nemesis defines and implements sustainable, adaptive co-solutions through extensive databases and scenario-based strategies, supported by cost-benefit analyses to promote economic viability and wider adoption. Nemesis emphasises on soil education and capacity building through its e-learning platform, VETs, and awareness initiatives, empowering stakeholders, including citizens, with the knowledge and skills needed to participate actively in soil monitoring and management. Nemesis fosters citizen engagement through innovative tools and platforms designed for crowdsourcing soil data and facilitating participation in monitoring activities. The Social Labs and Policy Hub also encourage community involvement in co-creating soil management strategies, ensuring that local stakeholders are heard in policy dialogues. Nemesis provides evidence-based insights to inform the development of the [SML](#), grounded in the latest scientific research and practical experiences from the field. Additionally, the Bootcamps will ensure that citizens, particularly the next generation, are well-equipped to support the [SML](#) in the future.

Type of Impact: Scientific, Economic/Technological, Societal **Related TGs** 1-8

Related WP: 1-8 **Objective:** 1-9 **KPIs** All in Table 6 & Diss/tion KPIs Section 2.2.2

Feedback to policy measures: Through a "Bricking" co-participatory approach, Nemesis will provide policy briefs and support soil-related EU and global strategies during and after project (Fig. 9). By leveraging projects

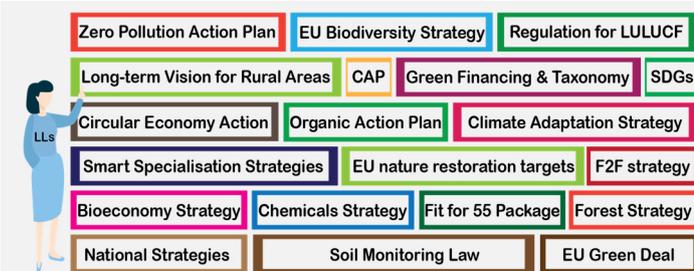


Fig. 9. Nemesis Monitoring soil related policies

outcomes and in continuous dialogue with global/EU/national/local policymakers, Nemesis will create a Policy Hub network with policymakers/stakeholders from the LLs and global networks. Policy Dialogue Tanks at EU/national/local level will be convened to facilitate discussions and validate policy recommendations. Policymakers will participate in all WPs and MAPs. E-learning for informed policy shaping will be available, policy-oriented events will be organized, and Policy

Bootcamps will “policy-educate” stakeholders. Nemesis supports EU-AU partnership and related [Objective no.7](#).

2.1.3. Requirements and potential barriers beyond the scope of the project and mitigation measures

Table 5: PESTEL-Potential barriers: Political: P, Ethical: E, Social: S, Technological: T, Economical: EC, Legal: L (left) & mitigation measures (right)

P: Lack of regulatory bodies engagement in LLs, policy recommendations adoption & participation in Policy Hub.	Nemesis' consortium includes policymakers and robust policy networks across the MED region to incorporate current needs and knowledge. During multi-actor networking, more stakeholders from across EU will be invited to increase awareness, acceptance of proposed solutions, and support for the upcoming SML .
E: No ethical implications raised by the Nemesis project.	All technology providers will ensure that all processes comply with EU ethical regulations and guidelines (same policy extended to funded Third Parties for OC#2).
S1: Stakeholders skeptical, with low involvement/reluctance to adopt co-solutions.	Nemesis prioritizes stakeholder engagement and co-participatory design from the start through an MAA. It will ensure full involvement in all LLs' co-development activities, fostering co-ownership, & co-organizing joint actions with stakeholders.
S2: TGs Engagement with different capacities /levels of knowledge adaptation of co-solutions within LLs.	Nemesis will co-develop user-oriented training material facilitated by an e-learning platform as a critical aspect of ensuring the successful adoption and utilization of LLs outcomes. Additionally, the co-establishment of the VETs will effectively engage stakeholders across different TGs and with varying levels of knowledge.
S3: Gender inequalities in MAPs/activities within LLs.	Consider gender balance in MAPs' composition to ensure that genders' perspectives and experiences are fully integrated into decision-making and policy shaping.
T1: Interoperability of data hub/digital solutions.	Existing collaboration and previous experience of the involved partners guarantee the interoperability of the DCs and DT (UNIGE, i-BEC,CIBOS, ECeE, POLIMI)
T2: Access to the identified data is limited.	Open-source satellite data and existing databases are utilized to ensure access to required data.
T3: Technologies that LLs lack the skills to use.	Training activities by tech providers (IBEC, CIRAD, OC#2) will be specifically designed to familiarize partners/stakeholders with the LLs integrated technologies.
T4: Inadequate accuracy of simulation models in DT.	The deployment of pilot sites is scheduled to co-validate the modules integrated into the developed DT. LLs Experts will contribute to the modules development.
T5: Pilot sites performance not adequate to be advanced into LHs.	Nemesis monitoring framework will be used to track and evaluate the performance of LHs, providing feedback to keep them on the right track. All the tools, storylines, and roadmaps will be provided to assist in achieving the target of becoming LHs.
T6: Long-term sustainability of project's outcomes is not adequately secured.	A dedicated task will ensure the sustainability of all outcomes, with planned actions across multiple WPs. The Factory Innovation Office and capacity building (IPR, revenue establishment) will support the sustainability strategy.
EC: Guarantee the sustainability of all project results.	A dedicated task and Factory Innovation Office focus on the sustainability of all project outcomes, & synergies/meetings with relative Programmes/Organizations.
L: Regulatory & permitting challenges during implementation of Nemesis activities	The partners will maintain close communication with local/regional stakeholders and regulatory bodies to ensure that all necessary permits and certifications are obtained, mainly referring to stakeholder engagement events.

2.1.4. Scale and significance of the project's contribution to the expected outcomes and impacts

Table 6: Nemesis KPIs–P1(at the end of project) & P2 (5-years post-project-managed/monitored by LLs/Factory Innovation Capitals Office).

Nemesis' Key Performance Indicators (KPIs) and target values, Scale, and Significance of Nemesis

KPI-1: LLs as collaboration platforms across diverse land managements; **Scale:** ▶ 5 LLs network; ▶ No. of stakeholders engaged within each LL MAP: P1≥30, P2≥60; ▶ Collaborative tailored/cross-sectoral initiatives & partnerships involving TGs & partners in each LL: [P1≥15, P2≥30]; ▶ No. of established MAPs at local/national [P1=5: 1 at each LL], MED [P1=5 LL-tailored & 1 cross-sectoral Soil-Biodiversity-Water-Crop-Pasture-Management], & EU [P1=5 LL-tailored & 1 cross-sectoral] levels; ▶ No. of local/national workshops [P1≥20, P2≥60] & EU [P1≥5, P2≥20] with ≥30 stakeholders; ▶ ≥100 participants in LL surveys from local/national MAPs for data requirements/needs/feedback; ▶ No. of stakeholders' (≥10 from TGs) visits to each pilot site [P1≥2, P2≥20]; **Significance:** ▶ No. of community members engaged in initiatives incl. individuals reached through awareness campaigns & local dissemination channels P1≥1000, P2≥5000; ▶ Participants in MAPs represent all TGs; ▶ >20% increase of interest in LLs activities (visitors/views in social media, posts interactions); ▶ >30% increase of interest in

desertification/soil health (MAPs & (end)users surveys) [assumption/baseline based on DOI:[10.3390/su141912729](https://doi.org/10.3390/su141912729)]

KPI-2: Sustainable data collection considering needs-based requirements; **Scale:** ▶ ≥5 workshops with ≥20 stakeholders participants for identifying the needs-based requirements; ▶ ≥5 participations in events organized by initiatives & partnerships related to EU strategies for transition to sustainable soil ecosystems (Green Deal/F2F, Soil Monitoring Law, CAP, etc.); ▶ No. of LL-oriented applications exploiting the digital app generation engine [P2 ≥ 10 for each LL]; ▶ ≥100 participants in LL surveys from national MAPs for data requirements; ▶ ≥2 demonstrations of IBEC/CIRAD infrastructures & OC#2 technologies per LL (≥10 participants); **Significance:** ▶ >50% of need-based requirements for data will be translated into data stores into the Nemesis DC; ▶ ≥10 participations in calls for proposals with total budget over €50M for the exploitation & enrichment of Nemesis DC with future generated databases; ▶ ≥10% improved profitability for users with access to MED DC near-real-time data for efficient decision-making [assumption/baseline based on DOI:[10.1002/aapp.13340](https://doi.org/10.1002/aapp.13340)]; ▶ ≥30% cost-effectiveness of data collection efforts in the context of integrating low-cost sensors, mobile app crowdsourcing, spectral databases use [assumption/baseline based on DOI:[10.1016/j.geoderma.2018.09.010](https://doi.org/10.1016/j.geoderma.2018.09.010)]; ▶ Supporting [SML](#) to achieve targets.

KPI-3: Co-creating solutions for combatting desertification & reversing land degradation; **Scale:** ▶ Incorporation ≥10 SHDs in each LL, ≥20 for All LLs; ▶ No. of LL-tailored co-solutions within databases; [P1 ≥ 20, P2 ≥ 40]; ▶ No. of local-tailored co-solutions tested within each LL: [P1 ≥ 10, P2 ≥ 30] co-decided with MAPs; ▶ Definition of baselines across all pilot sites; ▶ ≥1 demonstration (virtual/in-situ) of co-solutions per site (≥10 participants); **Significance:** ▶ Reduction in desertification vulnerability in LL countries [P1 ≥ 10%, P2 ≥ 20%] & MED region [P2 ≥ 15%] as a result of adopting the solutions developed within the LLs; ▶ Soil health improvement considering an average increase of each considered SHD: (e.g., increased SOM) [P1 ≥ 5%, P2 ≥ 10%]; ▶ Impact of scalability within each LL pilot site, aiming to encompass [P1 ≥ 5%, P2 ≥ 10%] of similar land use in the LL country, & [P1 ≥ 2%, P2 ≥ 5%] across MED; ▶ Improvement of SHDs from co-solutions leading to [P1 ≥ 5%, P2 ≥ 15%] decrease in operation costs [assumption/baseline based on [Economics of Soil Health](#)]; ▶ Feedback (≥100 participants in LL surveys) and willingness to adopt accessible co-solutions by MAPs ≥ 90% (evaluated through surveys) [assumption/baseline based on DOI:[10.1136/bmjopen-2021-058630](https://doi.org/10.1136/bmjopen-2021-058630)]; ▶ Contribution to [SML](#), CAP-2027, supporting EU strategies (Fig. 9).

KPI-4 Sustainable Policy influence through the established 5 LLs; **Scale:** ▶ No. of policy recommendations derived from each LL: [P1 ≥ 5, P2 ≥ 10]; ▶ Policies & decisions affected by LL-driven recommendations or actions [P2 ≥ 1 per LL]; ▶ No. number of regions, countries, or territories where LL-driven policies or recommendations will be considered in future actions [P2 ≥ 4]; ▶ No. of policy-oriented workshops/events at local/national [P1 ≥ 5, P2 ≥ 8] ≥ 20 participants & EU [P1 ≥ 1, P2 ≥ 3] with ≥ 30 stakeholders; No. of Policy Bootcamps ≥ 25 participants per LL [P1 ≥ 5, P2 ≥ 10]; ▶ No. of stakeholders in Policy Hub [P1 ≥ 100, P2 ≥ 1000]; ▶ No. of countries reached out through the Policy Hub [P1 ≥ 40, P2 ≥ 50]; **Significance:** ▶ Measure the partial/complete integration extent of LL-driven inputs in policy-shaping processes in LL countries & EU; ▶ Measure the perception & satisfaction levels through surveys from ≥ 50 policymakers for feedback to quantify satisfaction & recognition of Nemesis LL contribution to policy creation.

KPI-5: Increase in Soil Literacy, Awareness, & Societal Engagement across TGs; **Scale:** ▶ No. of Academia individuals [P1 ≥ 50, P2 ≥ 200] or groups [P1 ≥ 5, P2 ≥ 50] engaged per LL; ▶ No. of Industry individuals [P1 ≥ 50, P2 ≥ 600] or groups [P1 ≥ 50, P2 ≥ 150] engaged per LL; ▶ No. of Governance individuals [P1 ≥ 100, P2 ≥ 300] or groups [P1 ≥ 20, P2 ≥ 60] engaged per LL; ▶ No. of Civil Society individuals [P1 ≥ 1000, P2 ≥ 5000] or groups [P1 ≥ 50, P2 ≥ 150] engaged per LL; ▶ No. of schools' visits at pilot sites [P1 ≥ 6 for each LL, P2 ≥ 12]; ▶ No. of user-oriented training activities utilizing the E-learning platform material [P1 ≥ 6, P2 ≥ 20]; ▶ No. of soil literacy projects for synergies/material used [P1 ≥ 3]; ▶ No. of stakeholders trained through the VETs [P2 ≥ 100 per VET]; ▶ No. of unique users visiting E-learning platform [P2 ≥ 5.000]; ▶ No. of socio-ecological experiments for each LL [P1 ≥ 5, P2 ≥ 20]; ▶ No. of LL life-coaching events per LL with ≥ 10 participants [P1 ≥ 5, P2 ≥ 30]; ▶ No. of Think Tank events [P1 ≥ 5]; ▶ No. of Social Labs events per LL with ≥ 20 participants [P1 ≥ 3, P2 ≥ 15]; **Significance:** ▶ Increased soil literacy level among the engaged individuals or groups by ≥ 30% [assumption/baseline based on DOI:[10.1002/aapp.13340](https://doi.org/10.1002/aapp.13340) and DOI:[10.5194/soil-8-751-2022](https://doi.org/10.5194/soil-8-751-2022)]; ▶ Improved awareness among involved stakeholders regarding the connections between healthy soils, a healthy environment, & nutritious/safe food [P1 ≥ 50%, P2 ≥ 80%] (evaluated through surveys).

KPI-6: Reducing inequalities in decision-making & policy-shaping for desertification & soil health; **Scale:** ▶ ≥ 10% improved representation of diverse stakeholder groups in decision-making bodies/committees; ▶ 100% increased accessibility of innovations & information within LLs; ▶ ≥ 1 publication for women in soil science; ▶ 4 soil health awards during LL conference (by ECoE, M44) for women scientist, land manager, entrepreneur, policymaker (criteria to be defined); **Significance:** ▶ 20% increased number of policy changes or decisions influenced by diverse voices inclusion; ▶ Measure the extent to which policy recommendations from LLs address specific needs & concerns of marginalized groups; ▶ showcasing women's contributions & discussing soil challenges and opportunities.

KPI-7: Investment Attraction for soil enhancement & combatting desertification & Sustainability of LLs; **Scale:** ▶ No. of distinct funding sources, including government grants, private investments, donors, partnerships [P1 ≥ 5 for each LL, P2 ≥ 20 for each LL]; ▶ No. of workshops for the sustainability of LLs [P1 ≥ 5, P2 ≥ 20] with ≥ 30 stakeholders; ▶ No. of stakeholders involved in Entrepreneurship Hub [P1 ≥ 100, P2 ≥ 1000]; ▶ No. of countries reached out through the Policy Hub [P1 ≥ 10, P2 ≥ 20]; **Significance:** ▶ Positive changes on reduction in desertification vulnerability

[P1≥5%, P2≥20%] & soil health improvement SHI: [P1≥2%, P2≥10%] in the LL countries by attracting investments [assumption/baseline based on DOI: [10.3390/land11122178](https://doi.org/10.3390/land11122178)]; ► Return on Investment [P2≥10% positive] using the cost-benefit analysis framework. [assumption/baseline based on [United Nations Development Programme](https://www.un.org/development/dpd/indicators/)]

KPI-8: Synergies and OCs for networking expansion/technological advancement/youth empowerment; **Scale:** ► ≥1 additional pilot site per LL; ► 1≥ additional low-cost technology incorporated into LLs; ► No. of schools engaged in OC#3 [P1≥20]; ► No. of synergies with projects in Soil Mission, Cluster 6, Ocean and Waters Mission [P1≥15]; **Significance:** ► ≥10% increase in awareness & knowledge among young generations about soil health, desertification, & environmental conservation [assumption/baseline based on DOI: [10.3390/su141912050](https://doi.org/10.3390/su141912050)]; ► ≥10 increase in stakeholders' involvement & empowerment from the new pilot sites; ► Increased impact of integrated technological solutions on LL activities-(FSTP ANNEX). ► P1≥5 projects show interest for data-requirements in ED DC.

2.2. Measures to maximise impact - Dissemination, exploitation and communication #@COM-DIS-VIS-CDV@#

A strategic dissemination, exploitation, and communication plan will utilize various mechanisms to achieve impactful dissemination, exploitation, and communication outcomes possible, ensuring broad stakeholder access to individual exploitable results or identified Key Exploitable Results (KERs). A co-creation process with MAPs will be established to maximize sustainability impact through Nemesis LLs network and broader use of the project's outcomes.

2.2.1. Dissemination Strategy and measures

Table 7: TGs, distinct messages to convey, KPIs, and outreach channels. P1-duration of Nemesis (4-years), while P2-5 years after the project's end continuing disseminating LLs and outcomes-managed/monitored by LLs & Factory Innovation Capitals Office)-Horizon Europe (HE).

Target Groups / Indicative examples	How to reach them	# reached	Key message
TG1: Academia (AC): Researchers in the key areas of Nemesis and young scientists	Publications, conferences, workshops, research networks, clustering	P1>1000 P2>2000	All data obtained during project, not bound to IPR constraints, will be available on open royalty-free basis.
TG2: Priv. Sector & Industry (PI): Private equity firms, venture investors, innovation brokers, Agri-tech, etc.	B2B meetings, invitation to project events and workshops.	P1>50 P2>100	Ensuring adoption of Nemesis innovations & prepare for market readiness for Return-On-Investment
TG3: Governance bodies & Policy-makers (GP): Local/national/EU authorities & legislative bodies, formulating regulatory/policy issues related to soil, desertification, & climate change.	Online and F2F events at national & EU level, invitation at project events and workshops.	P1>50 P2>200	Support Nemesis to assist in shaping policies for desertification mitigation, soil health restoration, resource allocation, multiplying the support to Soil Monitoring Law across EU
TG4: Land Managers (LM): Small- & large-scale Farmers, Wildlife reserve, Forestry, Land rehabilitation, Grazing managers, etc.	Exhibitions, fairs, workshops, media, project events and workshops, social media.	P1>200 P2>400	Huge environmental and socio-economic benefits by adopting LLs outcomes and providing insights to their needs & data for tailoring solutions.
TG5: Citizens & Local Communities (CLC): Citizens (incl. schools) interested in soil health, impacts of climate change and environmental issues	Social media, local radio & TV, public events, school initiatives, videos, website, podcasts.	P1>100k P2>200k	Foster co-ownership and responsibility, adopt soil-friendly behaviours, understand the unique needs of their region, raise awareness
TG6 Research Projects (RP): Mainly Soil Mission in HE, also PRIMA, AU-EU partnership, ESA, ERASMUS+, etc. for sustainable LLs and soil health	Clustering activities, common workshops/lectures, social media	P1>20 P2>40	Let's partner up to maximize our combined impact to promote soil health and combat desertification.
TG7: Civil Society (CS): LL-related Associations, NGOs, Youth-led environ. clubs, Environ. advocacy groups, Civil society networks, etc.	F2F events at local/national/EU level, public workshops, social media, videos, website, podcasts.	P1>80 P2>400	Be part of the Pan-European effort to fight desertification, climate change, protect soil health. Access a strong network of potential collaborators.
TG8: Media (M): Journalists, websites, social media channels, local TV & radio stations	Targeted articles, videos, infographics, advertisements.	P1>50 P2>100	Promote our EU funded project, LLs and project outcomes to help environment and soil living ecosystems

2.2.2. Communication Strategy and measures

Nemesis' communication strategy aims to inform and promote the project's impact and benefits, to the broader society through various tools/channels. Nemesis' communication activities (Table 7) include online and offline media and interactive and non-interactive tools, complying with the GDPR and social, gender, and ethical issues.

Table 8: Dissemination & Communication tools, KPIs (MV=Means of verification: PR=Project reporting, LP=List of publications, WA=Website analytics, SM=Social media analytics, NS=Newsletter subscribers). P1-duration of Nemesis (4-years), while P2-5 years after project's end managed/monitored by LLs & Factory Office, continuing disseminating LLs and outcomes.

No.	Expected Impact	Channels & Related KPIs	P1 No.	P2 No.	TG	MV
KPI 2.1	Increased collaboration with other initiatives; N° of organized workshops		See ANNEX FSTP			
	Synergies establishment for joint research, information exchange and dissemination increased	N° of Information days at national & EU level	≥10	≥30	All	PR

KPI 2.2	Ideas' gathering and knowledge exchange with relevant communities and initiatives; Information about latest technologies/advantages; Liaisons with other initiatives; Increased awareness.	N° of attended events (open workshops, industry events, etc.)	≥50	≥100	All	PR
		N° of project presentation events	≥100			
		N° of policy forums	10	50		
KPI 2.3	Validation of the concept, findings & advantages; Results promotion, ideas' gathering & knowledge exchange with relevant communities/initiatives.	N° of conference papers	≥10	≥20	TG1	LP
		N° of journal papers	≥10	≥20	-3	
		N° of articles in magazines	≥5	≥20	TG6	
KPI 2.4	Communication of project news, events & results; Ideas' gathering, knowledge exchange; Increased awareness.	N° of industry contact points	≥50	≥500	TG2	PR
		N° of industry communities informed	≥15	≥30		
KPI 2.5	Knowledge exchange; Mutual validation of results; Joint dissemination activities; Attraction of potential partners for research collaborations.	N° of projects with synergies	≥20	≥80	All	PR
		N° of joint activities	≥10	≥50		PR
KPI 2.6	Communication of project news, events & results; Ideas' gathering and knowledge exchange; Increased awareness, engage future generations.	N° of internal partners' events	≥20	≥80	All	PR
		N° of schools' visits	≥20	≥100	TG5	PR
KPI 2.7	Communication of project results, findings, and advantages; Increased awareness.	N° of project's presentations in standardization meetings	≥5	≥20	All	PR
KPI 2.8	Main online information point; Communication of project news, events & results; Liaisons with other initiatives, Increased awareness.	N° of unique visitors on website	≥10000		All	WA
		N° of page views	≥3000			WA
KPI 2.9	Visibility to stakeholders active in social media; Attainment of interest; "Word of mouth" through the followers; Direct communication	N° of followers on Nemesis social media	≥1000	≥5000	All	SM
		N° of posts released	≥200	≥1000		SM
KPI 2.10	Communication of main project's concepts in an easily understandable manner. Oral presentations, posters, information booths, demonstrations	N° of public events	>40	≥1000	All	PR
		N° of interactions	≥1000	≥5000		SM
KPI 2.11	Communication of project news, events & results; Increased awareness.	N° of press releases	≥5	≥48	All	PR
		N° of news releases	>12			
KPI 2.12	Unique branding & visual identity of project; Provision of information about the project for the audiences targeted; Improves communication of results and information provision during events.	N° of guest podcast with experts	≥2	≥4	All	WA
		N° of newsletters	≥8	≥16		NS
		N° of videos	≥5	≥8		WA

Table 9: Events for transdisciplinary co-creation network within LLs (For leading partner and participants, see ANNEX FSTP)

► Kick-off 1st GA meeting; ► 10 Local/National Workshops with stakeholders (≥300); ► ≥5 Workshop for Synergies with on-going projects; ► ≥1 Virtual Workshop Towards social innovation and LHs; ► Central and Eastern European Workshop (≥50 participants); ► Balkans Workshop (≥50 participants); ► Open Workshop meeting at EU level (3 meetings with ≥30 each, Meetings: Academic/Industrial/Policy-oriented); ► Workshop for Data Requirements in Data Ecosystem (≥50 participants); ► 5 LL Info Days (≥200 participants); ► 5 National Information Days for future generation and stakeholders (≥200 participants); ► 5 Information Days for future generation (≥200 participants); ► 5 National Policy Dialogue Tanks workshops (≥50 public agencies); ► EU Policy Tank workshop (≥20); ► Virtual Policy Hub meeting (≥50); ► Virtual Entrepreneurship Hub meeting (≥50); ► Mid-term GA meeting; ► Training meetings for infrastructure and crowd-sourcing app and platform (≥50 participants); ► e-learning (≥50 participants); ► Data Cubes and Data Exploitation (≥50 participants); ► Digital Twin (≥50 participants); ► infrastructure from OC#2 (≥50 participants); ► Socio-ecological experiments (≥20 participants); ► Exploitation pathways workshop (≥50 participants); ► 5 Living Lab sustainability events (≥50 participants); ► 1 Living Lab sustainability event at EU level (≥40 participants); ► Final GA meeting; ► EU Level Conference (≥100 participants).

Table 10: Indicative list of Journals/Conferences/Magazines/Forums/Events/Platforms leveraged for disseminating Nemesis results

► **Journal Title:** •Global Environmental Change-Human & Policy Dimensions •Corporate Social Responsibility & Environmental Management •Environmental Economics & Policy •Environmental Science & Policy; ► **Conferences & trade shows:** World Congress of Soil Science •International Conference on Conservation Agriculture and Sustainable Land Use; ► **Magazines (Hard copy/online):** •Environmental Health Perspectives •Envirotec Magazine •Environmental Science & Engineering •AgFunder news • Perspectives Agricoles •Soil Erosion & Conservation; ► **Forums/Events/Platforms (F2F/online):** •UNCC Conference •engaging with local/regional/national/EU agencies •LLs Conference-establishing EU LL Club •European Mission Soil week •Mission Soil Platform.

2.2.3. Dissemination and communication activities after the end of the project

Nemesis will use diverse platforms for communication and dissemination as detailed in T7.1. EURICE will monitor the dissemination and communication activities implemented through the project as WP7 leader. The website and

other web-based communication channels (social media) will remain active beyond the project’s life (4-years) to promote the visibility and use/reuse of results and support ongoing collaborations with other initiatives and projects. Regular updates with posts and news feed on the website and open-access results will be available. The partners’ contact details will be updated to maintain engagement with key internal/external potential stakeholders.

2.2.4. Exploitation Strategy and measures

Nemesis exploitation strategy relates to the way each project partner individually, and the consortium as a whole, intends to use the project results for **scientific**, **societal**, and **economic purposes** and **policy making**. Nemesis consortium has defined a preliminary list of KERs to support the adoption and sustainability of Nemesis advancements.

Table 11: Description of the exploitation strategy (the generated outcomes from KERs will be open-access)

#	KER	Owner	Type	Exploitation Route	Partners Interested	TG (end)users
1	5 autonomous LLs	LL Ecosystems	OA	Open co-creation to co-develop environments for all actors; Develop best practices & business plans to facilitate longevity	All	All
2	Platform & components (Fig.6)	All partners	OA	Partnerships; Training; Knowledge sharing; Monitoring framework	All	All
3	MED DC, Databases & DT	UNIGE, IBEC, pilot site managers	OA	One-stop-shop; further R&I/R&D; Provision of Services; Training & Capacity Building; Monitoring Framework	LL Ecosystems	TG1,2,3,4,5,6,8
4	Synthesis App machine	IBEC, CBS, ECoE	OA	Affordable/Adaptable services; Policy-shaping; Tools for Monitoring	LL Ecosystems	TG1,2,4,6
5	5 VETs & E-learning platform	LLs, partners HSG, UNIGE, IBEC, CBS, MAGG, ICRAF, EGA	OA	Train-the-Trainer Programs, Customized Training Programs, Resource Mobilization, Technological advancements	LL Ecosystems	All
6	Cost-benefits analysis tool	INAT, HSG, EZS, Pilot site managers	OA	Consulting Services; Training & Capacity Building; Monitoring Framework	LL Ecosystems	TG1,2,3,4,6
7	Crowd-sourcing app	CBS, IBEC, LL pilot site managers	OA	Training; Citizen Science & Data Collection; Crowdfunding & Fundraising	LL Ecosystems	TG1,2,3,4,5,6,8
8	Framework LHs advancement	LL Ecosystems	OA	SOILL synergy; Capacity Building; Sustainability; Knowledge Sharing	LL Ecosystems	TG1,2,3,4,6
9	Policy recommendations	CREA, INRAE, ADR, ARI, ICRAF, AVFA, LML, UMU	OA	Policy Advocacy & Shaping, Sustainability Instrument, R&D Collaboration, Roadmaps for Supporting SLM	All	TG1,2,3,4,5,6,8
10	Factory Innovation Office	IBEC, LLs partners, ICRAF, MSN, HSG	OA	Support LLs, Long-term Sustainability, Provision of Services, Funds, Outreach	LL Ecosystems	All

To address T6 & EC2 barriers (Table 2.1), the Exploitation Leader (IBEC), with the Exploitation Committee (consortium members), will develop the Nemesis Exploitation Plan (EP) based on the preliminary business canvas (Fig.10). The KERs (Table 11) will be periodically updated to reflect project progress. To replicate and maximize the exploitation potential of the KERs, the EP will assess the replicability potential in LL regions, identifying priority areas of interest for the results and explore the market, socioeconomic and regulatory barriers and drivers, including an action plan for further R&D activities. Replicability will be assessed through methodologies applied to the KERs, the LL setup and the operating procedures. The replication potential will be assessed via 1) Readiness level of interest/acceptance of stakeholders at each region of interest and their capacities to apply and scale up the results, 2) Technological and financial capacity of each LL, 3) Size and geographic distribution of potential end users, 4) Regulatory barriers/drivers. A key aspect of the workshops will be to prioritize exploitation efforts. Based on the replicability analysis results, an EP will be prepared per LL. To develop a mutually accepted EP, 3 Workshops (M12-24-42, back-to-back with project meetings) will refine the EPs and will allow partners to communicate their interest



Fig. 10. Preliminary business canvas for Nemesis’ LLs

including an action plan for further R&D activities. Replicability will be assessed through methodologies applied to the KERs, the LL setup and the operating procedures. The replication potential will be assessed via 1) Readiness level of interest/acceptance of stakeholders at each region of interest and their capacities to apply and scale up the results, 2) Technological and financial capacity of each LL, 3) Size and geographic distribution of potential end users, 4) Regulatory barriers/drivers. A key aspect of the workshops will be to prioritize exploitation efforts. Based on the replicability analysis results, an EP will be prepared per LL. To develop a mutually accepted EP, 3 Workshops (M12-24-42, back-to-back with project meetings) will refine the EPs and will allow partners to communicate their interest

and capacities (technological and financial capacities of LLs, discuss exploitation routes, identify and address exploitation risks as well as the main barriers for the sustainable operation and scaling up of LLs). The EP will include long-term operational goals, an Action Plan, assessment of budgetary needs and financing plan and will address IPR, co-creation processes, roadmaps and business models. The EP will include measures to: 1. maximize the exploitation capacity and uptake potential of LLs results, such as capacity building and elaboration guidelines and best practices; 2. target barriers, including the elaboration of policy development strategies and developing of clear guidelines to ensure the long-term sustainability of LLs. A first EP will be prepared after the 1st workshop and updated accordingly. The EP will elaborate on the exploitation routes of each KER, partners involved, key activities and time plan, funding needs and financing strategy, and will be supported by a PESTLE analysis to incorporate a risk management plan. An exploitation committee consisting of one representative from each partner and guided by the exploitation leader (IBEC) will be responsible for the EP. A detailed market and competition analysis will be developed and included in the EP. To ensure the long-term sustainability of the LLs, VETs, DC, DT, crowdsourcing, app synthesis machine, and established hubs, Nemesis will produce co-created long-term sustainability strategies/plans (WP8).

2.2.5. Strategy for the Management of Intellectual Property

Data and knowledge used, generated and shared under Nemesis will strictly follow the IPR management strategy described below. A joint Consortium Agreement (CA) will address (a) the confidentiality of partner information, ownership of the project results, (b) legal protection of the project results, (c) commercial utilization, considering joint ownership, (d) background patents, know-how and information related to the use of knowledge owned by partners (e) sub-licenses to third parties within clearly defined limits and (f) non-EU data transfer mechanisms. The general outline of the IP rules will be as follows: ●Partners' background IP will be specified in the CA and made freely accessible to those needing it for the project's implementation. Partners may exclude specific background IP before the project starts, subject to agreement. Other partners may only withhold their agreement if they demonstrate that the implementation of the project will be significantly impaired thereby. ●Foreground IP generated within Nemesis shall remain the property of the generating Partners (Table 2.7). Jointly generated IP not possible to separate their contributions, the knowledge will be jointly owned. Unless otherwise agreed, joint owners shall be entitled to use their jointly owned results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s). Joint owners shall be entitled to exploit the jointly owned results and grant non-exclusive license to third parties (without any right to sub-license), if the other joint owners are given at least 45 days' advance notice and fair and reasonable compensation. ●Access rights to knowledge needed by a Partner for the execution of its part in Nemesis shall be granted to the Partner on a royalty-free non-transferable basis, unless otherwise agreed. ●A Partner will not publish confidential knowledge from another Partner, without the other Partner's prior written approval. However, if open-source software licenses apply, the open-source software license rules will apply for publishing knowledge. Relative contributions of individual partners will be identified so that transparent discussions on appropriate (joint) IP protection and exploitation strategies can be initiated. #§COM-DIS-VIS-CDV§#

2.3. Summary

Specific Needs: ●Real-life user-oriented environments for co-creation of innovative/flexible/affordable/adaptable solutions for combating desertification & reversing land degradation; ●Support Soil Mission & [SML](#); ●Support existing policies & assist in establishing cohesive policies for soil health at local/national/EU level; ●Raise awareness for soil health & desertification; ●Attract soil investors & fundings; ●Address local needs with regard to soil health in CY/ES/FR/IT/NA & other MED countries affected by desertification; ●Achieve collaboration between stakeholders across sectors; ●Engaging citizens, especially the younger generation, in understanding & valuing soil services.

Expected Results: LL governance & business models; Open access & Ethic guidelines; MAA & MAPs; Long-term strategies & KOs based on storylines simulation; Nemesis platform; MED DC/Living Earth; DT; Crowd-sourcing app; Synthesis App Machine for Data consumption; Co-solutions Database; Data Harmonization; LLs Baselines & Starting Points; Cost-benefit framework; ESG Monitoring; Policy benchmarking/Recommendations; Policy Tanks, Hub, & Bootcamps; Social Innovation Roadmaps; Awareness activities/Socio-ecological Experiments; Social Labs/Knowledge exchange between LLs; VETs; E-learning platform; LH-RF/Self-Assessment; Dissemination/Outreach/Exploitation plans; Synergies; 3 OCs; Capacity Building; Sustainability plans; Factory Innovation Office.

D & E & C measures: through web presence, social media, & direct communication to all stakeholder groups of interest; through communication activities of the LLs, Policy Hub, Social & Policy Tanks, & Entrepreneurship Hub, incl. services, events, information days, workshops, policy briefings, practice abstracts, & other means, action plan for further R&D activities, maximize the exploitation capacity & uptake potential of LLs.

Target Groups: ●TG1: Academia; ●TG2: Private Sector & Industry; ●TG3: Governance bodies & Policymakers; ●TG4: Land Managers; ●TG5: Citizens & Local Communities; ●TG6 Research Projects addressing sustainable LLs, soil health & desertification; ●TG7: Civil Society; ●TG8: Media; ■LL-Oriented TGs.

Outcomes: ●Strengthened capacities for participatory/interdisciplinary R&I, fostering collaboration on soil health across sectors within Europe; ●Improved soil health in rural areas through LLs & supported by a monitoring framework; ●Increased accessibility of practical tools for land managers, promoting soil health solutions & ecosystem services; ●Enhanced policy maker awareness of local soil health needs, leading to better policy design.

Impacts:

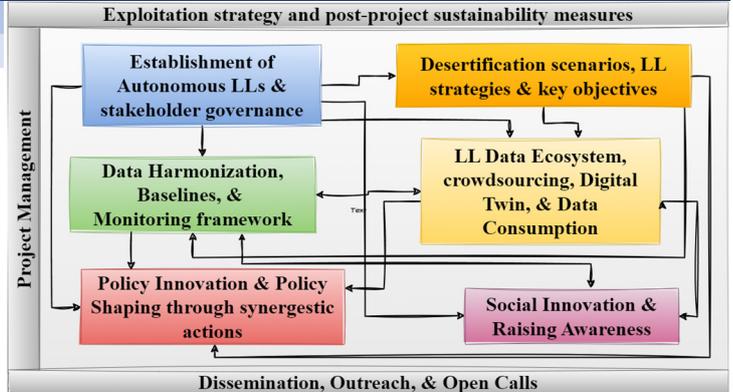
- Expanded knowledge on soils & processes accessible to stakeholders, informing science, practices, & policies to reduce soil pressures;
- Increased collaboration among TGs, especially through LLs, to address soil health across sectors;
- Locally adapted solutions implemented to tackle soil pressures, supporting the Soil Mission;
- Greater soil literacy, awareness, & societal engagement;
- Sustainable Soil-Water-Crop-Biodiversity-Pasture-Management methods applied, contributing to healthy oceans/water/climate adaptation;
- Support for EU & international commitments like land degradation neutrality, food security, & biodiversity;
- Contribution to [SML](#) through monitoring, education, citizen engagement, & sustainable soil practices. #§IMP-ACT-IA§# #§COM-DIS-VIS-CDV§#

3. Quality and efficiency of the implementation #@QUA-LIT-QL@# #@WRK-PLA-WP@#

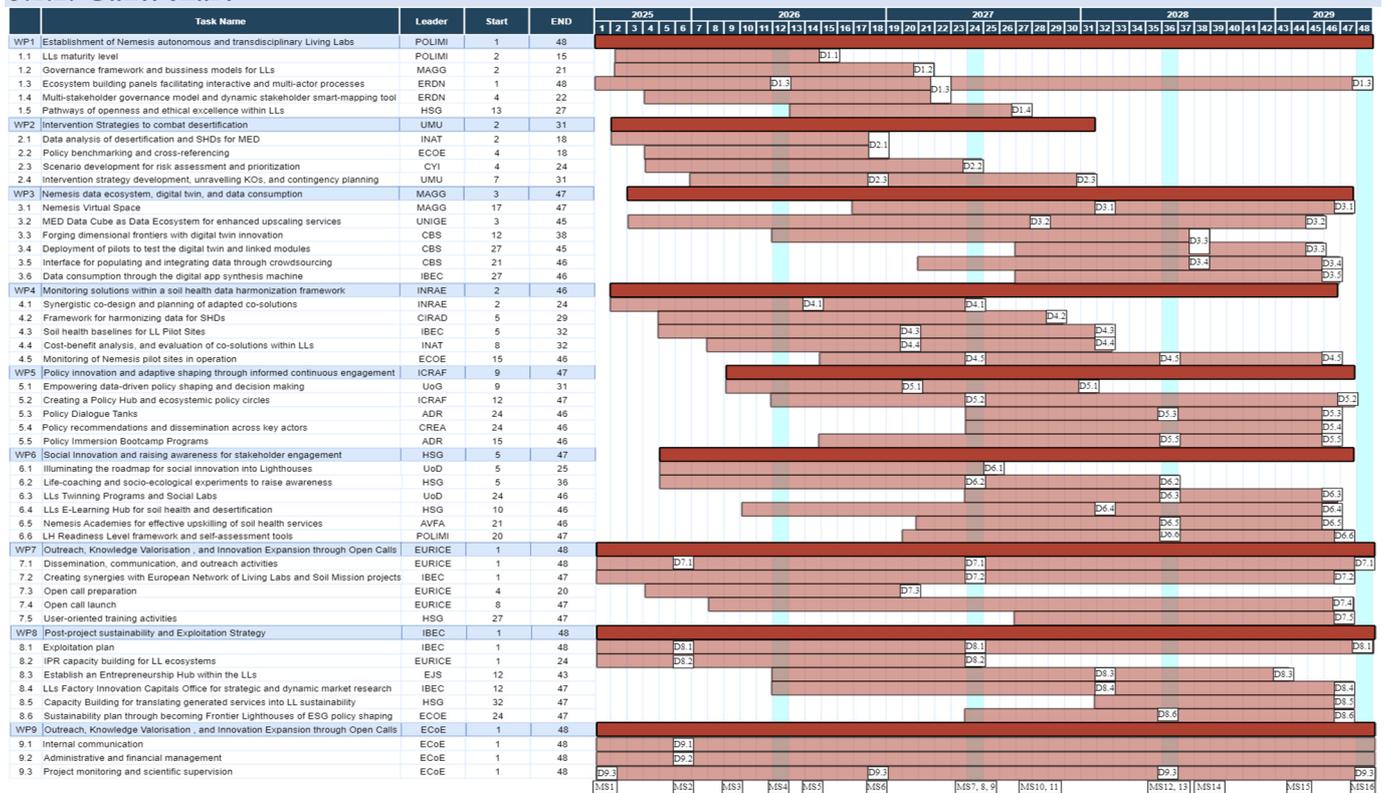
3.1. Work plan and resources

3.1.1. Overall structure of the work plan

► **WP1:** Assess LL scientific, technological, and societal maturity level; develop a MAA strategy; formulate governance, business, open access, and ethical guidelines for LLs; ► **WP2:** Develop desertification scenarios in the MED for use in strategies, contingency plans, and setting LLs key objectives; ► **WP3:** Co-design, co-develop, validate, and exploit the LLs' Data Ecosystem and DT, crowdsource data, and enhance the data exploitation; ► **WP4:** Solutions database/ranking, guide data/metadatabase harmonization, establish soil health baselines, cost-benefit analysis tools, and create a monitoring framework for pilot sites; ► **WP5:** Produce policy recommendations through Policy Tanks, establish the Policy Hub for policy pipelines, educate stakeholders in policy shaping; ► **WP6:** Advance pilot sites into LHs, co-create an e-learning platform and VET programs, adaptability frameworks, and self-assessment tools for LLs; ► **WP7:** Implement effective dissemination and communication strategies targeting key stakeholders to foster value co-creation, open innovation, and synergies with other LLs, projects, and programs, manage Open Calls; ► **WP8:** Develop exploitation strategy and build capacity for IPR and revenue generation for LLs, establish the Factory Innovation Office and financial instruments for long-term LL sustainability; ► **WP9:** project coordination/technical management activities, including data management, security, ethics issues.



3.1.2. Gantt chart



3.1.3. Detailed work description

WP	Work Package Title	Lead	PMs	Start (M)	End (M)
1	Establishment of Nemesis autonomous and transdisciplinary LLs	POLIMI	207.1	1	48
2	Intervention strategies to combat desertification and reversing land degradation	UMU	110.3	2	31
3	Nemesis data ecosystem, digital twin, and data consumption	MAGG	280.5	3	47
4	Monitoring co-solutions within a soil health data harmonization framework	INRAE	537.1	2	46
5	Policy innovation and adaptive shaping through informed continuous engagement	ICRAF	187.4	9	47

6	Social innovation and awareness raising for stakeholder engagement	HSG	286.1	5	47
7	Outreach, knowledge valorisation, and innovation expansion through OCs	EURICE	148.7	1	48
8	Post-project sustainability and exploitation strategy	IBEC	157.2	1	48
9	Project management	ECoE	117	1	48
Total			2031.4		

WP# 1 Establishment of Nemesis autonomous and transdisciplinary Living Labs

Objectives: To set the LLs key objectives, identify and map ALL relevant stakeholders, assess initial pilot sites maturity, governance and business models, ethical guidelines, and LL capacity building.

T1.1: LLs maturity level [**Leader:** POLIMI; **Part/nts:** Pilot site managers]: T1.1 will evaluate and determine the maturity of each LL using a framework based on the LL-RL concept. It will assess organizational structure, stakeholder engagement, innovation adoption, resource management, available open-access data, and infrastructure. It will provide: current state of pilot sites, past and ongoing activities, and SWOT analysis. Scientific, technological, and societal long-term KPIs, aligned with LL objectives/strategies (T2.4), will be established for each LL and its pilot sites, reflecting specific responsibilities, contributions (input for T1.2), and tech gaps for WP8 (OC#2).

T1.2: Governance framework and business models for LLs [**Leader:** MAGG; **Part/nts:** LL ecosystems]: An operational governance framework will be established to guide the day-to-day operations, coordination, and management of the LLs. This framework will define roles and authorities for LL ecosystems and all stakeholders, including all TGs (Section 2.1), establish Steering Committees (SCs) for each LL who will participate in [ENOLL's capacity-building program](#) and design communication strategies, and adaptive management approaches. Each LL will develop tailored short-, medium-, and long-term sustainable co-governance and co-eco-business plans, including logo/communication material/channels. A governance and business model pool will be developed to allow LLs to select suitable options and avoid a standardized approach, ensuring adaptability and co-designing methods. The MAP (T1.3) from each LL will be actively engaged in the consultation process. **Living Labs e-GovBook:** This sub-task will develop the LLs e-GovBook (integrated within platform, T3.1) to support the e-governance of individual LLs and facilitate the inter-lab communication. The platform will feature user management, communication tools, document sharing, project management, and reporting functionalities, secured with data protection measures including testing. MAGG will provide training sessions to the LLs to ensure e-GovBook proficient operation/maintenance.

T1.3: Ecosystem building panels facilitating interactive and multi-actor processes [**Leader:** ERDN; **Part/nts:** All partners]: A gender-responsive, inclusive, and multi-dimensional MAA strategic plan, along with five LL-oriented guidelines, will be developed to ensure the systematic integration of a transdisciplinary MAA co-eco-approach across all WPs, with ongoing monitoring/revisions. This includes five place-based, one national, one regional, one EU LL-tailored MAP, and one cross-sector EU MAP, which will be incorporated as R&I Hubs within the Collaborative Component of Nemesis' platform (T3.1), fostering collaboration among stakeholders' innovation ecosystems. The project will organise 10 workshops (ANNEX FSTP), five focus groups (one per LL), and continuous stakeholder consultations, promoting co-ownership. The MAA strategy will explore mobilizing established MAPs across the LLs. Place-based MAP members from each LL will engage in ≥5 semi-structured interviews and surveys (by LL ecosystems and HSG) to discuss their engagement, requirements, and the needs for gender-balanced decision-making. An ambassador within each LL will act as knowledge caravans at local/national/EU/international landscapes.

T1.4: Multi-stakeholder governance model and dynamic stakeholder dynamic-mapping tool [**Leader:** ERDN; **Part/nts:** LL ecosystems]: T1.4 will establish and analyse the efficacy of LL-oriented multi-stakeholder governance frameworks by building upon T1.3 and LL-governance models (T1.2), and advancing them to strengthen LLs' operationalization/inclusivity/transparency/accountability mechanisms. Relationship management methodology will determine each LL's users and their level of involvement, ensuring representation of all TGs. With support from the LLs' SCs (T1.2), a framework will be developed to evaluate the integration of local stakeholders in LL-tailored MAPs into LL ecosystems. DPS will create a stakeholder WebGIS dynamic-mapping tool to continuously improve engagement, fostering collaborative R&D alliances. This tool, integrated into the platform (T3.1), will feature interactive geospatial tagging and network visualization, allowing stakeholders to be continuously added and updated.

T1.5: Pathways of openness and ethical excellence within LLs [**Leader:** HSG; **Part/nts:** LL ecosystems]: T1.5 will develop a standard open access policy framework and an LL-tailored ethical framework. The open access policy, guided by the DMP in WP9 and principles of openness, transparency, and inclusivity, will promote the adoption and reproducibility of co-solutions. It will include guidelines for data sharing, metadata, IPR, and ethical practices among LLs, ensuring fairness and equal opportunities in access, participation, and resource allocation. Additionally, a tailored ethical framework, informed by the [external](#) Ethics Advisory Board, will be created to address the unique challenges, values, and potential ethical risks associated with each LL's activities and innovations.

WP# 2 Intervention strategies to combat desertification and reversing land degradation

Objectives: To assess desertification in the MED region through a structured data review and scenarios, prioritize and design tailored intervention strategies, and create contingency plans and adaptation strategies.

T2.1: Data analysis of desertification and SHDs for MED [**Leader:** INAT; **Part/nts:** CREA, IBEC, AVA, CyI, ECoE, INRAE, UNIMI]: Collected data from multiple sources will evaluate the current state of desertification and

associated land degradation in the MED. This will include climatic conditions, land productivity, vegetation cover, water availability, land use changes, and socio-economic factors, sourced from EU/ECA reports, government documents, open access databases, EO, and MAPs surveys. SHDs/sub-indicators related to desertification, defined sub-objectives, and SDG 15.3 will be included, provided by the Soil Mission, [Directive on Soil Monitoring and Resilience](#), and [UNCCD](#), along with relevant projects (e.g., [AI4SOILHEALTH](#), [BENCHMARKS](#), [TERRASAFE](#), [MONALISA](#))-through synergies/joint activities (T8.2). Identified SHDs will be linked to each LL pilot site. Correlations between existing practices and their impacts on identified SHDs will be established. Feedback for evaluating the importance of reported SHDs will be provided by LL-tailored MAPs surveys (T1.3).

T2.2: Policy benchmarking and cross-referencing [**Leader:** ECoE; **Part/nts:** ARI, CREA, AVFA, ICRAF, FCM, BNDR, ADR]: T2.2 analyses existing and planned EU and global policies related to desertification in the MED, aiming to identify gaps, inconsistencies, and areas for improvement. The data collected in T2.1 will be linked with the identified policies by cross-referencing, to align data-driven insights with the policy needs. Advocacy efforts will promote policy adjustments to integrate innovative actions within the LLs. The outcomes will form a roadmap for policy alignment with LLs' objectives (T2.4) and guidance to create tailored policies for desertification and land degradation across MED (WP5).

T2.3: Scenario development for risk assessment and prioritization [**Leader:** CyI; **Part/nts:** POLIMI, INAT, ARV, UoG, UMU]: T2.3 develops scenarios and prioritizes actions to combat desertification and soil degradation in MED. Key drivers will be identified and prioritized based on analyses from T2.1 and T2.2, adopting a bottom-up, place-based approach for the MED. These drivers will create storylines and future trend projections, providing insights into potential trajectories of land degradation and desertification for each LL. Using the MEDALUS method, baseline, optimistic, pessimistic, along with exploring an optional alternative, will be developed to simulate various outcomes based on the prioritization of key drivers. These scenario storylines will guide the prioritization of place-based actions and interventions, LL-tailored to the specific characteristics, needs, and priorities.

Task 2.4: Intervention strategy development, unravelling KOs, and contingency planning and adaptation [**Leader:** UMU; **Part/nts:** INAT, INRAE, ECoE, POLIMI, ICRAF, IBEC, ARI]: Upon T2.3, T2.4 provides intervention strategies to combat desertification in MED, address existing policy gaps (T2.2), and provide roadmaps for implementing innovative approaches within each LL. Each LL Ecosystem will establish a self-oriented strategy, while a coordinated intervention strategy will be developed for the entire LL Network. Local/regional/national/EU stakeholders, connected to key drivers identified in T2.3, will participate in 5 national open workshops (ANNEX FSTP/LL ecosystems) to co-create and consult on actions. These strategies will consider national environmental protection laws and the [SML](#). The key short- and long-term objectives for each LL and the Network will be defined, enriching the R&D alliances (T1.4). T2.4 will develop contingency plans and adaptation strategies to address potential uncertainties and changes related to desertification within each LL. Contingency plans will outline proactive measures to mitigate risks and improve preparedness and resilience. Adaptation strategies will be created to enhance LLs' adaptive capacity in response to evolving conditions, ensuring long-term viability/effectiveness.

WP# 3 **Nemesis data ecosystem, digital twin, and data consumption**

Objectives: Establishment of Nemesis Data Ecosystem for managing, storing, and analysing data, development of the virtual multi-dimensional-thematic LL and exploitation of data generated and stored

T3.1: Nemesis Virtual Space [**Leader:** MAGG; **Part/nts:** ERDN, ICRAF, UNIGE, EGA, EJS, IBEC, HSG, DPS, ARV, UoG, BNDR, PAI]: T3.1 focuses on developing the Nemesis Virtual Space, a central platform that will facilitate all project components (T1.3, 3.2-3.5, 4.3-4.5, 5.4, 6.4, 6.5) and integrate with the Nemesis dissemination web infrastructure. The platform will be built on a robust and scalable framework capable of hosting the DCs developed in T3.2 and the tools from T3.3-3.6, ensuring effective use of collected information while complying with DMP guidelines (T9.3). The platform will be secure, accessible, and user-friendly, ensuring that all stakeholders will be able to access project data and resources. Data handling and access control protocols will be implemented to maintain data integrity. The platform will also feature exchange with other systems, promoting interoperability and data sharing. Beyond data management, the Nemesis Virtual Space will provide stakeholders with an interactive environment for knowledge exchange, sharing, and cooperation, enhancing collaboration across the LLs.

T3.2: MED Data Cube as Data Ecosystem for enhanced upscaling services [**Leader:** UNIGE; **Part/nts:** ECoE, POLIMI, IBEC, UMU, DPS, ODINS, ARV, EZS, PAI]: T3.2 designs a structured FAIR Data Ecosystem as a centralized Data Hub for collecting/storing/managing data from LLs and across MED. The MED DC will be equipped with specialized LLs-tailored functionalities, designed through a co-creation approach to meet project (T4.2-4.5) and stakeholder needs (ANNEX FSTP). Key steps include: ► Establish close cooperation with MAPs and conduct an open webinar to gather high-level user requirements (with T4.2), informing the technical specifications; ► Architecture design to ensure scalability, flexibility, interoperability, and integration of diverse data sources, with considerations for data governance and security (T1.5 and T9.3); ► Data entry points to provide fast, entry points for sensor data, less dynamic data, and satellite data within each LL and MED; and ► Develop EO data pre-processing pipelines to create ARD for the DC. The Data Ecosystem will incorporate a microservice architecture covering: ● Authentication and authorization; ● Monitoring; ● Data access methods (e.g., RESTful APIs); ● API gateway; ● Databases

and DC technologies; ●Data storage and logging, and ●Interactive API documentation. A central repository will house geospatial data, enabling data transformation, cleaning, enrichment, and governance. Metadata for each dataset/product will be documented (YAML) and discoverable via catalog. The Data Ecosystem will be accessible through a GUI integrated into Nemesis platform (T3.1), featuring customizable dashboards and a Data Dictionary (for search). **Transforming Data Cube into MED Living Earth for Upscaling Services:** This sub-task will employ the Living Earth framework to consistently capture and compare the state and dynamics of soil health and LULC changes. Utilizing the Global Change taxonomy based on [FAO's LCCS classification](#), T3.2 will enable monitoring of landscape changes in historically, near-real-time, and into the future (long-term), integrating essential geospatial data for upscaling services. Key elements: ■Nemesis Living Earth Development: A standardized, globally applicable framework for LULC classification to support service upscaling, policy design, and actionable insights and ■Semantic Challenges Resolution: Addressing semantic challenges within LCCS for consistent EO implementation, incl. modifications to incorporate environmental indicators/SHDs, and flexibility when data availability is limited.

T3.3: Forging dimensional frontiers with digital twin innovation [Leader: CBS; Part/nts: UMU, POLIMI, IBEC, ECoE, ARV, INAT]: T3.3 creates the LLs virtual representation, with data stored in the DC and derived by the crowd-sourcing app and OC#2 technologies. The DT will provide an interactive platform to simulate, analyse, and optimize resource management, as well as demonstrate co-solutions. During the Design phase: ●Define the technology to integrate physical assets into the DT, ensure data flow from the Data Ecosystem via API, and identify modelling software needs; ●Specify lifecycle information, storage, access, and usage. The DT will: ■Enable asset monitoring, control, and predictive analytics; ■Perform simulations to improve operations and demonstrate co-solutions at pilot sites. During the Augmentation phase, the DT will start with small tasks, such as monitoring a single asset's performance, and will gradually expand. Modules on Soil-Water-Crop-Biodiversity-Pasture-Management from various partners will be integrated. Technologies from the OC#2 will be exploited to support the demonstration asset. Regular feedback loops and user testing sessions will be conducted to ensure that the DT meets all requirements.

T3.4: Deployment of pilots to test the digital twin and linked modules [Leader: CBS; Part/nts: IBEC, Pilot site managers]: T3.4 aims to deploy pilots as real-world test cases to evaluate the functionality and effectiveness of the DT and its linked modules. These pilots, conducted at selected sites across various LLs with diverse land uses (Section 1.2.3 and from OC#1), will validate the virtual representations and assess the DT's capabilities. Key activities include: ●Deploy pilots across diverse LLs to test the DT in real-world scenarios; ●Engage MAPs through webinars (ANNEX FSTP), allowing them to explore DT functionalities, assess its performance, and provide usability feedback; ●Use insights from pilot tests to enhance and optimize the DT and ●Develop and incorporate training materials into the e-learning platform (T6.4) based on pilot experiences, guiding future iterations and developments.

T3.5: Interface for populating and integrating data through crowdsourcing [Leader: CBS; Part/nts: IBEC, CIRAD, UoD, Pilot site managers]: T3.5 will create a debate portal to facilitate discussions on localized issues related to soil health, desertification, and open and affordable innovation across the MED. The portal will enable stakeholders to engage in discussions within the LLs, encouraging crowdsourcing data. Gamification techniques will be incorporated to familiarize users with soil health concepts. The portal will feature a web app that translates LL outcomes into tangible results, incorporating e-learning elements from WP7. This app will allow citizens in LLs countries to share SHDs data from their fields. T3.5 will include training activities by IBEC and CIRAD, focusing on the acquired infrastructure within LLs (IBEC and CIRAD-Biofunctool toolboxes, automated ground scanners). All data shared through the portal and mobile app will undergo quality control and be securely stored in the DC.

T3.6: Data consumption through the digital app synthesis machine [Leader: IBEC; Part/nts: CBS, ECoE, UNIGE, PAI]: T3.6 develops bootstrapping software for LLs' (end)users for creating cyber-physical applications as services. The produced templates will consist of user-oriented modules (decision-making/policy-shaping), offering visualizations and connectivity to MED DC stored ARD and DT. With domain-specific languages, IT providers and non-technical actors will be able to easily input data from DC to develop tools under open innovation principles. The visual components and necessary DC connections will be generated automatically. The goal is to establish a semi-automatic structured process enabling developers to create and validate advanced tools and services in pilot sites with reduced complexity. Training materials & hands-on online activities will be added to the e-learning platform.

WP# 4 Monitoring co-solutions within a soil health data harmonization framework

Objectives: Harmonization frameworks for data collection and monitoring the activities of the LLs.

T4.1: Synergistic co-design and planning of adapted co-solutions [Leader: INRAE; Part/nts: LL ecosystems]: A draft database with LL-oriented validated solutions will be created. Five LL-tailored workshops (ANNEX FSTP) involving MAPs, and the public will be held to confirm environmental and socio-economic priorities and refine the database according to local/regional needs. LL ecosystems will use this database to rank co-solutions and adapt them to local context. An implementation plan will be drafted (for T4.5), exploring combined co-solutions to reduce rebound effects. Building upon T2.4, the co-solutions plan for short, medium, and long-term implementation in LLs will be finalized in five open workshops with stakeholders and MAPs, facilitated by KPIs (for T4.5) to efficiently monitor and assess pilot sites, ensuring alignment with end-users' needs and readiness for advancement into LHs.

T4.2 Framework for harmonizing data for SHDs [Leader: CIRAD; Part/nts: ICRAF, CyI, IBEC, POLIMI, ECoE,

UMU, INAT, UNIGE]: T4.2 will identify and prioritize data needs for pilot sites to support EU and LLs' strategies defined in T2.1-2.4, in collaboration with MAPs (T1.3) and stakeholders, [Cluster 6, EU Missions](#), and soil health projects like [JPSOIL projects](#), [WORLDSOILS](#) by [ESA](#), and [AKIS platforms](#). It will include data required for LL environmental monitoring (T4.5, ANNEX FSTP). A framework will be developed to harmonize SHDs-related data and metadata across LLs, incorporating outcomes from [SoilWise](#), [BENCHMARKS](#), and [AI4SoilHealth](#), among others. The harmonization process will involve transforming, mapping, and aligning data from various sources to adhere to the established format and metadata specifications. The framework will ensure that data/metadata collected from various sources and included in the Monitoring Reports (T4.5) are transformed into sustainable data with compatible formats and aligned with harmonized descriptors for soil health assessment, following the [ESDAC](#) and the [EUSO](#). The framework will support [GLOSOB](#) and the EU Soil Monitoring framework, enhancing data interoperability across LLs and considering the future [Farm Sustainability Data Network](#) requirements for agricultural pilot sites.

T4.3: Soil health baselines for LL Pilot Sites [Leader: IBEC; Part/nts: Pilot site managers]: Having incorporated the additional pilot sites from the OC#1 (WP8) and prior to co-solutions implementation, soil sampling will be conducted in a hierarchical field survey protocol based on [LUCAS 2009/2012](#) to assess key parameters with respect to the identified SHDs (T2.1). Sampling will be depth-specific for top- and sub-soils, with the number of samples varying by site. Samples will be analysed using NIR soil spectroscopy per [IEEE guidelines](#), creating a soil spectral library for Nemesis LLs, and excess samples will be preserved for future research. EO data and AI will be employed to produce detailed SHDs layers across the pilot sites. All outcomes will be incorporated into the DC (T3.2) as baselines, and individual reports for each site will be accommodated in Nemesis platform. Sampling protocols and training materials will be prepared (webinar, introduction to soil sampling, ANNEX FSTP). T4.3 will explore leveraging ongoing or future programs (e.g., [Soil Bon](#)) for further soil health data acquisition at each site.

T4.4: Cost-benefit analysis, and evaluation of co-solutions within LLs [Leader: INAT; Part/nts: HSG, EZS, Pilot site managers]: T4.4 will establish a framework (for MED primarily, but adaptable for other regions) for the socio-economic and econometric evaluation of the LL-derived co-solutions (T4.1), enabling cost-benefit analysis by linking SHDs from T2.1 and data from pilot sites with socio-economic variables for decision-makers. MAPs engagement through surveys, F2F meetings (ANNEX FSTP), scenario analyses, and ecosystem service models/economic methodologies will facilitate the LL-oriented Net Present Value calculation for alternative solutions (market trends and socio-economic impacts of SHDs in MED and beyond). Pre-existing economic models at micro and macro levels and policy perspectives (T5.1) will be reviewed. Existing data on market and socio-economic analysis will be evaluated, and synergies with projects like [InBestSoil](#), [NOVASOIL](#), and [NBSOIL](#) will be explored (T7.2).

T4.5: Monitoring of Nemesis pilot sites in operation [Leader: ECoE; Part/nts: LL ecosystems, IBEC, HSG, MAGG, IBEC, UNIGE]: Upon initiating implementation of selected co-solutions (T4.1), a data collection and metrics framework will monitor progress, outcomes, and KPIs (T1.1) for LLs' pilot sites, including those from OC#1 (WP8), during and beyond the project. The framework will outline data sources and methods, including DC and Living Earth, local reports, surveys (collaborating with SSH), and both qualitative and quantitative observation data. This data will determine pilot sites' performance and user experience (environmental/socio-economic impacts, stakeholders' engagement and knowledge-sharing). Key environmental metrics, including impacts on ecosystem services and SHDs (incl. T2.1, T4.3, and assessments utilizing IBEC/CIRAD/existing infrastructure and OC#2), will be defined. An impact evaluation methodology will compare results to baselines (T4.3, if applicable) and against initial goals, objectives, KPIs (incl. "practice abstracts"), and trend analysis (T1.1), with progress reports prepared for the SCs and stakeholders (incl. citizens). A feedback mechanism will be developed to continually enhance LL performance, with insights from T6.6 and external experts (e.g., [SOILL](#), [SoilWise](#) - T7.2). Monitoring of pilot sites will utilize outcomes from WP1 (MAP and stakeholder engagement), T2.1, T4.2-4.4 (socioeconomic-environmental impact), and T5.4 (policy recommendations), and T6.6 (criteria for LH-RL), with reports hosted into the Nemesis' platform (T3.1). Initial reports will be submitted (M47) for future assessments, with monitoring intervals post-project determined in T6.6. T4.5 will provide feedback to T3.2/T4.2 on additional data needed for monitoring reports.

WP# 5 Policy innovation and adaptive shaping through informed continuous engagement

Objectives: Roadmap for supporting/designing EU/national/local policies, develop policy briefs, organize policy tanks, establish a Policy Hub for dissemination and policy transformation, and facilitate policy-shaping education.

T5.1 Empowering data-driven policy shaping and decision making [Leader: UoG; Part/nts: ECoE, CBS, UMU]: T5.1 will ensure the effective cross-referencing and utilization of LL data stored in the Nemesis Data Ecosystem, linking outcomes from WP2-WP4 to informed policy shaping. It will aggregate and cross-reference data from WP4 with insights and benchmarking outcomes extrapolated from existing national/local policies and both existing and prospective EU-level policies and mechanisms across policy domains as delineated in WP2. Policy-based targets aligned with key objectives (T2.4) will be set for each LL to ensure that the post-2027 policy framework, including developments under the [EU Green Deal](#) and the [Directive on Soil Monitoring and Resilience](#) among others (Section 1.2.2), is informed by LLs findings. This integrated data will support the Policy Tanks operation (T5.3) and Policy Recommendations (T5.4), with results accessible through Nemesis platform (T3.1) and managed by each LL SC.

T5.2 Creating a Policy Hub and ecosystemic policy circles [Leader: ICRAF; Part/nts: ERDN, ECoE, ARI, CREA,

ICRAF, AVFA, LML, BNDR, ERSAF, AVA]: A transdisciplinary Policy Hub will be established as a centralized force for disseminating LLs' data-driven policy insights, initially involving LL committees, project partners, and MAPs. Collaboration and knowledge exchange with the EU policy landscape (e.g., [JRC Units](#), [EIB](#)) will be fostered effectively showcasing the financial instruments in aligning with mission objectives and scaling up achieved results. Through networking and event participation (ANNEX-FSTP), the Hub will be embedded within the local/MED/global policy arena, contributing to the [SML/Mission's objectives](#) and facilitating discussions under various international conferences/roundtables/forums for supporting policy-oriented sustainability plans (T8.6). The "Dynamic Policy Sandbox" will be integrated into the Nemesis platform (T3.1) to support the interaction of the Policy Hub. T5.2 will establish ecosystemic policy circles as ongoing collaborative groups, gathering stakeholders from various sectors/disciplines to discuss/monitor/adapt policies and support the formation of Policy Dialogue Tanks (T5.3).

T5.3 Policy Dialogue Tanks [Leader: ADR; Part/nts: ARI, CREA, ICRAF, AVFA, LML, ERSAF, BNDR, ERDN, AGF, ECoE, FCM]: Building upon T5.2, T5.3 will establish Policy Dialogue Tanks to foster transparent and trustful policy innovation dialogues rooted in adaptive co-creation, thus, supporting evidence-based policy shaping. Leveraging outputs from T2.1-2.4 and 5.1, the Tanks will follow the [Co-creation for Policy Methodology by the JRC](#). Five local/national and one EU-level Policy Tanks will be organized (ANNEX FSTP), involving a diverse and representative sample of the stakeholders' ecosystem from T1.3 & 5.2. The Tanks will address specific policy challenges identified in WP2, roadmaps for adapting Nemesis LL network policy recommendations (T5.4) to each LL context, and supporting their uptake. Each Tank will target ≥ 25 participants from ≥ 10 Member States and NA (for EU Tank), with a particular focus on the consortium countries. A virtual co-creation workshop will follow (M40), formulating policy pathways (i.e., identified soil challenges) for integration into the 5 LLs' strategic action plans.

T5.4 Policy recommendations and dissemination [Leader: CREA; Part/nts: INRAE, ADR, ARI, CREA, ICRAF, AVFA, LML, UMU]: Upon T2.4 & T5.1-T5.3, T5.4 develops LL-tailored policy briefs (with feedback from Policy Tanks-T5.3), focusing on concise, actionable recommendations derived from scenarios, strategies, and LLs' KOs. These briefs, covering mid- and long-term recommendations, will be included on the Nemesis platform (policy component in T3.1) and disseminated among EU stakeholders and MAPs via webinars, workshops (ANNEX FSTP), Policy Hub (T5.2), and media channels. LL-tailored policy-based KPIs will be set to establish their role in soil health policy shaping. LLs will also summarize new knowledge for policymakers on monitoring SHDs in "Good Practices," utilizing outcomes from T4.3-4.5 and aligned with [EU CAP Network format](#) to bridge *research & practice*. Templates for policy frameworks will be designed, with these components: (i) guided inputs, (ii) policy elements, (iii) legal/regulatory compliance, (iv) measurements/evaluation, (v) communication plan, and (vi) adaptability.

T5.5: Policy Immersion Bootcamp Programs [Leader: ADR; Part/nts: LL ecosystems]: T5.5 will establish five "Policy Bootcamp" Programs across the LLs to cultivate innovation and policy education, especially targeting young stakeholders. Training material and activities for two Sessions (1 day each) in each Program will be prepared, which will be regularly updated by LLs (1st run of programs M46, ≥ 25 participants per LL, repeated every 2 years after M46): **Policy Education:** focused on policy development, analysis, and monitoring, equipping participants with the knowledge/ skills needed to effect change; **Innovation in Legislation:** Encouraging stakeholders to bring fresh, innovative ideas to the legislative process, supporting in transforming these ideas into viable policy proposals on local/national/EU domain and fostering a culture of inclusivity and visionary thinking in policy shaping. Students and young scientists will be encouraged to participate, ensuring their voices influence future policies. Participants will also have the opportunity to present and discuss their ideas with policymakers during the Policy Tanks (T5.3).

WP# 6 Social Innovation and awareness raising for stakeholder engagement

Objectives: Enhance stakeholder capacity and skills, foster innovation and collaboration within the LHs and support and develop a robust evaluation framework to guide the advancement of pilot sites into LHs.

T6.1: Illuminating the roadmap for social innovation into Lighthouses [Leader: UoD; Part/nts: LL Ecosystems, HSG]: T6.1 will design LL-tailored roadmaps for social innovation to elevate them to LH status. It will also assess their current social innovation status, identifying success factors, gaps, and challenges. Starting points for each LL (considering pilot sites status) will be defined, incorporating insights from T1.1 and 2.4. In collaboration with HSG, short- and long-term KPIs (e.g., stakeholder engagement, outreach) will be developed in cooperation with each LL and established MAPs through catalyst insight and stakeholder visionary surveys (T1.3-1.4). The roadmaps will focus on impact, scalability, and gender-responsive inclusivity, guiding LLs toward embodying LH principles. TGs and MAPs engagement (via webinar/open discussion-ANNEX FSTP) will be integral to each LL roadmap.

T6.2: Life-coaching and socio-ecological experiments to raise awareness [Leader: HSG; Part/nts: ERDN, ICRAF, EGA, UoD, LL Ecosystems]: T6.2 will conduct life-coaching programs and socio-ecological experiments to transform LL knowledge into social advancement strategies and stakeholder engagement. In collaboration with LLs' ambassadors (T1.3), activities like (≥ 2 each LL) 'Cafés des Sciences', Social Synergy Tanks, and webinars (ANNEX FSTP) will be organized across LLs to raise awareness and adoption of co-solutions. Pilot sites' unique outcomes will be highlighted, and "social" messages for desertification and local soil health challenges will be communicated to a broader audience (Section 2.2). School-as-a-living-lab activities (incl. school visits) will raise awareness and lay the foundation for future soil experts. Tailored social-ecological experiments and quizzes will shift stakeholder

perceptions and promote knowledge about soil health. Experiments to LL pilot sites will involve online participant recruitment and engagement (T1.3), with HSG and selected pilot managers overseeing implementation.

T6.3: LLs Twinning Programs integrating Social Labs [**Leader:** UoD; **Part/nts:** LL Ecosystems, HSG, MSN]: T6.3 establishes a framework for Twinning Programs to facilitate knowledge exchange and collaboration among the LLs. T6.3 will pair LL experts/communities with similar objectives to promote mutual learning, support, and partnerships. Virtual Think Tanks will enable LL scientific experts to share knowledge and insights across LLs. Integrated Social Labs will organize cross-sectoral bridge actions, including networking workshops/F2F meetings (ANNEX FSTP), to enhance cooperation within and between LLs. Using the social innovation spiral approach, Social Labs will identify joint activities and synergies, fostering transdisciplinary collaboration and upscaling co-eco-creation. This will build a network of partnerships, supporting short- and long-term collaboration and knowledge exchange. Social Labs will be integrated into the Collaborative Component of Nemesis platform (T3.1). International LL experts (≥ 2 virtual workshops) will share insights and challenges they encountered in establishing exemplary and mature LLs.

T6.4: LLs E-Learning Hub for soil health and desertification [**Leader:** HSG; **Part/nts:** MAGG, UNIGE, IBEC, POLIMI, CUT, EGA, UMU, ERDN, CBS, AVA, UoG, INAT, INRAE]: T6.4 develops an interactive, user-friendly e-Learning platform to promote knowledge exchange and support the MED resilience against desertification and targeted soil health challenges. The platform will offer open-access training material (based on previous WP outcomes, by HSG & responsible partners) to serve as knowledge dissemination hub, in three key areas: (i) LL-oriented activities, business development, and socio-economic elements, (ii) policy shaping for soil health and desertification mitigation, and (iii) translating LL scientific outcomes into knowledge sharing. Material will be available in English and translated into LLs' official languages, with interactive tools for self-paced learning and innovation. Synergies with similar projects (e.g., [NBSOIL](#), [PREPSOIL](#), [SOILL](#)) will be explored. The platform will include material for pupils and students, supporting Schools' LL activities ([SALL](#)) and integrating content from E-Teacher Academies.

T6.5: Nemesis Academies for effective upskilling of soil health services [**Leader:** AVFA; **Part/nts:** HSG, EGA, ASAJA, UMU, CUT, INRAE, CIRAD, INAT, UoG, ECoE, POLIMI, UNIMI, EJS]: To establish Nemesis VETs in each LL-hosting country as hubs for knowledge transfer and skills cultivation, a multi-step process will be followed with T6.5. Steps include: a) Reviewing current vocational training needs and demand at EQF levels 3-5 within MED, considering LLs' KO (T2.4) and existing offers; b) Defining Nemesis VETs' focus areas and industries; c) Developing governance/business models in alignment with T1.2; d) Identifying organizations to host Nemesis VET courses and provide infrastructure; e) Creating a detailed competence-based curriculum for each program, including learning objectives, course content, and teaching/assessments methodologies (in collaboration with partners); f) Identifying staff recruitment profiles and outline potential staff mobilities across VETs; g) Designing a marketing strategy to promote VETs; h) Supporting partnerships with local industries and authorities. T6.4 e-learning space will serve as the VETs' core element. Five national events will be organized to promote VETs (ANNEX FSTP), exploring the potential of joining the [EVTA](#) and establishing ERASMUS+ collaborations (e.g., [CoVES](#), [Teacher Academies](#)).

T6.6: LH Readiness Level frameworks and self-assessment tools [**Leader:** POLIMI; **Part/nts:** LL Ecosystems, IBEC, HSG]: T6.6 will develop LL-tailored evaluation frameworks to guide and assess the transition of pilot sites into LHs, co-creating action plans and utilizing monitoring reports from T4.5. Considering the [PREPSOIL](#), [SMS](#), and [SOILL](#) ([SOILL Startup](#)) outcomes and criteria for advancing into LHs, this LH Readiness Level Frameworks will guide the progress and show the impact of the pilot sites. T6.6 will work on the frameworks in collaboration with LL ecosystems who will perform the self-evaluation; a workshop organized (M36) with all the LL ecosystems will draft the action plans and future visions. Joint open activities will be co-organized (T7.2). The evaluation frameworks will include: the multidimensional aspects of desertification; ESG dimensions and the monitored impacts (T4.5) across the pilots; criteria for advancing pilot sites into LHs, emphasizing networking/knowledge exchange/demonstration components (physical/leveraging DT). Action plans will provide a structured roadmap for the transformation and maintaining process, outlining steps, strategies, and milestones. These will be co-created with LL stakeholders (T1.4). T6.6 will also develop a holistic self-assessment framework, providing feedback to update the monitoring framework in T4.5 to ensure all necessary metrics are incorporated.

WP# 7 Outreach, Knowledge Valorisation, and Innovation Expansion through Open Calls

Objectives: Dissemination and communication activities to facilitate collaboration and knowledge sharing among platforms, establish strategic synergies strategies, and designing/launching the OCs.

T7.1: Dissemination, communication, and outreach activities [**Leader:** EURICE; **Part/nts:** All partners]: T7.1 will create and implement a dissemination, communication, and monitoring plan to engage stakeholders and promote Nemesis community to all TGs (Section 2.2). A dedicated website and social media channels (LinkedIn, X, YouTube) will showcase the project's aims, activities, and results, with campaigns tied to key awareness days (e.g., World Soil Day, European Mission Soil Week, OpenLivingLab Days). A publication strategy will guide the dissemination of scientific results. The Communication Committee (CC), led by EURICE, will ensure quality control and support national outreach. A communication toolkit with templates and tailored materials (e.g., leaflets, infographics) will aid partners. Key design elements will ensure a consistent visual appearance of Nemesis across all activities. Press and news releases will be shared via EU/international platforms (e.g., Eurekalert, EU CAP Network),

and audiovisual materials, including animated clips/short interview/event clips, produced by EURICE. The dissemination plan (D7.1, M6) will outline key messages, channels, communication activities, and KPIs (Section 2.2.2). Findings will be shared through stakeholder events, scientific forums, workshops and symposia, trade shows, and EU platforms like Horizon Results Platform, Mission Soil Platform. and other engaging formats (e.g. HRP TV, CORDIScovery podcast). Local/regional platforms/media will be exploited and covered by the LL Ecosystems.

T7.2: Creating synergies with European Network of Living Labs and Soil Mission projects [**Leader:** IBEC; **Part/nts:** All partners]: T7.2 fosters collaboration and cooperation with [ENOLL](#) and other relevant programmes and projects funded under the same/similar calls (Section 1.2.4). To formulate a plan for joint activities, one-to-one strategic planning meetings and joint workshops will be organized with [ENOLL](#), [UNCCD](#), and consortia from ongoing and future funded relevant projects (e.g., [Soil Mission LLs](#) and Calls for Desertification and relevant to Nemesis, [EJP Soil](#), [EU CAP Network](#), other missions). F2F/online/hybrid meetings will facilitate effective communication/collaboration, leading to a plan for joint dissemination/communication activities/policy seminars. T7.2 will ensure the integration of the Nemesis LLs network into the Soil health LL&LH network (activity 2.2 in Soil Mission).

T7.3: Open call preparation [**Leader:** EURICE; **Part/nts:** POLIMI, ECoE, INRAE, INAT, UMU]: T7.3 will define, publish and coordinate 3 Open Calls (OCs), guided by the outcomes of T1.1 and feedback from LLs, MAPs, and stakeholders. EURICE will coordinate OC activities and dissemination, while partners from LL Ecosystems will assist in defining the call's objectives, KPIs, and evaluation criteria. The funding schemes and implementation will align with the Horizon Europe (HE) legal framework to ensure transparency and accountability. Contracts will clarify legal obligations in line with HE guidelines, including obligations towards the EC, European Anti-Fraud Office, and Court of Auditors to exercise their powers of control on documents, information, electronically stored or at the recipient's premises. Guidelines, terms and conditions documents, proposal templates, and announcements/requirements for evaluators (incl. no. proposals/evaluator) will be prepared, among others. More details in the FSTP annex.

T7.4: Open call launch [**Leader:** EURICE; **Part/nts:** LL Ecosystems, IBEC, MAGG, CBS, UNIGE, ERDN, EGA]: OCs will be published on the Nemesis website, the EU funding and tender's portal, the Mission Soil Platform and website, and Nemesis social networks. EURICE will manage the OCs and provide support through different channels (webinars [2 per OC], guiding documents and email). Promotional campaigns will support all OCs through dissemination activities. Both the 1st and 3rd OCs will be launched by M9 (5-8 to be funded) and M21 (10-15 to be funded), respectively; The 2nd OC will be launched by M16. All OCs will have a 2-month application window. The 2nd OC will feature two evaluation points (M18 and M24): the 1st will select the 12 most promising technologies, allowing 6 months for refinement based on LLs' needs, and the 2nd to select the best 3-6 technologies for FSTP. The remaining technologies will have the opportunity to stay connected to the project, with potential future integration into LLs. T7.4 will contract external evaluators, ensuring each application is reviewed by 1 internal and 2 external evaluators (FSTP Annex details). This task will monitor and analyse the OC results, impacts, and KPI compliance, involving phases such as (i) data compilation - pre-proposals, submissions and incidences during the OCs/execution of the projects statistics; (ii) data processing, analysis/visualization of relevant statistics: applicant types, % of successful companies, types of non-eligibility, etc.; (iii) data usage for improvement – reinforcing OCs participation.

T7.5: User-oriented training activities [**Leader:** HSG; **Part/nts:** MAGG, UNIGE, CBS, IBEC, ECoE, INAT, DPS, POLIMI, ARI, UMU, AGF, AVFA]: HSG with key consortium partners, will co-design and implement LL-tailored training activities to foster knowledge sharing and skill acquisition for LLs operation and upscaling of services. Training activities will be conducted in English, utilizing the e-learning materials (T6.4). The programs will also target identified stakeholders from the determined TGs (Section 2), providing user-oriented capacity building through webinars and hands-on training (ANNEX FSTP). Feedback will be established, allowing participants to provide input on the content and delivery of the training to inform effective learning and teaching. VETs (T6.5) and the E-learning platform (T6.4) will further use this feedback to ensure continuous harmonized improvement.

WP# 8

Post-project sustainability and Exploitation Strategy

Objectives: Exploitation plan, capacity building for the post-project sustainability and management of IPR, LL-tailored post-project sustainability strategies and actions ensuring the long-term viability and impact of them.

T8.1: Exploitation, sustainability plan and IPR [**Leader:** IBEC; **Part/nts:** All partners]: T8.1 will design, test, and execute a scalable Exploitation, Sustainability & IPR Management Strategy which covers: (i) general outlook and trends; (ii) growth prospects, drivers, and opportunities; and (iii) a holistic exploitation and rollout plan on organizational and financial aspects. Leveraging stakeholder and end-user needs from WP1, T8.1 will establish a post-project sustainability plan for the KERs, feeding also T8.4-8.6. The project partners will in-depth analyse their findings and categorize them based on their commercial or non-commercial type and assess stakeholder RL and business opportunities (M24). Individual exploitation plans will be developed based on the defined pathways, outlining specific actions to be taken. The IPR management strategy will protect the results for the benefit of both innovators and users. Three exploitation workshops (M1, M24, M48) will be held during consortium events to address IPR and business modelling, equipping partners to effectively exploit their results. By M24, an application will be submitted to [Horizon Results Booster services](#) to enhance the exploitation potential and dissemination of research outcomes.

T8.2: IPR capacity building for LL ecosystems [**Leader:** EURICE; **Part/nts:** LL Ecosystems]: A capacity building

online session at M3 for all LL ecosystems will establish a common basis of understanding and outline IP management as well as increasing awareness for dissemination and exploitation rules in Horizon Europe. The **IP Manual (D8.2)** will provide additional guidance on IP-related challenges, risks and opportunities in the collaborative innovation processes. This document will be regularly updated to align with the exploitation plan and management of IP during the co-creation process. A second webinar in M24 will focus on IP management in LLs and introduce IP tools (e.g. NDA, IP consent forms) for the participatory work performed with external contributors. From the start, all partners will contribute to a mutually agreed IP Strategy, ensuring a common understanding of managing access to background IP, ownership, sharing, protection and results use within and beyond the project (T8.1).

T8.3: Establish an Entrepreneurship Hub within the LLs [**Leader:** EJS; **Part/nts:** DPS, AGF, IRIS, EZS, TMB, ODINS, IBEC, ECoE, MAGG]: T8.3 will establish an innovation and collaboration platform within the LLs and LHs as an Entrepreneurship Hub to promote co-eco-entrepreneurship, creativity, and collaboration among stakeholders, including "soil investors." Building on ALL outcomes from WP1-6 and in close collaboration with T1.3, T6.2, T5.4, these achievements will be transformed into business-oriented initiatives within the eco-industrial economy. Key messages from these tasks will be integrated into the T6.4 e-learning platform and disseminated across the EMENA's entrepreneurs (ANNEX FSTP) to spark interest in soil challenges and soil-related investment. The Hub will act as regional multiplier, motivating the businesses creation that capitalize on innovative research, while exploring Hubs integration from related projects (e.g., [GOV4ALL](#), [LivingSoiLL](#), [iCOSHELLS](#), [SOILCRATES](#)).

T8.4: LLs Factory Innovation Capitals Office for strategic and dynamic market research and funding [**Leader:** IBEC; **Part/nts:** LLs Ecosystems, ICRAF, MSN, MAGG, HSG]: T8.4 will establish the LLs Factory Innovation Capitals Office as entity, comprising key Nemesis LLs members, to advice on developing the Nemesis LLs open innovation service network. Using WP2-WP4 outcomes/existing databases, the Office will recommend upscaling and downstreaming services across EMENA, addressing common soil health challenges. Collaborating with EU/global initiatives (T7.2) and MAPs (T1.3), it will develop strategic LL-tailored sustainability plans for defined financial instruments (Section 1.2.2), including KPIs, market analysis, funding opportunities, and promote global partnerships. The Office, forming a Task Force in collaboration with the Entrepreneurship Hub, will identify and connect potential customers across EMENA with services developed within the LLs and map the global needs of potential users in regions facing similar soil health challenges (e.g., AU, U.S.A). With the Entrepreneurship Hub, the Office will identify and establish connections with crowdfunding hubs, venture capitals, angel investors, and green funds to support and finance innovations from Nemesis LLs. Information will be consolidated on the mapping tool (T1.4). "Engagement Sessions" and Joint Actions will be explored with EU networks such as [EDIHs](#), [Committee of the Regions](#), [Enterprise Europe Network](#). The Office will support the Nemesis coordinator (ECoE) to organise the EU LLs Conference-EU LL Club (M42-44) to promote LLs' outcomes, foster LL synergies, and hold a session focusing on future synergistic actions of all LLs to achieve the EC targets. A business-oriented collaboration plan, aligned with each LL's co-eco-business model (T1.2), will facilitate partnerships between LLs, R&I institutions, startups, & industry partners. A self-sustainability plan will be developed by the Office.

T8.5: Capacity Building for translating generated services into LL sustainability [**Leader:** HSG; **Part/nts:** LL Ecosystems, IBEC]: T8.5 will focus on building the capacity of the LL Ecosystems to ensure their sustainability by developing a framework for translating the generated services into sustainable revenue streams for the LLs. Inspired from the [InBestSoil project](#) and the Three-Bottom-Line approach, this task will equip LLs with the knowledge to convert the identified ESG impacts, utilizing the outcomes from WP3-WP6, into financial revenue. T8.5 will also transfer the knowledge regarding value delivery B2B and B2C models linked with the developed services and the LLs. Five training sessions and two open hands-on workshops will be organized by M46 to enhance the understanding of market dynamics, revenue generation strategies, and sustainable business practices.

T8.6: Sustainability plans for LLs becoming Frontier LHs of ESG policy shaping and innovation and Nemesis outcomes [**Leader:** ECoE; **Part/nts:** LL Ecosystems, IBEC, ICRAF, UNIGE, ADR, SEED]: T8.6 will design and coordinate tailored sustainability plans for the 5 LLs and all project outcomes, supplementing and aligning with T2.4 T5.4, and T8.4, to position them within the EU policy arena of soil health, environmental monitoring, and social/governance innovation. Focus groups with stakeholders (T1.3), along with Policy Hub, Factory Office and Task Force from T8.4, will create strategy plans. Exploration of strategic meetings with agencies like [JRC Units](#), [CEDEFOP](#), [EVTA](#), [EIB](#), and [EIT](#) will be included. A set of KPIs will be developed and updated annually over the next ten years, guiding each LL to support current and forthcoming local/national/EU/global strategies, making them solid support mechanisms for agencies. The task will identify external and matching funding sources to bring Platform, VETs, DC, DT, LLs Factory Office, and all outcomes to maturity, ingesting a dynamic sustainability dimension. Participatory actions, including roundtables, pitch sessions, and workshops (ANNEX FSTP), will engage identified agencies to ensure the business and policy-oriented exploitation and further development of the project's results.

WP# 9

Project Management

Objectives: To monitor and guard the quality of the overall work of the project, organise and run project meetings, establish appropriate review procedures within the project, and steer the projects towards quality results.

Task 9.1: Internal communication structures [**Leader:** ECoE; **Part/nts:** All partners]: The Consortium organization

will be defined in the Consortium Agreement based on developing a Simplified Consortium Agreement (DESCA) model. For information, the consortium will be composed of a General Assembly, or GA (comprising all partners participating to WP1-8), the Advisory Board (AB, external independent experts from the academic and stakeholder community, as well as experts in LLs concept, e.g. from [ENOLL](#), [SOILL](#)), the Executive Board (EB, comprising of the Scientific Coordinator, the Project Manager, Financial Manager and WP and LL leaders), a Communication, Dissemination, Exploitation and IP management, and Ethical Boards (composed of external independent experts). The coordinator (ECoE) will produce and regularly update list members and contact persons for easy communication within the consortium. The coordinator will be the sole contact point with the EC and the REA, transmitting any potential request from a Beneficiary, and will regularly report on the project's progress to the Project Officer. The GA will assemble physically three times (kick-off-CY, mid-term-IT, and final meeting-FR). Monthly steering group meetings will be held to monitor progress. Short-term staff exchanges between LL ecosystems will be explored.

Task 9.2: Administrative and financial management [Leader: ECoE; Part/nts: All partners]: The coordinator will oversee the distribution of the grant to all beneficiaries without undue delay and according to the Grant Agreement. The beneficiaries will be responsible for transferring their grant share to all their affiliated entities. All beneficiaries and related entities will be responsible for managing their grant during the time of the project according to their own internal rules and procedures. According to the GA, they will collect and duly archive invoices and timesheets of involved personnel and other expenses. Mandatory Technical Reports and compiled Financial Reports due at each Reporting Period will be produced with the support of each WP leader and the Coordinator (ECoE).

Task 9.3: Project monitoring and scientific supervision [Leader: ECoE; Part/nts: All partners]: The Scientific Coordinator will assign a Project Manager to assist in the daily management, internal communication, and project monitoring. A secure repository will be used for all Beneficiaries to keep documentation and deliverables (e.g., SharePoint). With the WP leaders, ECoE will produce a Management and Quality Plan, including the project management and quality control procedures for the deliverables, at the destination of all Beneficiaries. ECoE will produce a Data Management Plan (DMP) respecting the FAIR principles, covering the data lifecycle and deliverables produced during the project including Open Calls data. WP leaders will manage their individual WPs, produce WP deliverables, and report progress to the EB. AB will assess the quality of the deliverables according to the state-of-the-art and the Work Plan. The AB will assemble regularly and will report to the EB. The Ethical Board will ensure the project's activities respect the DNSH principle as defined in the "EU Taxonomy" in Regulation (EU) 2020/852. The Ethical Board guided by ECoE will produce General Ethical Guidelines, including a gender equality plan for each LL. The EB will assess the project's progress according to the Work Plan and schedule to anticipate any potential hurdle or delay and decide on mitigation measures. The main risks and mitigation strategies for each WP/Task have been identified. Any significant changes to the Work Plan require GA and Funding Authority approval.

Table 3.1c: List of Deliverables⁸

No#	Deliverable & Short description	WP Lead	Type	Diss	Date	
D1.1	Living Labs' maturity level & targeted KPIs: Assessing the maturity level of each Living Lab and its pilot sites and setting future targets.	1	PO-LIMI	R	SE N	15
D1.2	Governance and Business models, & e-GovBook for LLs: Gathering potential models to be used and making tailored LL decisions, and e-GovBook	1	MA GG	R, OTHER	SE N	21
D1.3	MAA strategic plan, multi-stakeholder governance, & dynamic mapping tool: collaborative component of platform, MAA and MAPs integrated across all WPs, multi-stakeholder governance plan/strategy and dynamic mapping tool	1	ERD N	R	PU	12/22/ 48
D1.4	Open Access Policy and Ethical Guidelines for LLs: Report for promoting openness, transparency, inclusivity, and ethical considerations	1	HSG	R	PU	27
D2.1	Data Review, Policy Alignment & SHDs for Desertification: SHDs and current state of desertification and cross-referencing of data with policies.	2	INA T	R	PU	18
D2.2	Scenario development for Desertification and storylines for LLs: Report for future scenarios of desertification, that will be used as LLs' storylines.	2	CYI	R	PU	24
D2.3	Strategy for LLs, KOs, & Contingency plans: LL strategies based on the scenarios and defining LL-tailored KOs, & contingency plans/adaptation strategies	2	UM U	R	PU	18/31
D3.1	Nemesis platform: Platform to accommodate the collaborative, monitoring, policy, entrepreneurship, DC GUI and e-learning components.	3	MA GG	OTHER	PU	32/47
D3.2	MED DC, data documentation, and Living Earth: Design of Data Ecosystem, DC prototype including GUI, data & metadata dictionary, and Living Earth.	3	UNI GE	R, DEM	PU	28/45
D3.3	Nemesis LLs Digital Twin: Design, Development, and Validation of DT for the virtual representation of LLs for co-designing, co-deciding, and co-creation.	3	CBS	R, DEM	PU	38/45
D3.4	Crowdsourcing tools and app: Training material for tech and low-cost sensors integrated into LLs and app for ingesting data into Data Ecosystem	3	CBS	R, DEM	PU	38/46
D3.5	Digital App Synthesis Machine: generation engine that will allow the easy exploitation of data for generating applications for soil health and desertification.	3	IBE C	R, DEM	PU	46

D4.1	Co-solutions database & adaptation strategy: Database with co-solutions, integration strategy, feedback from stakeholders, and ranked co-solutions	4	INR AE	R	PU	14/24
D4.2	Harmonization of data and metadata: Framework for harmonizing data to support Soil Observatory initiatives, FAIR principles, aligned with SoilWise.	4	CI- RAD	R	PU	29
D4.3	Baselines for SHDs & spectral libraries: Baselines of SHDs for the pilot sites as reference point, and spectral libraries to support continuous monitoring	4	IBE C	R, Other	PU	20/32
D4.4	Tool for Cost-Benefit analysis & transferability: Cost-benefit assessment tool for co-solutions incorporating the potential to be adopted in other regions.	4	INA T	R, Other	PU	20/32
D4.5	Monitoring LLs' pilot sites in operation: Monitoring LLs' performances at operational level, impacts & stakeholder engagement on SHDs and ecosystem services, and reports hosted in Nemesis platform for future assessment.	4	ECO E	R	PU	24/36/ 46
D5.1	Data-Driven policy shaping: Cross-referencing of produced data within LLs with EU and international policies for further data-driven policy creation.	5	UoG	R	PU	20/31
D5.2	Policy Hub: Policy Hub & component of exchange & knowledge sharing in regard to policy shaping and be ingested into Nemesis platform.	5	ICR AF	R	PU	24/47
D5.3	Policy Dialogue Tanks: Policy Tanks & outcomes from conducted workshops	5	ADR	R	PU	36/46
D5.4	Policy recommendations: Policy recommendations, policy briefs & dissemination across key actors.	5	CRE A	R	PU	46
D5.5	Policy Bootcamp programs: Policy Immersion Bootcamp programs material and activities, and feedback from participants.	5	ADR	R	PU	36/46
D6.1	Roadmap for Social Innovation: Starting point of social innovation within the LLs and roadmap to reach the targets	6	UoD	R	PU	25
D6.2	Raising Awareness and LL life coaching: dissemination/socio-ecological experiments for raising awareness across all identified TGs	6	HSG	R	PU	24/36
D6.3	LL Twinning & Social Labs: Knowledge Exchange activities & Think Tanks	6	UoD	R	PU	36/46
D6.4	E-learning component: All training materials (translated in 5 languages) across all WPs to be facilitated into Nemesis platform	6	HSG	R	PU	32/46
D6.5	Vocational Training Centres: report all necessary actions and tools for the establishment of VETs within LLs.	6	AVF A	R	PU	36/46
D6.6	Framework for upgrading into LHs & self-assessment tools: Developed framework for self-assessment and advancing pilot sites into LHs.	6	PO- LIMI	R	PU	36/47
D7.1	Dissemination & communication Plan (DC): describe the dissemination activities and communication channels that will be established.	7	EUR ICE	R	SE N	6/24/4 8
D7.2	Nemesis Synergies: Joint actions and set the roadmap for continuing synergies.	7	IBEC	R	PU	24/47
D7.3	Open call documents & third-party financing rules for each OC: Information needed for applicants to submit: Guidelines, templates, FAQ	7	EUR ICE	R	PU	20
D7.4	Open calls reports: results of each evaluation processes, scores, ESRs, evaluation board participation, top statistics and conclusions (incl. selection process).	7	EUR ICE	R	SE N	47
D7.5	Capacity building: Capacity building material & activities to LLs and feedback	7	HSG	R	PU	47
D8.1	Exploitation plan: Exploitation strategy and activities, and KERs monitoring and evaluation by all partners.	8	IBE C	R	SE N	6/24/4 8
D8.2	IP Manual: Guidance on IP challenges, risks, and opportunities, aligned with the CA and outlining IP management rules for the co-creation process.	8	EUR ICE	R	SE N	6/24/4 8
D8.3	Entrepreneurship Hub: Business-oriented activities and collaborations	8	EJS	R	PU	32/43
D8.4	LLs Factory Innovation Capitals Office: All activities, material, and roadmaps for the long-term sustainability of the LLs.	8	IBE C	R	SE N	32/47
D8.5	Capacity building for translating services into LL revenues: Training activities and material for advancing LLs knowledge for becoming sustainable.	8	HSG	R	PU	47
D8.6	Sustainability plans for LLs policy shaping & Nemesis Outcomes: Sustainability plans for LLs as policy frontiers and all components within Nemesis.	8	ECO E	R	PU	36/47
D9.1	Project Management & Quality Plan: plans, procedures and instruments for project & risk management, quality assurance, effective collaboration plan.	9	EC E	R	PU	6/12/2 4/36
D9.2	Data Management Plan: procedures set for data collection, processing, monitoring under the FAIR principles.	9	EC E	DMP	PU	6/12/2 4/36
D9.3	General Ethical Guidelines: This report will include compliance to ethical issues and gender equality aspects.	9	EC E	ETH- ICS	SE N	1/18/3 6/48

*Two batches of practice abstracts will be added to be Delivered M18 (preliminary) and M47 (final) with ≥ 25 abstracts each linked to Nemesis outcomes.

Table 3.1d: List of milestones

MS	Milestone name	WP	Date	Means of verification
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MS1	Kick-off meeting (ECoE)	9	1	Quorum for meeting is reached (Minutes of meeting)
MS2	Nemesis website available (EURICE)	7	6	Development and launch of the project website
MS3	Launch of open call (EURICE)	7	9	Call fiche, guides, and model sub-grant agreement
MS4	1 st MAA strategic plan version (ERDN)	1	12	MAPs fully operational
MS5	Gov/ce & Business Pool (MAGG)	1	14	Webinar for presenting the pool of models to LLs
MS6	Development Storylines for LLs (CyI)	2	18	SHDs list & prioritization of desertification key drivers
MS7	1 st Monitoring Framework ver. (ECoE)	4	24	Establishment of data collection and metrics framework
MS8	Factory Innovation Office (IBEC)	8	24	Formal creation and launch of the Office
MS9	Mid-term meeting (ECoE)	9	24	Quorum for meeting is reached (Minutes of meeting)
MS10	First version of Data Cubes (UNIGE)	3	28	DC infrastructure with geodatabase for each LL
MS11	Establishment of Policy Hub (ICRAF)	5	28	Formal creation and launch of this Policy Hub
MS12	Establishment of VETs (AVFA)	6	36	Formal creation of VETs
MS13	LH-RL Framework (POLIMI)	6	36	Criteria for advancing pilot sites into LHs
MS14	First version of Digital Twin (CBS)	3	38	DT design and architecture to be linked with DC
MS15	LLs Club Conference (ECoE)	8	44	LL Club meeting during the LL Club Conference
MS16	Final meeting (ECoE)	9	48	Quorum for meeting is reached (Minutes of meeting)

Table 3.1e: Critical risks for implementation (L: Likelihood, S: Severity, H: High, M: Medium, L: Low). #@RSK-MGT-RM@#

Risk description	L/S	WP	Proposed risk-mitigation measures
Low interest in applying for the Open Calls	M/ M	7	A robust communication plan will be implemented to widely promote the calls, targeting potential applicants across relevant sectors and technologies, and engaging third parties interested in joining the Nemesis community.
Delay in receiving the data ecosystem infrastructure	L/ M	3	ECoE infrastructure and/or cloud services will be employed as an interim measure until the new infrastructures are procured.
Dissemination/outreach not reaching intended audience	L/ M	7	Revising dissemination planning, including the incorporation of additional events at different levels, leveraging partner networks.
Not adequate data for developing DC/DT or not being functional	M/ H	3	Nemesis pilot sites are parts of past/ongoing projects, existing data could potentially be utilized for DT development and validation, and data collected during the project too. Open-source data (incl. EO) will be utilized.
Data management, privacy, and security	L/ M	All	DMP ensures that all data collection/processing/storage processes adhering to FAIR principles. Cybersecurity protocols. Compliance with GDPR.
IP disputes/disagreements	L/ M	1-8	Legal framework for handling IP rights/agreements. Review Existing Contracts and Agreements. If necessary, ECoE/IBEC involve Legal Experts.
Unexpected weather events or prolonged droughts	L/ M	4,6	Design adaptive and resilient systems for different environmental scenarios. Relocating pilot sites within the same regions with similar objectives
Competition from similar LLs risk for sustainability	L/ M	1-8	Collaborate with similar LLs and avoid overlapping activities, intensify pilot expansion and network, re-visiting LLs business plans.
Synergies not established with projects and initiatives	L/ M	4,6, 7	Dedicated task to establish synergies – Consortium has already a solid background in past/ongoing AU/EU/international projects.
Delay in deliverables by Third Parties	L/ M	7	Third Parties continuous monitoring and regular progress reviews will allow early identification of delays, enabling to take timely actions.
Interaction with society constrained by complicated tools and limited access	M/ M	All	The platform will be user-friendly, built on high-level open-access. It will feature forums, automatic notifications, and contact tools. Content will be available in 5 languages.
Partner underperforms or leaves the consortium	L/H	All	The Consortium Agreement describes such situations/measures to be taken to prevent non-compliance. Re-distribution of tasks/budgets if necessary.
Pilot sites owners remove interest in LLs.	L/ M	All	Nemesis partners own the pilot sites or have agreements as mutual understandings between owners and responsible partners. #§RSK-MGT-RM§#

Table 3.1f: Summary of staff effort

Partner	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
ECoE	5	6	8	32	4	6	8	12	57	138
ARI	1	2	1	8.2	3	2	1	1	0.5	19.7
CUT	3	0	1	14	2	6	2	2	1	31
DPS	12	0	4	13.5	1	6	3	5	1	45.5
CyI	4	15	4.8	22	3	6	3	3	2	62.8
INRAE (plus affiliated)	1	1.3	13.5	51.4	0.3	0.9	0.2	0.4	0.5	69.5
CIRAD	1	0	3	24	0	2.5	0.5	0.5	0.5	32
AGF	10	0.5	2	13	2	6	3	4.5	3	44
ARV	1.5	0.5	1	9	0.5	1	1	0.5	1	16
POLIMI	16	3	4	17.5	2	3	2	2	1.5	51

CREA	1	2	1	9	14	2	1	1	1	32
LML	4	0	2	13	9	6	2	2	1	39
UNIMI	3	3	2	13	2	4	1	1	1	30
ERSAF	2	0	2	9	3	3	1	1	1	22
IRIS	2	0	2	7	1	2.4	2	3	0.5	19.9
INAT	6	22	10	36	5	10	4	4	3	100
AVFA	4	4	2	12	10	10	2	3	2	49
EZS	7	0	18	24	2	9	3	6	1	70
UoG	8	12	13	34	17	12.5	7.5	5	3	112
BNDR	8	8	10	28	16	13	4	8	3	98
TMB	10	0	15	26	6	13.8	6	6	1	83.8
UMU	3	17	7	13.5	2	4	3	1	2	52.5
AVA	6	3	6	26	7	10.5	4	3	2	67.5
EJS	1	0	1	12	1	3	1	12	0.5	31.5
FCM	2	2.5	1	13.5	6.1	4.5	1	1	0.5	32.1
ODINS	2	0	4	11.5	2	4	4	5	1	33.5
IBEC	4	5	18	21	0	6	15	25	5	99
MAGG	18	0	34.2	6	0	8	6	6	2	80.2
ICRAF	2	3	2	3	24	3	2	2.6	1	42.6
ADR	1	0.5	0	0	37	0	0.5	1	1	41
UoD	4	0	2	0	0	33	2	1	1	43
ERDN	30	0	2	0	3	5	4	2	1	47
CBS	2	0	41	0	2.5	3	2	3.5	2	56
EGA	3.6	0	1	0	0	11	4	1	0.5	21.1
EURICE	2	0	0	0	0	0	28	6	3	39
MSN	5	0	0	0	0	6	1	2.2	1	15.2
HSG	10	0	2	7	0	56	10	10	4	99
UNIGE	2	0	40	8	0	4	4	4	4	66

Table 3.1g: 'Subcontracting costs' items

Partner/Type	Cost (€)	Description of tasks and justification
EURICE	25,000	Audiovisual material (25k€): A range of audiovisual content (e.g. animated videos, interview clips) will be produced, including two major productions—one early and one later in the project—to a) showcase the project and b) promote result uptake (WP8). The contracted video/filming company will be selected based on best value for money.
INRAE	50,000	Externalized analytical costs for characterizing soil biodiversity descriptors in 12 pilot sites

Table 3.1h: 'Purchase costs' items (travel/subsistence, equipment [depreciation cost considered]and other goods, works and services)

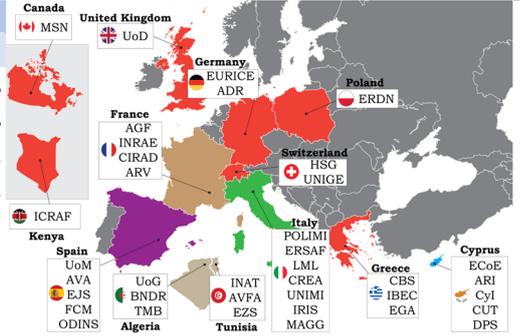
Partner/Type	Cost (€)	Justification
ECoE Equipment	150,000	Server for the MED DCs, Graphical Interface, Platform and Digital Twin of Nemesis.
ECoE Travel	81,000	External Ethic Board Travels 20k€, 20k€ travels for synergies with SOILL and others (Session 1.2.4), 20k€ Travels to Soil LLs, 10k€ consortium meetings, 11k€ pilot sites.
ECoE Others	85,000	50k ENOLL capacity building for LLs' SC , 10k€ Kick-off consortium meeting, 15k€ workshops/events with stakeholders & OCs, 10k€ Session in CY EU LLs conference.
EURICE Others	70,000	Comments: Provision for experts (WP7; Task 7.4; compensation of 450€/day with 6-8 proposals/day), 50k€; Website maintenance, 1k€; Communication materials 6k€; conference materials 6k€; CFS 7k€.
CUT Equipment	15,000	Agricultural drone to be used for the implementation of co-solutions
ERSAF Others	12,000	Consumables for solutions (2k€) & 10k€ for events/workshops for raising awareness
UoG Others	26,600	Pilot sites costs extraction of data (24.6€), workshop material, catering/room (2k€)
INAT Others	35,000	Pilot sites costs extraction of data (30k€), workshop/events material/catering (5k€)
AVFA Others	14,000	Pilot sites costs extraction of data (12k€), workshop/events material/catering (2k€)
IBEC Equipment	60,000	Field diagnostic toolbox for each LL - set of sensors that record field data
LML Others	35,000	Nemesis Workshop in Brussels and local events in LL regions for engagement
AVA Others	42,000	Pilot site costs extraction of data (6x6k€), workshop material, catering/room (4k€)
INRAE Others	65,500	LL workshop/meetings & national workshops (11k€), communicating soil data acquisition & experimental costs at pilot sites, consumables for soil sampling, shipping, soil analyses, incl. soil biodiversity, measuring ecosystem services (22k€), workshops with policymakers & open days/school days/cafés des sciences (4k€) dissemination/outreach, incl. open access publication, OC activities and capacity building, focus groups for LL sustainability (9k€), Final Meeting (19.5k€). No audits costs are claimed
CIRAD Others	103,000	6 scanners/LL(30*1,5k€=45k€), Biofunctool kits for 5-LLs(30k€), 100 samples/LL

		(5k€), Biofunctool development/tests consumables (20k€), open-access publ.(3k€)
AGF Others	25,900	Organizing events/workshops for identifying co-solutions (3.5k€); Sampling/shipping soil samples (1.5€); consumables for experiments in pilots (3.5k€); Financial support to farmers for attending workshops (5k€); Internships for monitoring soil health in LL (11.4€); Diffusion supports for FR LL (1k€)

3.2. Capacity of participants and consortium as a whole

3.2.1. Consortium as a whole #@CON-SOR-CS@# #@PRJ-MGT-PM@#

A panel of 38 public and private partners (from 13 countries) was formed, paying particular attention to SSH aspects. These 38 partners come from ES(5),CY(5),FR(4),GR(3),IT(7), TN(3),DZ(3),PL(1), UK(1), DE(2),KE(1),CA(1),CH(2). **8-UNIs:** POLIMI, CUT, UMU, UoG, UNIMI, UoD, UNIGE, HSG; **8-ROs:** ECoeE, INRAE, CyI, CIRAD, ARV, INAT, CREA, ADR; **9-SMEs:** CBS, DPS, EJS, ODINS, IRIS, TMB, EZS, MSN, EURICE; **1-LE:** MAGG; **6-NGO:** AGF, ERDN, IBEC, AVA, FCM; LML, **1-HSE:** EGA, **1-IO:** ICRAF; & **4-POs:** ARI, AVFA, BNDR, ERSF.



HSG are experts in SSH, including research in the area of responsibility and sustainability, whereas all academic and research institutions use open science practices. The public bodies, research organizations and universities established in a Member State/Associated Country have a GEP. The complementarity of the partners, and the direct and continuous engagement of stakeholders, ensures that all aspects of the topic are addressed with well-defined roles.

3.2.2. Access to critical infrastructure

Partners possess the necessary facilities and equipment for research, innovation, stakeholder engagement, and collaboration. All partners will fully exploit open databases. Research organizations/UNIs/SMEs will provide essential equipment for EO, environmental monitoring, AI/ML, and IT. All Living Labs (CY, FR, IT, NA, ES) ecosystems' partners (except of DPS, CIRAD, ODINS, see Table p. 1) will provide access to pilot sites in CY, FR, IT, TN, DZ, and ES, which will contribute to the 5 LLs. EURICE will provide the tools needed for the project's various dissemination, communication, and OC activities. IBEC Diagnostic Toolbox: The field diagnostic toolbox is part of the monitoring and reporting processes and consists of a set of sensors that record field data, SHDs and vegetation indices, offering advantages over traditional facilities. Biofunctool® toolbox from CIRAD: is made up of 8 functional SHDs to assess three main soil functions: i) carbon transformation through the labile carbon pool (POXC), basal soil respiration (SituResp) and meso- and macrofauna activity (Bait Lamina); ii) nutrient cycling through fixed (Soil NO₃ extraction) & dynamic (Ion exchange membrane) measurement of NO₃ and NH₄ content and iii) maintenance of soil structure through measurement of water infiltration rate (Beerkan), aggregate stability in water at two depths (Slack test), and visual assessment of soil structure (VESS). All used are field-deployable, user-friendly, low-tech, low-cost and effective for assessing soil health. CIRAD Automated ground scanners: soil imaging system to monitor root dynamics/fungi/mycorrhizal development, and activities of soil fauna and interactions with roots and fungi.

3.2.3. Complementarity between participants

Activities/ Roles/Partners	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38		
Living Labs Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Desertification-soil degradation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Stakeholder engagement/MAA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Social Innovation	X		X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Scenario development	X									X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Governance & Business			X									X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Strategy development	X		X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Data Management	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Data Cubes & Digital Twin	X	X	X				X	X	X							X	X			X	X					X	X	X	X				X					X	X	
ICT and Tech Providers	X		X						X	X						X	X			X	X				X	X	X	X	X				X					X	X	
Soil Biodiversity		X				X	X	X	X																			X	X										X	X
Soil - Management	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Soil - Crop	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Soil - Water	X	X	X	X	X				X							X	X	X	X	X	X				X	X	X	X	X										X	X
Soil - Pasture		X															X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
VET and education	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Monitoring and Cost-benefit	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FSTP / Open Calls	X						X									X				X				X	X	X	X	X					X	X					X	X
Policy Shaping / Innovation		X					X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SSH	X										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dissemination and Outreach	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Exploitation and Networking	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

3.2.4. Partners' main role and contribution to the project

Nemesis' consortium consists of: **ECoeE:** leading WP9 / CY LL, with extensive experience in project management, co-creation, DC, AI, and advanced EO data for environmental monitoring; **ARI:** National policymaker specializing in soil-crop-water management, in-situ and remote sensing monitoring, and translating LL outcomes into policy recommendations; **CUT:** Experts in soil-crop interaction, biodiversity, plant pathology, education, vocational training, and stakeholder engagement; **DPS:** IT services and agricultural solutions in CY with a large farmer network; **CyI:**

Experts in ecohydrological monitoring, land degradation, soil erosion, stakeholder engagement, participatory research, and scenario development; ●**INRAE**: Leading WP4 / FR LL, extensive knowledge in solutions for reversing soil degradation and experts in soil-biodiversity; ●**CIRAD**: Low-cost tech provider for soil health and biodiversity monitoring; ●**AGF**: Expertise in sustainable soil ecosystems, agroforestry systems, and vocational training for sustainable management; ●**ARV**: Experts for innovations and advisory services to farmers; ●**POLIMI**: Leading WP1 / IT LL, with expertise in LL management and pilot sites assessment to be advanced into LH, remote sensing, data management, solutions for healthy cropping systems; ●**CREA**: National research centre specializing in soil-crop management, food security, and policymaking; ●**LGB**: Stakeholder analysis and engagement; ●**UNIMI**: Experts in soil health assessment and agroecology; ●**ERSAF**: Regional agency for agriculture and forestry development for policy shaping; ●**IRIS**: Engages with local communities and food industries for sustainable products; ●**INAT**: Leading NA LL, expertise in soil health assessment using as indicators the defined SHDs and cost-benefit analysis frameworks; ●**AVFA**: Leads VETs establishment and experts in policy recommendations; ●**EZS**: IT and data management services for agriculture; ●**UoG**: Experts in sustainable land management monitoring frameworks and development of strategies aligned with national/global policies; ●**BNDR**: Policymakers and experts in local and national regulation support; ●**TMB**: Multidisciplinary agricultural experts with a soil analysis lab; ●**UMU**: leading WP2, ES LL, and defining LLs' long-term strategies and objectives, specializing in digitalization and precision sustainable management; ●**AVA**: Experts in drone, sensor, and satellite tech, integrating sustainable livestock management to improve soil health; ●**EJS**: Leads the Entrepreneurship Hub and works with regenerative practices; ●**FCM**: Supports 77 agricultural entities and 22,000 farmers/ranchers with advisory services and training; ●**ODINS**: IT experts supporting ES LL in Nemesis data tech development; ●**IBEC**: Leading WP8, providing low-cost infrastructure for soil health monitoring, experienced in exploitation/sustainability plans, with strong global network; ●**MAGG**: Leading WP3, business and governance models, Nemesis platform development, and showcasing experience in the development of software; ●**ICRAF**: Leading WP5 and the Policy Hub, leveraging [CA4SH](#)'s global network (>133 partners) and expertise in soil health monitoring and risk assessment; ●**ADR**: Experts in policymaker engagement and policy education; ●**UoD**: experts in citizen science (led [GROW Observatory](#), contributed to EC Guidelines on Citizen Science for Environmental Monitoring), social innovation, stakeholder engagement; ●**ERDN**: Establishing the MAA strategy; ●**CBS**: IT experts developing the Nemesis DT and crowdsourcing platform; ●**EGA**: Co-creating educational resources, implementing [SALL](#) activities to bridge schools/research/society; ●**EURICE**: leading WP7 dissemination, communication, and outreach, organizing 3 OCs, IP capacity building; ●**MSN**: Integrating insights from mature LLs; ●**HSG**: leading WP6, focusing on social research/innovation, ethics, stakeholder engagement, sustainable curriculum design, education; ●**UNIGE**: Swiss DC and Living Earth Developers, experts in AI/Big Earth Data.

3.2.5. Industrial/commercial involvement in the project

Nine of the Nemesis partners are SMEs and one LE with clear potential to assist in the exploitation and sustainability of project's outcomes including LLs, VETs, DT, Data Ecosystem, etc. ●**CBS** and **DPS**, as experts in Information Technology and tailored for data-intensive solutions, will lead the development and operation of the DT and Crowdsourcing app, and Dynamic Mapping tool, respectively (**DPS**-IoT experts to support CY LL for service development/monitoring); ●**EURICE** brings strong innovation management experience, design and implement the OCs, lead the consortium's communication channels and guide knowledge valorisation for successful project exploitation, through its role as coordinator of the IP advisory service for Horizon beneficiaries; European IP Helpdesk; ●**MAGG** will support the governance and business development of the LLs, lead the WP of digital solutions and develop the Nemesis platform; ●**ODIN** IoT projects to boost the development of services for ES LL; ●**EZS** and **TMB**, as IT, technologies and monitoring frameworks and smart-farming experts will support NA LL in the services provision and LL long-term sustainability; ●**MSN** for knowledge transfer and exchange knowledge from the mature Canadian Bridge to Land Water Sky LL; ●**IRIS**, an organic food supplier promoting sustainable land cultivation, will support the IT LL by addressing local community needs and integrating innovative technologies to reduce environmental impact and land degradation; ●**EJS**, closely linked with Regeneration Academy, will leverage its entrepreneurial support and extensive EU and global networks to help establish the Nemesis Entrepreneurship Hub. Nemesis also has strong ties with industrial, commercial, and DIH groups to aid in exploiting the project's sustainable outcomes.

3.2.6. Other countries and international organizations

Two Swiss UNIs, **HSG** & **UNIGE**, join the project's consortium. **HSG** contributes expertise in SSH, societal/stakeholder engagement, socio-economic data, capacity building for sustainable businesses, & enhanced learning. **UNIGE** is key to developing MED DC & Living Earth, drawing on their experience with database management, analysis, having already implemented the Swiss DC. **MSN** from Canada, a mature LL for agricultural climate solutions, shares key insights & challenges faced, providing essential information for Nemesis LLs to take proactive measures. **UoD** (UK), as experts at the intersection of creativity, technology, action-research & social innovation. **ICRAF**, a global leader in soil health & [CA4SH](#) (deeply involved in [UNFCCC](#) – COP27 & COP28), plays a crucial role in shaping the Policy Hub & leveraging its extensive network. Three organizations from Tunisia (**INAT**, **AVFA**, **EZS**) & three from Algeria (**UoG**, **BNDR**, **PAI**), all with extensive experience in EU & international projects, form the NA LL. Their expertise in sustainable management practices support the Nemesis & EC objectives. #CON-SOR-CS# #PRJ-MGT-PM#

Annex: Financial support to third parties

Financial support in the form of a grant awarded after a call for proposals

List of Abbreviations:

FSTP	Financial Support to Third Parties
IER	Individual Evaluation Report
LL	Living Lab
LH	Light House
MAPs	Multi-actor Platforms
OC	Open Call

List of Nemesis Partners:

#	Participant organisation name	Short	Ecosystem
1.	ERATOSTHENES Centre of Excellence (Coordinator)	ECoE	Cyprus LL Ecosystem
2.	Agricultural Research Institute	ARI	
3.	Cyprus University of Technology	CUT	
4.	DEPI Spectrum LTD	DPS	
5.	Cyprus Institute	CyI	
6.	National Research Institute for Agriculture, Food and the Environment	INRAE	French LL Ecosystem
7.	French Agricultural Research Centre for Sustainable Development	CIRAD	
8.	Agroof Société Coopérative et Participative	AGF	
9.	ARVALIS Institut du végétal	ARV	
10.	Polytechnic University of Milan	POLIMI	Italian LL Ecosystem
11.	Council for Agricultural Research and Economics	CREA	
12.	Legambiente Lombardia	LML	
13.	Università degli Studi di Milano Statale	UNIMI	
14.	Regional Agency for Services to Agriculture and Forestry	ERSAF	
15.	IRIS Cooperativa Agricola di Produzione e Lavoro PA	IRIS	
16.	Institut National Agronomique de Tunisie	INAT	North Africa LL Cross-border Ecosystem
17.	Agence de la vulgarisation et de la formation agricoles	AVFA	
18.	Ezzayra Solutions	EZS	
19.	University of Guelma	UoG	
20.	Bureau National d'Études pour le Développement Rural	BNDR	
21.	TM Blinacon	TMB	
22.	University of Murcia	UMU	Spanish LL Ecosystem
23.	Asociación Valenciana de Agricultores	AVA	
24.	El Junquero Sa	EJS	
25.	Federación de Cooperativas Agrarias de Murcia	FCM	
26.	Odin Solutions Sociedad Limitada	ODINS	
27.	interBalkan Environment Center	IBEC	Governance, Scientific, Tech, Policy and Soci(et)al Impact to support the LL Ecosystems and Knowledge sharing
28.	Maggioli SPA	MAGG	
29.	World Agroforestry Organization/Coalition of Action for Soil Health	ICRAF	
30.	adelphi research gmbH	ADR	
31.	University of Dundee	UoD	
32.	European Rural Development Network	ERDN	
33.	CIBOS INNOVATION IKE	CBS	
34.	Ellinogermaniki Agogi / Network of Schools as Living Labs	EGA	
35.	EURICE European Research and Project Office GmbH	EURICE	
36.	Mistawasis Nêhiyawak	MSN	
37.	University of St. Gallen	HSG	
38.	University of Geneva	UNIGE	

Short note on EURICE in perspective of OC management:

P35-EURICE is a professional project management office with experiences in launching competitive R&I calls, which also developed capabilities within Horizon IP Scan. P35-EURICE has been the contractor of this service and we did IP strategy/management consultancy for SMEs been involved as subgrantees in Horizon Europe projects. In RURACTIVE, P35-EURICE is overseeing the IP management rules – which follows similar objectives of OC#1, i.e. to engage with local communities actors – including specific agreements (e.g. „informed consent“) and procedures for co-creation with external stakeholders.

The topic HORIZON-MISS-2024-SOIL-01-01 allows for Financial Support to Third Parties (FSTP). The Nemesis project foresees **three Open Calls (Fig. 1) (OCs)** for proposals focusing on the following topics:

- 1) **OC#1 - Living Labs (LLs) Networking:** to enhance the networking capacity of the LLs, with a simultaneous expansion of incorporated pilot sites. This expansion, in turn, will magnify the LLs' impact, broadening their reach and enabling an effective approach to combating desertification and soil degradation by encompassing a wider array of diverse challenges (stakeholders will provide feedback prior to selection);
- 2) **OC#2 - LLs' Technological Advancement:** to provide the pilot sites within the LLs with advanced low-cost technologies potentiating the maturation into LightHouses (LHs). The scope of this OC is guided by the outcomes from Task 3.1 (stakeholders will provide feedback prior to selection).
- 3) **OC#3 - Raising Awareness to young people, building on future generations:** to engage with schools to develop small projects which will allow pupils to engage in real-life desertification projects, where they will develop skills such as educational enrichment, critical thinking, environmental awareness, and creativity.



Figure 1. Schematic concept of Nemesis Open Calls.

The geographical scope of OC#1 and OC#3 will be contained within the LL countries, while the geographical scope of OC#2 will be contained within Europe.

In the following section, the general management of the OCs is described (section 1), as well as the objectives and structure of each OC (section 2).

1. Description of the management of Open Calls for proposals in Nemesis

As shown in Figure 2, OC#1 and OC#3 will have the same timeline for preparation phase from the publication of the Call for proposals to the start of the projects, while OC#2 will have two evaluation timepoints, resulting in an alternative timeline. Considering that Nemesis will have three OCs, monitoring will be adjusted and adequate to the design and particularities of each one, permitting a continuous and correct feedback of the processes and understand what should be replicated and what should be corrected.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
OC#1																																																
OC#2																																																
OC#3*																																																

*timing will be tailored to the need of the schools (depends on project start date)

Legend

- Open call preparation
- Call open for submission
- Evaluation phase & communication of results
- Sub-grant preparation
- Project start and execution
- € Payment
- ★ Quality assessment

Figure 2. Workflow and timeline for the preparation of Competitive calls for proposals.

A total budget of **€1.000.000,00** has been planned within P1-ECOE's budget as Financial Support to Third Parties. This budget will be allocated to the Open Calls as described in Table 1 and Figure 3.

Table 1. Budget of the Open Calls for proposals

Open Call*	Publication of the call (month M)	Max. FSTP per project (€)	Number of projects	Max. FSTP total (€)
OC#1 LLs' Networking	M9 (1 phased)	100.000,00	5-8	500.000
OC#2 LLs' Technological Advancement	M16; M25 (2 phased)	150.000,00	Phase I: 12 Phase II: 3-6	450.000
OC#3 Raising Awareness to young people, building on future generations	M9 (1 phased)	5.000,00	10-15	50.000
Total				1.000.000 €

*a Monitoring Committee will be established, including the coordinators of each LL defined in Task 1.3. This ensures relevant scientific and technical knowledge, business and financial expertise during preparation, evaluation and selection procedures of the OCs. For each OC, one member of the Monitoring Committee will be assigned as a Call Leader.



Figure 3. Distribution of Open Calls based on the total budget assigned to Nemesis FSTP.

Criteria for calculating the amount of financial support: Nemesis has a total budget of €12,000,000, with €1,000,000 allocated specifically for Open Calls. These funds are further divided to support four key initiatives within the Nemesis Living Labs ecosystem: ■ €500,000 will be directed towards the inclusion of new pilot sites and the expansion of the Nemesis Living Labs network, with a goal of establishing at least one new pilot site in each of the five Living Labs (considering the budgets allocated to the LL ecosystems). This expansion aims to broaden the operational capacity of the Living Labs, fostering greater collaboration and innovation. ■ €450,000 is earmarked for the integration of new technologies into the Living Labs. This decision was based on the already integrated equipment outlined during the proposal stage, particularly in collaboration with key partners like IBEC and CIRAD. Currently, the five Living Labs are equipped with technologies valued up to approximately €150,000. The additional €450,000 will enable us to introduce at least three technologies across Living Labs, ensuring flexible tools are available for supporting LLs objectives and monitoring frameworks. ■ €50,000 will be allocated to raising awareness about soil health and desertification among young people, a critical area of focus for sustainable environmental management. This initiative draws inspiration from similar programs and aims to engage schools and youth organizations. We plan to offer at least 10 awards, with a minimum of two awards for each Living Lab, to support educational projects that promote soil health awareness and action around these pressing environmental challenges. ■ An additional €50,000 will be allocated for external evaluators responsible for assessing the applications received through the Open Calls. This ensures an objective and high-quality evaluation process, which is critical for selecting the most promising and impactful projects to be implemented in the Living Labs network.

OC#1 will be launched by M9 and will stay open for 2 months following an evaluation period to select between 5 to 8 new pilot sites. OC#3 will be launched by M21 and will stay open for 2 months following an evaluation period to select between 10 to 15 schools within the local communities of the five LLs. OC#2 will be launched by M16, with a 2-month window to submit applications. Importantly, OC#2 will have two evaluation time-points (M18 and M24) to allow a first selection for the 12 most promising technologies and providing them 6 months to understand and refine the technologies to the different LLs needs and then a final evaluation round to select the best 3-6 technologies to receive FSTP. The other technologies will have the possibility to continue connected to Nemesis project events, experts and network with the perspective of a future integration in the LL (see also Table 2).

1.1 Preparation and publication of the Open Calls

To ensure the competitiveness of the OCs, Call Announcements shall be published on the Horizon Europe Programme webpage of the Funding & Tenders Portal, the Mission Soil Platform and Newsletter, the Nemesis website, and accessible web portals/social networks of Nemesis, its beneficiaries, associated networking partners, and other projects involved in the Mission Soil and LL initiatives. The consortium will ask for PO support in circulating OCs information in relevant Horizon Europe websites and with the National Contact Points.

The calls will remain **open for at least two months (8 weeks)**. The Call Announcements will have a clear European dimension and will be prepared by P35-EURICE in close cooperation with the Monitoring Committee (see further) and the Coordinator. P35-EURICE will implement an electronic submission system linked to the project website and provide all relevant call documents (call text, guideline for applicants, FAQ for applicants, and template for proposals). The call text will include the following information:



- A detailed description of the call objectives, expected applications and results, clarifying to applicants which information must be included in order to be a successful submission and a competitive application.
- Eligibility criteria for participation in any part of the call.
- The funding available for the different categories of project.
- The Guide for applicants – giving technical background and overall objectives.
- The coordinates (email address and phone number) of a help facility that will be maintained for applicants during the call.
- The process for electronic submission of proposals.
- The deadline for proposal submission, clearly specifying the local time involved (Central European Time (CET)).

On receipt of each proposal, an Acknowledgment of receipt will be sent to the applicant. Late submissions will not be accepted and will receive a “call closed” notification. The proposals will be evaluated as last submitted before the close of the call. After the close of the call no additions or changes to received proposals shall be taken into account.

The Nemesis consortium will implement several dissemination and communication activities, which will provide additional support for the running projects implemented during the Open Calls (Table 2). Further support to applicants will be provided by P35-EURICE during the whole application period through different channels (i.e. email, webinars, guiding documents). All applicants will receive fair and equal treatment. Information or facilities supplied to any applicant must be equally available to all. In case submission deadlines are changed, this will be immediately announced, and all registered applicants will be informed of the change. Third parties can only apply to one of the OCs.

Table 2. List of dissemination and communication activities providing additional support for running projects during the OCs

Responsible partner(s)	Type of event	Description & Purpose	OC	Location	Month*
ECoE, UMU, INRAE, INAT, UoG, POLIMI	5 Local/National Workshops with stakeholders [hybrid]	MAPs, promotion of Open Calls, LL strategies and activities, Dissemination activities, Policy Hub, Entrepreneurship Hub, Exploitation of project’s outcomes, among other co-creation activities	1 2 3	LLs	M6
IBEC	5 Synergies with ongoing projects [physical]	For soil health descriptors, dissemination events, co-organizing events, among other co-creation activities	1 2	N/A	M8/M12 /M24/M3/M40
UoD	Towards social innovation and LHs [virtual]	Engagement of stakeholders and established MAPs for laying the roadmap of social innovations and LHs status within integrated pilot sites	1 3	N/A	M18
ERND	Central and Eastern European Workshop [virtual]	MAPs, promotion of Open Calls, LL strategies and activities, Dissemination activities, Policy Hub, Entrepreneurship Hub, Exploitation of project’s outcomes, among other co-creation activities	1 2	N/A	M12
IBEC	Balkans Workshop [virtual]	MAPs, promotion of Open Calls, LL strategies and activities, Dissemination activities, Policy Hub, Entrepreneurship Hub, Exploitation of project’s outcomes, among other co-creation activities	1	N/A	M24
LML/WP Leaders	Open Workshop meeting at EU level organized by LML	Academic-oriented: presentation for project outcomes and feedback from academic field	1	Brussels	M24
ICRAF	2 Virtual Policy Workshop	Virtual workshop with international representatives of policy sector	2	N/A	M20/M40
UNIGE	Virtual Workshop for Data Requirements in the Data Ecosystem	Data requirements for Data Cubes and Harmonization	1	N/A	M12

CUT/ARV/UNIMI/AVA/EZS/PAI	5 Living Lab Info Days	5 hybrid events-info days where the LL ecosystems will promote the project and the LLs	1 2 3	LLs locations	M24
All pilot site managers	5 Local/National Information Days for future generation and stakeholders	School visits to selected pilot sites for raising awareness to School Ecosystems, stakeholders visits to pilot sites for demonstration activities	3	LLs locations	M32
All LL ecosystems	5 Information Days for future generation	Living Labs to Schools for raising awareness to local communities for Soil Health and Desertification	1 2	LLs locations	During project lifetime
ADR	1 Virtual EU Policy Dialogue Tank (virtual)	Event to introduce and discuss the policy recommendations with key policy makers at EU level	1	N/A	M36-40
ARI/UMU/INRAE/CREA/AVFA/BNDR	5 Local/National Policy Dialogue Tanks workshops [hybrid]	Event to introduce and discuss the policy recommendations with key policy makers at national level.	1 2	LLs locations	M40
EJS	2 Virtual Entrepreneurship Hub	Virtual workshop with international representatives of industrial sector	1	N/A	M24/M40
IBEC/CIRAD/CBS	Training Webinars (virtual) for infrastructure from project partners and crowd-sourcing app and platform	Training event for presenting the acquired infrastructure from the project partners and the developed mobile app and platform linked with these infrastructures	2	N/A	M38
HSG	Training Webinars for e-learning	Training event for presenting the e-learning platform	1	N/A	M45
UNIGE/IBEC	Training Webinars for infrastructure for MED Data Cube and Data Exploitation	Training event for presenting the data cubes and the App Generation Engine	2	N/A	M41
CBS	Training Webinars for infrastructure for Digital Twin	Training event for presenting the developed DT	1	N/A	M42
IBEC	3 Exploitation pathways workshop (virtual/hybrid)	Three workshops aimed at defining exploitation pathways (M24 during project meeting of General Assembly)	2	N/A	M12/M24/M42
CyI/CIRAD/FCM/LML/INAT/UoG	5 Local/National Workshops with stakeholders as Social Synergy Tanks integrating (end)users-oriented and cross-sectoral meetings as Social Labs	Raising awareness, MAPs, LL activities, Dissemination activities, Policy Hub, Entrepreneurship Hub, Exploitation of project's outcomes, among other co-creation activities	1	LLs locations	M36
UoD/LL ecosystem leaders	5 virtual LL-oriented Twinning Programs between LL experts defined by LL ecosystem leaders	Knowledge exchange, excellence roadmaps, identification of future needs and strategies for LLs	1 2	N/A	M42
MSN/LL ecosystems	2 virtual meeting for sharing insights from mature international LL (Canada)	Raising awareness, knowledge, experience, and challenges sharing, co-creation activities, establishment of global partnerships, synergies	1 2	N/A	M38
IBEC/MSN/DPS/AGF/ERSAF/EZS/PAI	5 Living Lab sustainability events [hybrid]	5 national LL-oriented events inviting stakeholders from the EMENA to participate for discussing the developed sustainability plan for the LLs	2	LLs locations	M46
All pilot site managers	Socio-ecological experiments	Under the supervision of HSG, Pilot Site Managers will conduct the socio-ecological experiments to selected pilot sites	1 3	LLs locations	M34
ECoE	EU Level Conference	EU conference connected to the LLs that will present LLs and other outcomes to EU stakeholders, achieve LL partnerships, Cohesive EU LLs strategy for supporting EU strategies for enhancing soil health, combatting desertification and land degradation	1 2 3	Cyprus	M44
HSG	6 user-oriented virtual training sessions (in collaboration with MAGG, UNIGE, CBS, IBEC, ECOE, DPS, POLIMI)	User-oriented training activities for supporting LL ecosystems and stakeholders in exploring Nemesis outcomes including Nemesis platform, LLs e-GovBook, Data Cube and Living Earth, Digital Twin, Crowdsourcing app, Digital app synthesis machine, Monitoring framework, LH Readiness Level, cost-benefit analysis)	1 2	N/A	M46
ECoE (with responsible partners for the platform's components)	Virtual Information Day for Nemesis Platform	Presentation of Nemesis Platform and discussion with stakeholders	1 2 3	N/A	M47

*All event dates are indicative, and there may be slight differences in the dates presented if it is considered necessary by the coordinator and the WP leaders.

The template for proposals will include at least the following sections (limit of 10 pages):

- *Project summary, objectives and ambition*
- *Work plan and concept (including timeline, milestones and deliverables for project monitoring)*
- *Expected impact*
- *Background and qualification of the applicant*
- *Justification of estimated costs and resources in relation to the implementation plan*

The consortium will ensure that Project Officer is kept informed about the open calls and their progress. At the same time, it will inform the Commission of the means by which the competitive call was published and of the names and affiliation of the experts involved in the evaluation. The content of the Open Calls will be shared with the Project Officer at least 30 days prior to their expected dates of publication. The Project Officer will also have access to a complete test version of the website at least 5 days before the expected date of publication of the Call Announcement.

The calls will target specific activities that correspond to the competencies and capabilities available in the project as well as the platform features. This will be made clear to the applicants in the call information. The members of the Nemesis consortium shall not respond directly to the call as their participation will be in form of supporting and assisting by facilitating access to tools, resources, experts and key ecosystem stakeholders to proponents, included in their grant specified in this document.

A **Monitoring Committee** consisting of consortium members (including the coordinators from each LL – ECoE, INRAE, INAT, POLIMI, and UMU, defined in Task 1.2) with relevant scientific and technical knowledge, and business expertise, will be formed to establish the selection criteria to ensure a fair selection process. The Monitoring Committee will also select external evaluators to assess the proposals during Task 7.4. The administrative management processes will be defined, and all relevant material will be created, including call fiche, applicants' guide, and model sub-grant agreement. For each OC, one member of the Monitoring Committee will be assigned as a Call Leader. **Importantly**, for OC#1 and OC#2, MAPs and engaged stakeholders will be called upon to provide additional feedback in consultation prior to the final selection, taking into account the identified needs, challenges, and opportunities of the Living Labs, as well as those of the stakeholders across the Quintuple Helix.

1.2 Evaluation of proposals

The underlying principles during evaluation of the proposals submitted in the Open Calls are:

- **Excellence** - projects must demonstrate a high level of quality in relation to the topics and criteria set out in the calls
- **Transparency** - funding decisions will be based on clearly-defined rules and procedures, and applicants will receive adequate feedback on the outcome of the evaluation
- **Fairness and impartiality** - all proposals will be treated equally and evaluated impartially on their merits, irrespective of their origin or the identity of the applicants
- **Confidentiality** - all proposals and related data, information and documents will be treated with utmost confidentiality
- **Speed and efficiency** - proposals will be evaluated and grants awarded; and administered as swiftly as possible, without compromising quality or breaking the rules

An **Evaluation Committee** will be created including Nemesis partners as well as external experts, selected by the Monitoring Committee. External experts will be from fields within the Nemesis scope of action (innovation, agriculture – α , electronic, IT etc) with relevant experience in the fields and also with the highest level of knowledge, and who are recognised authorities in the relevant specialist area. The names and brief CVs of the selected experts shall be communicated to the Project Officer in advance of the evaluations. The members of the Evaluation Committee will be briefed on evaluation procedures as well as the details of the relevant call. The selected experts will sign a declaration of confidentiality concerning the contents of the proposals they read. The form which they use for evaluation also carries a declaration of freedom from conflict of interest which they agree to by signing them. Evaluation Committee members having a conflict of interest will be excluded from the individual evaluation process. The members of the Evaluation Committee will be paid on the basis of €450 per day with up to 6-8 proposals being reviewed per day. For the 3 OC with 4 evaluations, a provision of €50 000 will be made in the Open Call Cascade Funding budget to account for the costs of Evaluator fees and related expenses in conducting the evaluations, including the efforts for teleconference meetings (see further below). The composition of the Evaluation Committee will only be confirmed after closing the Open Calls. This allows to properly identify who are the applicants and to select experts avoiding the risk of conflict of interest.

Each proposal will be evaluated by at least three Evaluation Committee members: two external evaluators and one evaluator from the Nemesis consortium, responsible for reviewing and scoring each proposal based on the following criteria (for each criteria a set of questions will be prepared, which will depend on the call type):

- **Alignment:** Applicants should demonstrate a clear alignment with each call objectives/challenges.
- **Excellence:** Application must demonstrate a clear set of objectives aligned with the definition of the goals and with the general objectives of the project.
- **Impact:** Applicants must define their ambition and a clear set of expectations aligned with the objectives of the Call. Proposals must demonstrate impact of the project and its contribution to Nemesis.



- **Implementation:** Applicants must provide credible evidence that the project team is committed and have the necessary skills, competence, and expertise to deliver the project.

The evaluation process shall begin at a maximum of two weeks from the close of the call and will be done via a two- or three-stage procedure:

- **Stage 1:** the formal eligibility criteria and the call-specific requirements will be checked respectively by P35-EURICE and the Monitoring Committee. Eligibility criteria are:
 - (i) applicants are registered (for organizations – legal entity) or resident (for individuals) in an EU Member State or a Horizon Europe Associated country,
 - (ii) the uniqueness of the proposal;
 - (iii) the existence of the same entity coordinating several proposals;
 - (iv) the alignment with call for proposals and objectives.
- **Stage 2:** the proposals will be allocated to the Evaluation Committee and distributed electronically. The Evaluation Committee will evaluate the proposals according to the following pre-defined selection criteria and electronically submit their signed evaluation forms:
 - *Expected impact related to the scope and strategic objectives of Nemesis*
 - *Expertise and resources to carry out the work*
 - *Impact/Benefit of the project for the applicant*
 - *Other selection criteria specific to each call (see call descriptions below)*
 - *Gender balance*
- **Stage 3** (only applicable for OC#1 and OC#2): the Evaluation Committee will gather in a teleconference meeting to talk with the top ranked proposals. During this teleconference, applicants will start by doing a pitch of their project concept, followed by Q&A. This is also an opportunity for evaluators to cover any doubts that they may have had about the written application as well as about the commitment and engagement of applicants towards participating. At the end of the meeting, applicants will leave and evaluators will share, compare and revise (if necessary) their scores aiming to have a consensus about respective proposal. Proposals will then be ranked in order of their final evaluation score and the highest-ranking projects will be selected for funding (multiple ranked lists may be produced for the different categories of experiment defined in the call).

For each proposal, Evaluation Committee members present their evaluation results in an ***Individual Evaluation Report (IER)***, explaining the evaluation scores. This process will be followed by a broader group discussion to reach a consensus on review of the individual evaluation reports and agree on comments and scores. The group discussion will be led by the Call Leader who seeks a consensus and ensures that proposals are evaluated in a fairer manner and in line with the established criteria. The consensus-building group discussion will lead to a clearly-written ***Evaluation Summary Report*** including justifications of scores. The Evaluation Committee will prepare a short list with ranked proposals – indicating proposals which will be retained for funding on the respective call. Using the scores given on the consensus forms from the evaluators, Nemesis will, by default, select the highest scoring proposals for the call. However, the consortium is not obliged to select the highest scoring proposal where it has objective grounds for objecting to the participant if, for example commercial competition issues or strategic issues for LL sustainability and maturity become apparent during the evaluation process. In this case the choice may pass, to the next- ranked proposal. The Project Officer will be informed through a specific report.

The total grant requested by the third party will represent up to 100% of the total costs of the project. Checking the consistency between these costs and the expected work of the project will be part of the evaluation process. The detailed cost estimation will be used as criteria to calculate the amount for financial support for each project respecting the defined maximum amount per project for each OC.

In the case of insufficient proposals with adequate quality (indicated by their evaluation scores meeting or exceeding specific pre-defined thresholds), Nemesis consortium might choose to make no selection or select fewer proposals than the cascaded funding budget allows. This conclusion is obligatory if not enough proposals score above the threshold given on the bespoke evaluation form. In the event of the target number of projects not being achieved, Nemesis may take the option to re- open the call at a later date.

1.3 Publication of results and preparation phase

The outcome of the calls will be published without delay and include a description of third-party projects, the date of the award, the duration, and legal name of the third party and country of establishment. All proposals (both successful and unsuccessful) will receive an Evaluation Report for transparency of the funding decision. The process of contract definition and execution will begin immediately after notifying successful proposals. Unsuccessful projects will be invited to become a project stakeholder.

A Funding Agreement will be signed with each third party selected. It will foresee, among other items, the special clauses derived from Horizon Europe in cascading granting, the payment schedule and conditions (milestones with KPIs), general legal issues of rights and obligations by Nemesis and each sub-grantee, including IPR. It will include a set of annexes as: proposal description (form submitted), bank account information form, call guidelines, status information. A team that does not provide its requested data and documents in due time will be excluded. The funding allocation will follow the Horizon Europe financial rules.

In a written report submitted within three weeks of the conclusion of the evaluation, Nemesis will supply the Project Officer with a brief report on the evaluation and selection process, comprising:

- *A report of the call and its evaluation (including e.g. dates of call, publications used, dates of evaluation etc.), and the outcome indicating the selected applicant(s);*
- *A listing of proposals received, identifying the proposing organizations involved (name and address);*
- *The names and affiliations and a brief CV of the experts involved in the evaluation, with contact details (telephone number, email address);*
- *A copy of the signed individual and consensus forms used in the evaluation;*
- *If the applicant selected was not the highest scoring one, the report must record the objective/reasons why the highest scoring one was passed over.*

If a proposal involves ethical issues, it should be described how the ethical issues will be treated during project implementation.

1.4 Start of the projects and monitoring

The projects will start latest four months after publication. The Call Leaders, with the support of P35-EURICE, will:

- monitor project progress according to the milestones defined in the proposals;
- oversee financial reporting and transactions;
- identifying potential problems and taking corrective actions necessary to ensure that the project is within scope, on budget and meets the specified deadlines.

P35-EURICE and the Monitoring Committee will organise supporting activities for the sub-grantees, in the form of e.g. a kick-off meeting and a mid-term review and final meeting after receiving final technical report.

Payments will be made according to a staged payment: (i) Pre-Financing, (ii) Intermediate Payments against proof of specified milestones, and (iii) Final Payment after acceptance of all duties/performance levels and reviews.

- OC#1: up to €100.000 divided in 3 payments (70% in M13 – 15% in M25 – 15% in M47)
- OC#2: up to €150.000 divided in 3 payments (70% in M26 – 15% in M37 – 15% in M45)
- OC#3: up to €5.000 in 2 payments (85% in M25 – 15% in M45)

For the three OCs, the no achievement/compliance or poor development relative to the established milestones for assessing and secure quality following EC standards, will result in stopping the project and payments.

Results obtained in the OCs will be made publicly available under the Creative Commons Attribution 4.0 International License.

2. Description of the three specific Open Calls planned in Nemesis

2.1 OC#1 - Living Labs Networking

Objective

Attracting and engaging systems actors/innovators who develop services benefiting and speeding the establishment of the Nemesis LLs by **expanding the innovation network**.



Target group of applicants: Farmers, farmers' associations, NGOs and community organizations, local communities, Consultant companies, AgTech SMEs, local social media, organic farming associations, consultants and land managers, policymakers, municipalities, precision agriculture SMEs, climate-smart agriculture SMEs, , food processing and distribution companies, environmental advocacy groups, organic and regenerative agriculture practitioners, Forest managers, animal welfare organizations, composting and organic matter recycling industries, feed and forage producers, grazing management consultants, among others (bringing also additional pilot sites and having the capacity for implementing and monitoring ranked co-solutions (T4.1).

Benefit for applicants

Beneficiaries (individual or team projects) will have access to (i) infrastructure, tools and resources; (ii) project and LL events; (iii) experts and key ecosystem stakeholders; and (iv) other use-cases (sharing knowledge and experience).

Quality assessment

A list setting the required standards to enter as a pilot site will be defined and evaluated and levels of maturity to reach by M24, M36 and M46 will also be established and used as progress measurement.

Types of activities that qualify for financial support

Expansion of stakeholder engagement through the project and within the LLs, increasing the number of pilot sites within each LL, enlarging the number of pilot sites to become LHs, enlarging the number of co-solutions tested and the number of practice abstracts produced, raising awareness across a wider and larger audience, enlarging the number of services resulting from LL outcomes, enriching the pool of potential utilizers and users of LLs, enlarging the potential customer base of LLs for post-project sustainability, bringing new insights regarding the needs, problems, and opportunities for local communities, etc.

KPIs: Each LL will incorporate a minimum of 1 additional pilot sites, each possessing the necessary level of maturity in terms of MAP, infrastructure, and impact resulting from ongoing or past projects.

Costs eligible for financial support

- Personnel costs
- Travel costs
- Direct costs

Timeline of project activities

M13 – M46

2.2 OC#2 – LL's Technological Advancement

Objective

Attracting and engaging systems actors/innovators to develop services that can benefit and speedup the establishment of Nemesis LLs by introduction of advanced low-cost technologies.

Target group of applicants: AgTech companies, AgriTech startups, precision agriculture firms, agricultural R&D organizations, soil testing laboratories, irrigation technology companies, environmental monitoring firms, soil-crop-water sensor manufacturers, drone and satellite monitoring companies, soil health diagnostics startups, digital soil monitoring platform developers, remote sensing technology companies, agricultural equipment manufacturers, soil amendment technology companies, research institutes focused on soil science, government agricultural technology agencies, university research labs, agricultural cooperatives providing tech services, soil conservation technology developers, public-private partnerships for AgTech innovation, NGOs specializing in agricultural technology development, livestock grazing management technology providers, AR firms and companies developing augmented reality tools for demonstrations, among others.

Benefit for applicants

Beneficiaries (individual or team projects) will have early access to (i) infrastructure, tools and resources; (ii) experts and key ecosystem stakeholders; (iii) access use-cases to pilot their solutions; and (iv) other use-cases (sharing knowledge and experience).

Quality assessment

Each technology will present an entry TRL and a detailed plan for reaching higher technological maturity within the context of each living lab. On M36 and M44 technologies will be evaluated on their maturity to check for progress.

Types of activities that qualify for financial support

Technological advancement of LLs incorporating affordable, adoptable, and innovative technologies within the LLs for supporting Nemesis objectives. Including open demonstration and training activities within LL ecosystems, while also inviting stakeholders to participate and familiarize themselves with the technologies integrated within the LLs.

KPIs: 12 new technologies with high innovative potential to be actively engaged with Nemesis exploitation activities and at least 3 innovative cost-effective technologies added to different LLs.

Costs eligible for financial support

- Personnel costs

- Travel costs
- Direct costs

Timeline of project activities

Phase I: M20–M23

Phase II: M26 – M44

2.3 OC#3 – Raising Awareness to young people, building on future generations

Objective

Attracting and engaging pupils in schools (from elementary up to high school level) for promoting soil health and combating desertification and inspiring environmental awareness and innovation through school competitions through the school-as-living-lab concept.

Target group of applicants Primary and Secondary Schools, Agricultural Vocational Schools, School Gardening Programs, School Environmental Clubs, among others.

Benefit for applicants

Pupils, by collaborating with the local community and involved organizations will create educational projects and campaigns that raise awareness about soil health. Pupils will engage in real-life projects, where they will develop collaborative skills such as critical and systems thinking.

Quality assessment

All school projects will have to submit the scientific content for Nemesis validation before project implementation. Scientific accuracy will be checked in the produced materials on M36 and M44.

Types of activities that qualify for financial support

Expansion of stakeholders engaged through the project and within the LLs, increasing soil health awareness, and reforming future R&I ecosystems. Organizing school-wide campaigns, including poster competitions, Storytelling and Art Projects, among others.

KPIs: Representation of schools from all LL countries.

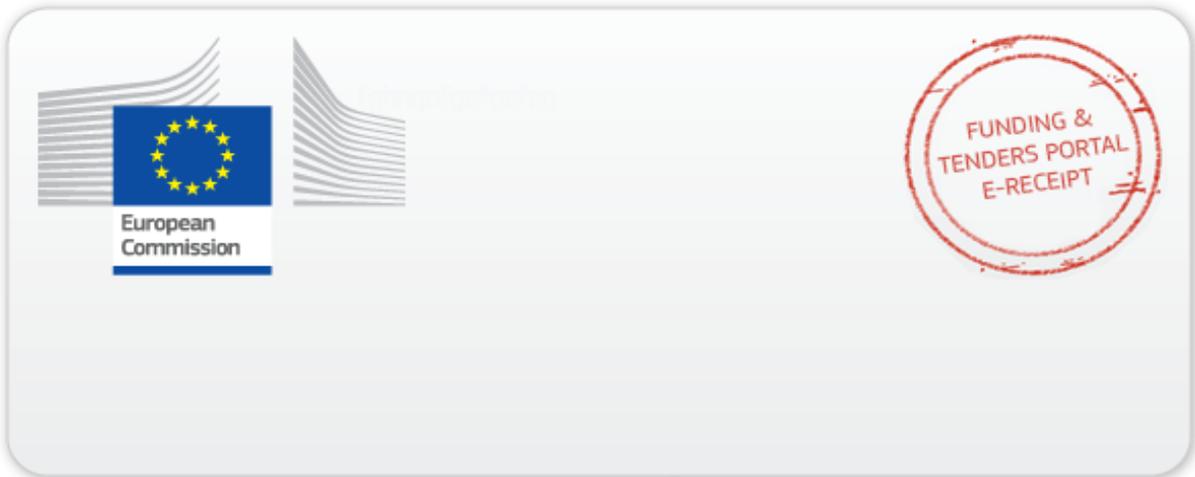
Costs eligible for financial support

- Personnel costs
- Travel costs
- Direct costs

Timeline of project activities

M25 – M44





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