

icosHELLS

D8.5 ICOSHELLS

ETHICAL

GUIDELINES & GAP

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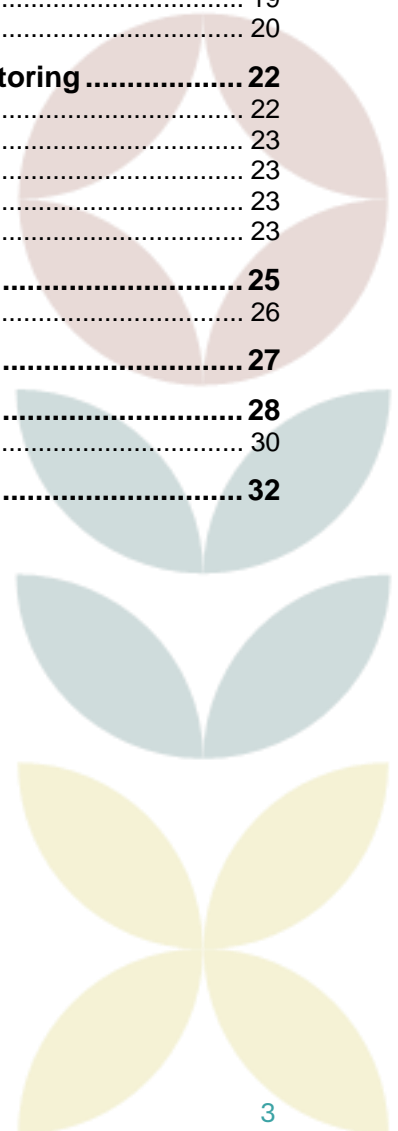
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Executive Summary

This report, [D8.5 – Ethical Guidelines & Gender Action Plan \(GAP\)](#), outlines the ethical framework and gender equality strategy guiding the iCOSHells project. It ensures alignment with the EU Charter of Fundamental Rights, the Horizon Europe Ethics Appraisal Procedure, and the broader mission of the EU initiative “A Soil Deal for Europe.” The iCOSHells project, which spans six Living Labs across diverse European regions, brings together stakeholders from research, governance, land management, and civil society. This diverse consortium and real-world setting necessitate a coherent, inclusive, and adaptive ethics framework that respects local needs while upholding shared values across all participating partners.

The ethical approach taken in this report is grounded in key principles, including respect for human dignity and rights, scientific integrity, environmental responsibility, transparency, and inclusivity. These principles inform the procedures adopted throughout the project, from stakeholder co-creation and data handling to field experimentation and policy engagement. [Additional guidance is provided for the ethical use of AI-enabled decision-support tools, the interpretation of soil health indicators, and the responsible communication of stakeholder data and testimonials.](#) Alongside this, the Gender Action Plan (GAP) promotes gender-balanced participation in leadership and field activities, the use of gender-sensitive language and engagement strategies, and systematic monitoring of gender representation across all project levels. The GAP also supports the collection of sex-disaggregated data, partner compliance with Horizon Europe’s requirement for institutional Gender Equality Plans, and internal awareness-building around unconscious bias and discrimination.

The iCOSHells consortium makes several concrete commitments to uphold these ethical and gender-based principles. These include the continued engagement of an independent Ethics Advisor, the use of informed consent and privacy protocols in all relevant activities, compliance with the General Data Protection Regulation (GDPR), and the provision of ethics and gender training to project partners and Living Lab implementers. In addition, ethics checkpoints will be embedded into the governance of each Work Package and Living Lab, supported by annual reviews and adaptive management processes. [This report also reflects on the ethics of scaling and replication, cross-cultural communication in multilingual stakeholder settings, and the inclusion of traditional knowledge in Living Lab design.](#)

To reinforce these efforts, project partners are encouraged to ensure inclusive stakeholder representation in co-creation events, monitor participation data to identify and address potential barriers to engagement, review internal practices in light of the EU’s zero-tolerance policy on gender-based violence and harassment, and maintain rigorous standards for data anonymization and security. A dedicated feedback mechanism will also be implemented to allow ethical concerns to be raised and addressed promptly throughout the project.

This report guarantees that iCOSHells is not only compliant with the ethical standards outlined in Horizon Europe, but also actively contributes to a culture of responsibility, fairness, and inclusion. It reflects the values enshrined in the [EU Charter of Fundamental Rights](#)¹, particularly with regard to data protection, non-discrimination, and gender equality. It also supports the goals of Mission Soil by promoting participatory research and environmental justice. [The structure of the report reflects these aims, with chapters organised around legal frameworks, implementation mechanisms, mitigation protocols, gender actions, and long-term impact strategies.](#) Through the implementation of this ethical framework and gender strategy, the iCOSHells project is positioned to deliver outcomes that are both scientifically robust and socially responsible.

¹ **European Union.** (2000, December 7). [Charter of Fundamental Rights of the European Union](https://www.europarl.europa.eu/charter/pdf/text_en.pdf). Official Journal of the European Communities, C 364/1. https://www.europarl.europa.eu/charter/pdf/text_en.pdf

1. Introduction

This report, D8.5 – Ethical Guidelines & Gender Action Plan (GAP), presents the ethical foundations and gender equality strategy that will guide the implementation of the iCOSHELLS project. As a large-scale, multi-actor initiative under the Horizon Europe Mission *A Soil Deal for Europe*, iCOSHELLS engages diverse stakeholder groups across six Living Labs (LLs) situated in the Basque Country, Bulgaria, Greece, Italy, Spain, and Sweden. These LLs serve as participatory, real-life experimental environments where researchers, policymakers, farmers, landowners, civil society, and local authorities come together to co-develop innovative solutions for soil health restoration. In such a context, ethical conduct and gender inclusion are not just procedural requirements—they are foundational to the project’s legitimacy, impact, and long-term success.

The purpose of this report is to set out a clear and actionable ethical framework for the consortium, ensuring compliance with the legal, regulatory, and moral obligations outlined in the EU Charter of Fundamental Rights, the Horizon Europe Ethics Appraisal Procedure, and other key European instruments. At the same time, this report defines and operationalizes a Gender Action Plan (GAP) that supports institutional change, inclusive engagement, and equity of opportunity across the project’s lifecycle. Together, the ethical guidelines and GAP represent a transversal strategy—integrated across scientific, governance, and stakeholder-facing activities—to ensure that iCOSHELLS not only adheres to European standards but also becomes a model of responsible, inclusive, and fair innovation.

The scope of this report spans all work packages (WPs), tasks, and activities where ethical diligence and gender sensitivity are required. This includes, but is not limited to, stakeholder mapping and engagement (WP1), Living Lab operations and field trials (WPs 2 and 3), data integration and modelling (WP4), policy and governance interventions (WP5), communication and outreach (WP7), and overall project governance and coordination (WP8). Ethics and gender considerations are central to how iCOSHELLS will manage informed consent procedures, protect personal and sensitive data, monitor participation, ensure equitable access to co-creation opportunities, and foster inclusive decision-making. Special attention is also given to the handling of indigenous or local knowledge, the environmental impacts of field experiments, and the integrity of research involving vulnerable groups or marginalised communities.

This report is developed under Task 8.4 – Ethics Management and Gender Action Plan, which is part of WP8 on Project Management, coordinated by RISE Research Institutes of Sweden. Task 8.4 is responsible for providing strategic oversight of ethical practices within the project, coordinating the activities of the appointed Ethics Advisor, and ensuring that the gender equality framework is implemented, monitored, and adapted throughout the duration of the project.

D8.5 is also designed to complement and align with a number of other reports that serve as foundational documents for the ethical and inclusive governance of the project. These include D8.1 – Project Management Handbook, which outlines the internal structure and decision-making processes of the consortium; D8.2 – Data Management Plan I, which provides detailed guidance on data ethics and FAIR principles; D9.1 – Appointment of External Independent Ethics Advisor, which formalises the project’s ethics oversight mechanism; and a series of subsequent ethics monitoring reports (D9.2–D9.5) that will evaluate the ongoing implementation of the ethical guidelines and gender strategy. Additionally, D1.1 and D1.3 on stakeholder mapping and Living Lab governance, as well as D2.1 on operational procedures at the Living Labs, provide further operational context for the application of ethical and inclusive practices on the ground.

This report forms a core reference point for all project partners and stakeholders, offering not only a compliance roadmap but also a shared vision for ethical excellence, gender-sensitive innovation, and inclusive stakeholder engagement. It supports the creation of a project culture based on transparency, accountability, and co-

responsibility—ensuring that iCOSHELLS contributes meaningfully to the goals of the Soil Mission and the wider objectives of the European Green Deal.

Structure of the Report

To support clarity and usability, this report is structured into six main sections. Section 2 outlines the ethical framework that underpins the project, referencing key European instruments and compliance requirements. Section 3 describes the ethics oversight structure in iCOSHELLS, including roles, responsibilities, and monitoring mechanisms. Section 4 presents mitigation protocols by ethical domain—ranging from informed consent and environmental ethics to AI transparency and data protection—followed by ongoing risk monitoring procedures. Section 5 introduces the Gender Action Plan (GAP), detailing strategic objectives, implementation actions, and monitoring indicators, alongside the consortium’s zero-tolerance policy on gender-based violence and harassment. Section 6 reflects on the ethical and gender impact outlook, including considerations for responsible scaling and long-term societal relevance. Annexes provide supplementary materials, including consent templates and a glossary of terms.



2. Ethical Framework

The ethical foundation of the iCOSHells project is grounded in a set of interrelated European legal instruments, codes of conduct, and programmatic requirements that collectively define responsible research and innovation under Horizon Europe. These frameworks are not only legal obligations but also normative guides for building trust, ensuring fairness, and safeguarding rights in transdisciplinary and multi-actor projects like iCOSHells. As the project unfolds across multiple European regions and involves diverse stakeholders—including landowners, researchers, policymakers, and citizens—the establishment of a robust and responsive ethical framework is essential.

The ethical conduct of the project is first and foremost guided by the Charter of Fundamental Rights of the European Union², particularly Articles 1 (human dignity), 7 (respect for private and family life), 8 (protection of personal data), 21 (non-discrimination), and 23 (equality between women and men). These articles provide a normative baseline that guarantees the protection of individual freedoms, the right to privacy, and the prohibition of discrimination based on sex, race, ethnic origin, religion, disability, age, or sexual orientation. The project is also fully aligned with the Charter's provisions on environmental protection (Article 37), which are particularly relevant in the context of soil health and stakeholder involvement in rural and semi-rural communities.

A central pillar of the ethical framework is compliance with the General Data Protection Regulation (GDPR – Regulation (EU) 2016/679)³, which governs the collection, processing, storage, and dissemination of personal data. iCOSHells, through its stakeholder engagement activities, workshops, surveys, and interviews, collects a range of personal and sometimes sensitive information. All data collection activities are preceded by informed consent procedures, based on clearly written templates (Annex A) that inform participants of their rights, the purpose of the data collection, the duration of storage, and the possibility of withdrawal without consequence. Data are anonymised or pseudonymised where possible and stored securely, following the principles of data minimisation, purpose limitation, and accountability. The consortium has adopted internal data flow mapping procedures and designated responsible data managers within each Living Lab to ensure GDPR compliance across national contexts.

In terms of research integrity, the project adheres to the European Code of Conduct for Research Integrity, jointly issued by ALLEA and the European Commission⁴. The Code emphasizes the principles of reliability, honesty, respect, and accountability in the conduct of research. Within iCOSHells, these principles are operationalised through transparent authorship attribution, the use of shared protocols for data collection and analysis, and the implementation of clear procedures for handling potential conflicts of interest. These protocols also extend to co-created knowledge and stakeholder input, ensuring that all contributions are appropriately recognised, and that ethical attribution is maintained, particularly in the context of traditional or indigenous knowledge systems.

Furthermore, the project complies with the Horizon Europe Ethics Appraisal Procedure⁵, which forms the formal evaluation and monitoring framework for research ethics within EU-funded projects. This includes self-assessment at proposal stage, the appointment of an external ethics advisor, and the submission of periodic ethics reports throughout the project lifecycle. Ethics requirements identified during the proposal phase have been integrated into

² European Union (2012). Charter of Fundamental Rights of the European Union. Official Journal of the European Union, C 326/391. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12012P/TXT>

³ European Union (2016). Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). Official Journal of the European Union, L 119, 1–88. <https://eur-lex.europa.eu/eli/reg/2016/679/oj>

⁴ ALLEA (2023). European Code of Conduct for Research Integrity (Revised ed.). All European Academies. https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/european-code-of-conduct-for-research-integrity_horizon_en.pdf

⁵ European Commission (2021). The ethics appraisal scheme in Horizon Europe [Presentation slides]. Directorate-General for Research and Innovation. <https://erc.europa.eu/manage-your-project/ethics-guidance>

the project's Description of the Action (DoA), including the need for a Gender Action Plan (GAP), procedures for working with human participants, and safeguards for environmental protection.

To ensure the operationalisation of this framework, iCOSHELLS has implemented a set of internal compliance mechanisms. Oversight is provided through **Work Package 9 (WP9) – Ethics Requirements**, which supports the implementation, review, and adaptation of ethical protocols. WP9 is responsible for working closely with the appointed External Independent Ethics Advisor (see D9.1), who provides objective assessments of project activities and advises the consortium on any emerging ethical risks. This oversight mechanism is reinforced through scheduled ethics monitoring reports (D9.2–D9.5), internal check-ins at General Assembly and Steering Committee meetings, and embedded ethics checkpoints in Living Lab operations (WPs 1–3). Ethics considerations are also integrated into the Data Management Plan (D8.2), the Project Management Handbook (D8.1), and are explicitly addressed in risk management and internal quality control mechanisms.

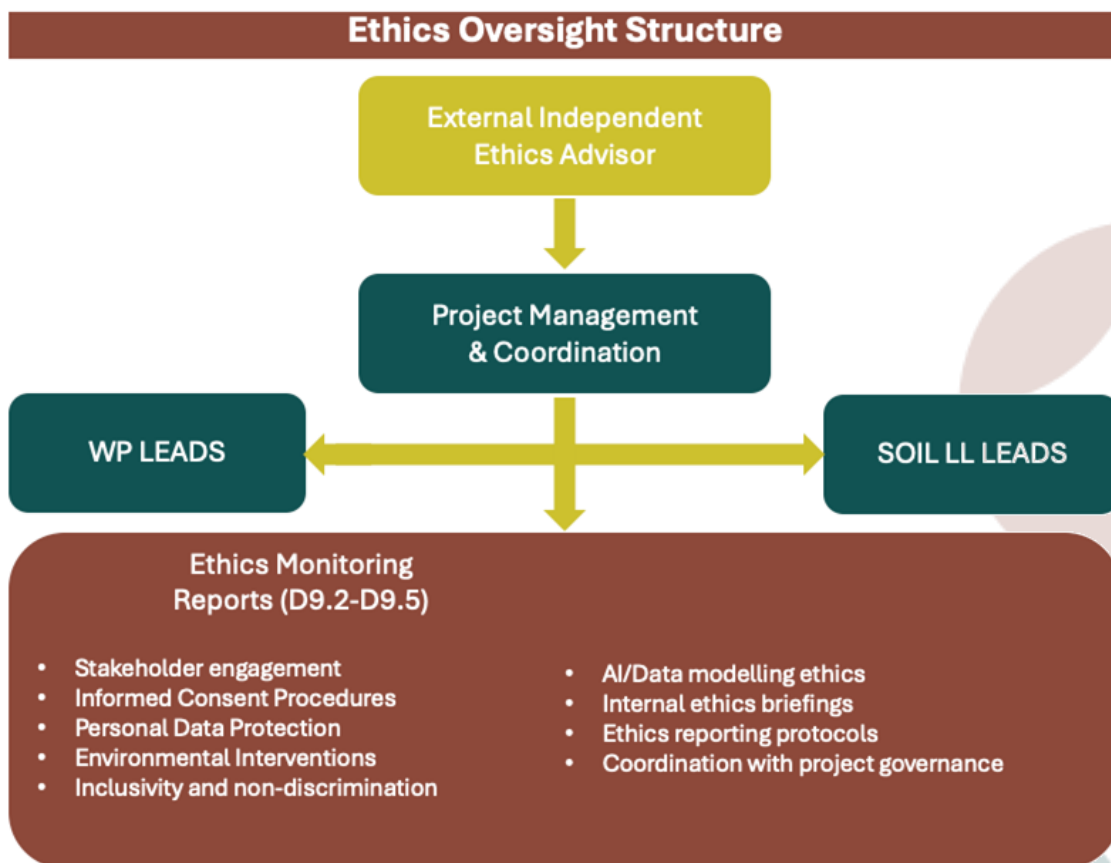
Taken together, these structures ensure that ethics in iCOSHELLS is not treated as a standalone concern but as a cross-cutting dimension that permeates the project's scientific, technical, and social components. Through continuous reflection, stakeholder consultation, and institutional learning, the consortium aims to uphold the highest ethical standards, ensuring both legal compliance and public trust in the solutions developed under the Mission Soil programme.



3. Ethics Oversight Structure

Building on the ethical foundations established in the previous section, the iCOSHELLS project has implemented a structured and operational ethics governance system to ensure that principles such as human dignity, data protection, non-discrimination, and research integrity are upheld in practice. While the ethical framework defines the normative commitments of the project, the ethics oversight structure provides the procedural and institutional mechanisms necessary for translating these commitments into day-to-day project implementation. This section outlines how roles, responsibilities, and reporting lines are organized to support ethical compliance, responsiveness, and learning across all project phases. Figure 1 is a visualization of the Ethics Oversight Structure for iCOSHELLS.

Figure 1. Ethics Oversight Structure of iCOSHELLS



At the centre of this structure is the External Independent Ethics Advisor, appointed in accordance with Horizon Europe requirements and formalized in Deliverable D9.1. The Ethics Advisor serves as a neutral, expert authority on ethics in research and innovation. Their primary role is to monitor the ethical integrity of the project, provide strategic input on emerging issues, and offer guidance to the consortium when adjustments or additional safeguards are needed. The advisor participates in key project meetings, reviews stakeholder-facing materials and selected deliverables, and prepares an annual series of ethics monitoring reports (D9.2–D9.5), which assess ethics-related risks and recommend corrective actions. These reports focus on high-priority areas such as stakeholder engagement, environmental interventions, data handling, and inclusive governance, especially as they unfold within the Living Labs.

The Project Coordinator (RISE) plays a key coordinating role in ensuring that ethics is embedded in both the technical and managerial dimensions of the project. In collaboration with the Ethics Advisor, the coordinator facilitates ethics-related dialogue across the consortium, integrates ethics topics into General Assembly and Steering Committee discussions, and ensures alignment between ethics oversight and broader project risk management. Ethics is treated as a recurring item in governance meetings and is closely linked to the internal quality assurance framework outlined in the Project Management Handbook (D8.1).

Implementation at the work package level is driven by WP leaders, who are responsible for integrating ethical considerations into the planning, design, and delivery of project activities. In WPs involving human participants, data collection, or potential environmental impacts—such as WPs 1, 2, 3, and 5—WP leaders are expected to proactively coordinate with site-specific data managers and Living Lab leads. These actors ensure that informed consent protocols are followed, GDPR requirements are met, and stakeholder engagement is conducted in a culturally appropriate, transparent, and inclusive manner. Data managers are also responsible for maintaining documentation of data flows, managing pseudonymization processes, and addressing data security risks, as detailed in Deliverable D8.2 (Data Management Plan I).

Ethics oversight is supported by a formal reporting structure, beginning with the initial appointment of the Ethics Advisor (D9.1) and continuing with periodic assessments (D9.2–D9.5), submitted approximately annually. These reports allow the consortium to monitor ethical developments over time, adapt protocols as needed, and document the project's commitment to responsible research practices. In addition to formal deliverables, the consortium maintains a flexible reporting approach, allowing for ad hoc ethics consultations in response to unexpected challenges or methodological changes.

The project also employs internal procedures to operationalize ethics oversight in practice. These include standardized templates for informed consent, review of engagement materials by WP leads and the Ethics Advisor, internal ethics briefings during key phases of the project, and traceable decision logs in ethics-sensitive contexts. These tools are aligned with the broader project governance framework and risk mitigation strategies, ensuring consistency between ethical compliance and the overall management of scientific quality and stakeholder interaction.

In synopsis, the subject of ethics in iCOSHELLS is viewed not as a static obligation but as an evolving, reflexive process of governance. Through a combination of expert advisory support, distributed accountability, and routine monitoring, the project ensures that ethical values are continuously integrated into research and innovation activities. This ethics oversight structure enhances the project's capacity for learning, responsiveness, and trust-building across all stakeholder groups, while reinforcing the commitments outlined in the project's legal and regulatory foundation.



4. Ethical Risk Assessment and Management

Ethical risk management in iCOSHells is a continuous, evidence-based process integrated into stakeholder engagement, data governance, environmental action, and project-wide learning. Building on the foundational framework and oversight structure detailed in earlier sections, this part of the deliverable identifies key ethical risk areas and describes how mitigation procedures have been embedded in the project's operational logic. The following risks have been identified based on early-phase activities, including stakeholder mapping (D1.1), Living Lab governance design (D1.3), and site-level operational planning (D2.1).

4.1 Overview of Identified Ethical Risks

Based on the initial planning phase and early deliverables—including stakeholder mapping (D1.1), Living Lab governance and co-creation strategy (D1.3), and operational site frameworks (D2.1)—four principal categories of ethical risk have been identified:

Human Participation Risks

Co-creation in Living Labs involves direct interaction with landowners, farmers, local government representatives, and citizens. Risks include insufficient informed consent, unbalanced stakeholder representation, or unintended coercion—particularly in rural or underrepresented communities where power asymmetries may be present. Participants may feel pressured to engage due to institutional affiliations, funding incentives, or local social dynamics.

As described in D1.3, the iCOSHells Living Labs involve a wide range of stakeholders—from individual farmers and landowners to municipal officers and regional policymakers. These actors engage in co-design, fieldwork, and evaluation processes. Ethical risks arise from potential power asymmetries, limited understanding of research roles, or implicit pressure to participate in project activities. D1.1's stakeholder mapping confirms diversity in participant status, influence, and familiarity with innovation processes, especially in rural or structurally disadvantaged regions. These dynamics pose challenges to voluntary, informed participation and equitable co-creation, particularly where there may be social or institutional pressure to conform.

Environmental Concerns

Field trials and demonstration activities involve direct intervention in the soil environment. Ethical risks include potential disruption to biodiversity, degradation of already vulnerable soil ecosystems, or unintended negative consequences from tested practices. These concerns are particularly relevant where long-term soil regeneration is the project's stated goal, and interventions must therefore follow the principle of precaution and non-maleficence.

D2.1 outlines a site-specific operational plan for each Living Lab, including crop rotation, tillage practices, and inputs to be tested. While these interventions aim to improve soil health, risks include over-disturbance of fragile ecosystems or introduction of practices that may not be appropriate in all local contexts. D3.1, the Catalogue of Soil Indicators, provides baselines against which any degradation or deviation from sustainable trajectories can be monitored. In particular, indicators such as soil organic matter (SOM), microbial activity, and biodiversity provide safeguards to ensure environmental ethics are respected.

AI and Data-Driven Methods

The use of sensor-based monitoring, data modelling, and AI-driven decision-support systems (e.g., for soil condition analysis or impact forecasting) presents specific risks, including algorithmic bias, lack of transparency in decision pathways, or over-reliance on models without adequate stakeholder validation. These risks can compromise trust in digital tools, especially when used in public-facing or co-creative decision-making processes.

While advanced modelling is still in early development under WP4 and WP5, the anticipated use of AI-enabled tools for soil monitoring and prediction (e.g. sensors, data fusion, scenario modelling) introduces potential ethical risks. These include lack of transparency in algorithms, dependence on model outputs without community validation, or unintentional bias in training datasets. Although current deliverables do not yet detail modelling architectures, D1.3 identifies the importance of “reciprocal validation” in co-creation workflows—emphasizing that any digital tool must remain accountable to both scientific rigor and stakeholder interpretation.

Personal Data and Privacy

Stakeholder engagement across the Living Labs includes the collection of personal and potentially sensitive data—names, affiliations, geolocation data, photographs, workshop contributions, and interview transcripts. Risks include breaches of confidentiality, misrepresentation of consent, and lack of clarity regarding data use, storage duration, and rights to withdrawal. This is especially sensitive in small communities where individuals are easily identifiable.

Engagement activities such as interviews, surveys, and co-creation workshops necessarily involve the processing of personal data, some of which may be sensitive or identifiable. D8.2 – Data Management Plan I provides a clear protocol for data flow mapping, with each Living Lab appointing a site-specific data manager responsible for GDPR compliance. These managers oversee pseudonymization, secure storage, access control, and withdrawal mechanisms. The informed consent templates included in D8.2 specify data use, storage duration, re-use conditions, and participants’ right to revoke consent. Given the small population sizes in some Living Labs, even minimal data points could lead to re-identification—making data minimization and role-based access especially important.

4.2 Mitigation Protocols by Ethical Domain

To proactively address these risks, iCOSHells has established mitigation protocols embedded in governance (WP1), operations (WP2), data management (WP8), and ethics monitoring (WP9). These are supported by the guidance of the appointed Ethics Advisor and informed by lessons from previous EU projects.

Informed Consent and Stakeholder Safeguards

All stakeholder participation in the iCOSHells project is governed by a structured and context-sensitive informed consent process, ensuring that ethical engagement is upheld across all Living Labs. This process draws on standardized consent templates provided in Deliverable D1.3 which have been adapted for each site’s linguistic, legal, and cultural context. Consent forms are made available in local languages, written in accessible, non-technical language, and include clear explanations of participants' rights, the scope and purpose of data collection, data handling procedures, withdrawal options, and the non-commercial nature of the engagement.

Deliverables D1.3 and D2.1 further detail the operational and ethical protocols that support informed participation, particularly in settings where stakeholder roles vary significantly across governance levels. D1.3 outlines the participatory ethics framework developed through the Train-the-Trainer (3ToT) process, which provides guidance for equitable engagement, ethical facilitation, and avoidance of coercion during co-creation activities. Special attention is given to mitigating risks related to local power structures, varying literacy levels, and differing levels of familiarity with research processes. Stakeholder engagement facilitators are trained to recognise these dynamics

and apply inclusive practices that promote voluntary, respectful, and informed participation. This layered approach ensures that all individuals engaged in the project are empowered to make clear, autonomous decisions regarding their involvement, while supporting transparency and accountability throughout the Living Lab methodology.

Environmental Ethics and Field Trials

All field activities conducted within the iCOSHELLS Living Labs are guided by a precautionary and ethically grounded approach to environmental impact. As outlined in Deliverable D2.1 (Task 2.2), Living Lab leads are required to conduct environmental risk assessments prior to initiating any intervention, such as tillage trials, compost application, or soil restoration techniques. These interventions follow a minimum-impact protocol, designed to prevent degradation and ensure alignment with local ecological conditions.

To support this, each site assesses environmental sensitivity based on existing soil status and biodiversity indicators, referencing the baseline metrics defined in D3.1 – *Catalogue of Soil Indicators*. Actions identified as having potential environmental risk must be preceded by site-specific monitoring, and any observed deviations from expected outcomes must be logged internally for ethical review. Data on soil disturbance and regeneration are collected throughout the trials, forming part of both the scientific evaluation and the ethics monitoring cycle.

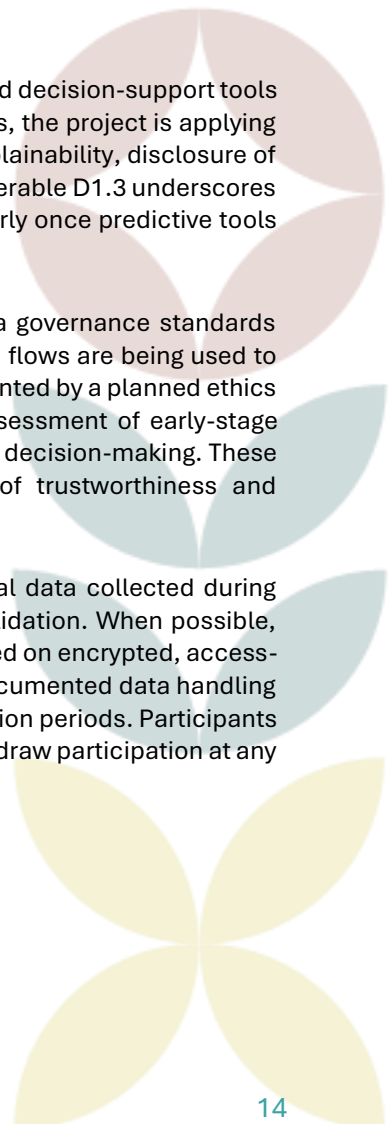
Ethical oversight of these activities is embedded at two levels: internally by the Living Lab teams themselves, and externally by the appointed Ethics Advisor, who reviews selected interventions where ecological risk may be present. This layered system ensures that field trials contribute positively to long-term soil recovery while adhering to principles of environmental stewardship and sustainability central to the goals of Mission Soil.

AI Ethics and Transparency Measures

Although full-scale AI deployment is not yet active in iCOSHELLS, preliminary modelling and decision-support tools are currently being developed under WP4 and WP5. In anticipation of these developments, the project is applying ethics-by-design principles from the outset. These include requirements for algorithm explainability, disclosure of modelling assumptions, and validation of outputs through stakeholder engagement. Deliverable D1.3 underscores the importance of algorithmic transparency and participatory co-interpretation, particularly once predictive tools are introduced in the Living Lab contexts.

To support these objectives, iCOSHELLS aligns its digital ethics approach with the data governance standards outlined in D8.2 – *Data Management Plan I*. Metadata documentation and traceable data flows are being used to ensure that model inputs and outputs are transparent and reproducible. This is complemented by a planned ethics review process, wherein the External Ethics Advisor will conduct a pre-deployment assessment of early-stage modelling tools to identify ethical risks and support responsible integration into site-level decision-making. These reviews will ensure that digital tools meet both scientific and societal standards of trustworthiness and accountability.

Additionally, D8.2 specifies robust data protection procedures that apply to all personal data collected during stakeholder engagement, some of which may inform model calibration or contextual validation. When possible, data are pseudonymized at the point of collection, and any identifiable information is stored on encrypted, access-restricted servers hosted by each partner institution. Each Living Lab operates under a documented data handling workflow, including encryption during transmission, audit trails, and clearly defined retention periods. Participants are informed of these protections through the consent process, and retain the right to withdraw participation at any time, ensuring ethical use of data throughout the modelling and innovation pipeline.



Personal Data Handling and GDPR Compliance

Personal data handling in iCOSHELLS is governed by the protocols outlined in Deliverable D8.2 – Data Management Plan I, ensuring full compliance with the General Data Protection Regulation (GDPR). Each Living Lab has appointed a site-specific data manager who is responsible for overseeing GDPR compliance, including documentation of data flows, access control, data retention, and the secure storage of stakeholder information.

To complement the data governance provisions already described in the AI Ethics and Transparency Measures section, it is important to note that D8.2 provides additional guidance specific to personal data protection during stakeholder engagement. This includes detailed consent procedures, participant rights to revoke data, and legal basis for processing under Article 6 of the GDPR. Data managers ensure that these procedures are implemented at the site level and adapted to national legal requirements.

While metadata and transparency practices support ethical modelling processes, as discussed in WP4 and WP5, the personal data used in interviews, co-creation sessions, and workshop registrations are treated with additional layers of protection. Participants are informed of the nature and purpose of data processing via consent forms tailored to local contexts. These forms clarify withdrawal mechanisms and non-commercial use of data, reinforcing participant autonomy and transparency.

Ongoing Monitoring and Risk Updates

Ethical risk monitoring in iCOSHELLS is structured as an iterative and participatory process, ensuring that potential issues are identified and addressed in real time as the project evolves. The central mechanism for formal oversight is the annual ethics monitoring report produced by the External Ethics Advisor, beginning with Deliverable D9.2. These reports assess emerging risks across domains such as stakeholder engagement, data handling, environmental interventions, and inclusion, and provide actionable recommendations for mitigation and improvement.

In parallel with formal reporting, Work Package (WP) leads, and Living Lab (LL) coordinators are encouraged to surface ethical concerns on an ongoing basis. Regular opportunities for discussion are built into the project's biannual consortium meetings, where risk updates can be shared across work streams and escalated to the Steering Committee or General Assembly if needed. Data managers contribute field-level insights, particularly in relation to GDPR compliance and consent processes, helping to ensure consistency and responsiveness across sites.

Participant feedback is another integral part of the monitoring system. Insights gathered through surveys, informal reflections, and structured debriefs—particularly within Living Lab activities—are used to identify blind spots or concerns that may not be captured through formal reporting. This bottom-up feedback loop is essential for maintaining trust, improving engagement methods, and refining co-creation protocols.

Where necessary, ethics advisories or mid-cycle mitigation actions may be issued by the Ethics Advisor in response to new risks or procedural deviations. These are logged and tracked within the project's internal quality assurance system, with follow-up actions assigned to relevant WP or LL leads. The table below provides a summary of *Ongoing Monitoring and Risk Updates*.

Table 1. Summary of ongoing and monitoring and risk updates for iCOSHELLS

Component	Description	Responsible Actors	Related Deliverables / Structures
Annual Ethics Monitoring Reports	Formal review of emerging ethical risks and recommendations for mitigation.	External Ethics Advisor	D9.2–D9.5
Ongoing Risk Reporting	Continuous reporting of risks by WP and LL leads during project meetings.	WP Leads, LL Coordinators	Steering Committee, General Assembly
Data Protection Feedback	Updates on GDPR compliance, consent processes, and site-level data handling practices.	Data Managers	D8.2 – Data Management Plan I
Participant Feedback Mechanisms	Collection of ethical concerns and engagement issues via surveys, interviews, and debriefs.	LL Facilitators, WP Leads	D1.3 – LL Governance and 3ToT
Ethics Advisories / Mid-Cycle Alerts	Issued in response to unexpected risks or procedural deviations; tracked through internal QA.	Ethics Advisor, Project Coordinator	D8.1 – Project Management Handbook
Internal Ethics Documentation	Logs and documentation of risk events, decisions, and follow-up actions.	WP/LL Leads, Ethics Advisor	Internal QA System
Adaptive Governance Loop	Integration of ethics monitoring into decision-making and project planning cycles.	Project Coordinator, Steering Committee	WP8 – Project Management

4.3 Procedures for Handling Ethics Breaches or Complaints

The iCOSHELLS consortium has established a clear and confidential procedure for addressing any ethics-related breaches, concerns, or complaints that may arise during the course of the project. This procedure is designed to ensure that ethical violations—whether related to stakeholder engagement, data misuse, gender-based discrimination, or environmental misconduct—are addressed promptly, fairly, and transparently.

The protocol builds on the governance framework outlined in **D8.1 – Project Management Handbook** and is integrated into the quality assurance and risk management structure of the project. It operates in coordination with the Ethics Oversight Mechanism described in Section 4 of this deliverable.

Key Steps in the Ethics Compliant Handling Process

- 1. Initial Reporting**
Any consortium member, stakeholder, or third-party participant may report an ethics concern or complaint to their respective WP Lead, the Project Coordinator (RISE), or directly to the External Ethics Advisor. Reports may be submitted verbally or in writing and may be anonymous if desired.
- 2. Confidential Acknowledgement and Documentation**
The recipient of the complaint (e.g., WP lead or Ethics Advisor) must acknowledge the report within five working days and initiate confidential documentation of the concern. The Ethics Advisor will log the incident in the internal ethics oversight record.
- 3. Triage and Preliminary Review**
The Ethics Advisor, in consultation with the Project Coordinator and relevant WP lead, will assess the nature and severity of the complaint. This triage process determines whether the matter should be handled within the project framework or referred to institutional mechanisms (e.g., HR, data protection officers).

4. **Investigation and Resolution**

Where appropriate, the Ethics Advisor will lead a fact-finding process, which may involve interviews, document reviews, or consultations with involved parties. Outcomes may include corrective actions, procedural changes, referral to institutional procedures, or formal ethics advisories issued to the consortium.

5. **Follow-up and Monitoring**

A resolution summary will be prepared and shared with the Project Technical Committee and, if necessary, the General Assembly. The implementation of recommended actions will be tracked through regular ethics updates (e.g., D9.2–D9.5) and project meetings.

6. **Protection from Retaliation**

All parties are protected from retaliation when raising an ethics concern in good faith. Any attempt to intimidate or retaliate against whistleblowers will be treated as a separate ethical violation.

This procedure ensures that ethics is not only proactively managed but also **reactively addressed**, with robust mechanisms for learning and accountability. A summary version of this protocol is included in the internal management annex of D8.1 and will be referenced in all stakeholder-facing engagement protocols.

Table 2. iCOSHells Ethics Breach and Complaint Handling Procedure

Step	Action	Responsible Parties	Timeframe
1. Initial Reporting	Ethics concern is reported verbally or in writing (can be anonymous).	Any participant, WP Lead, Ethics Advisor, RISE	Immediate / ongoing
2. Acknowledgement	Receipt of complaint is acknowledged; concern is logged confidentially.	Ethics Advisor or Project Coordinator	Within 5 working days
3. Triage and Review	Nature of complaint assessed; decision on internal or institutional handling.	Ethics Advisor, WP Lead, Project Coordinator	Within 10 working days
4. Investigation	Fact-finding process initiated; evidence gathered, and actions proposed.	Ethics Advisor (lead), relevant WP / LL leads	Case-dependent
5. Resolution & Reporting	Resolution summary prepared; actions communicated and tracked.	Ethics Advisor, Project Technical Committee	At next project meeting
6. Follow-up Monitoring	Implementation of actions is monitored; updates included in ethics reporting (D9.2–D9.5).	WP Leads, Ethics Advisor, Coordinator	Ongoing throughout project
7. Anti-Retaliation	All reports made in good faith are protected; retaliation constitutes a further violation.	All partners and stakeholders	Continuous policy

4.4 Co-Creation Ethics in Field Research

The iCOSHells project places co-creation at the heart of its research and governance strategy, particularly through the operation of its Living Labs across diverse European regions. While Deliverable D1.3 outlines the governance model and roles for participatory engagement, and D8.2 details data governance protocols, this section expands on the ethical principles that underpin co-creation in field-based research environments.

Co-creation in this context refers to the collaborative development of knowledge, tools, and practices between researchers, landowners, public authorities, civil society actors, and other stakeholders. It requires careful attention to the balance of power, knowledge ownership, and long-term value sharing. Ethical co-creation means more than securing stakeholder participation—it ensures that engagement is meaningful, respectful, and beneficial to all involved.

Avoiding Extractive Practices

To avoid extractive relationships, where stakeholder knowledge is used without reciprocation, co-creation processes in iCOSHells are designed to be iterative and inclusive. The Living Lab methodology supports full-cycle involvement—ranging from problem definition and data collection to evaluation and dissemination. Deliverable D1.3 provides the participatory ethics protocol developed through the Train-the-Trainer (3ToT) approach to support this commitment.

Ensuring Local Value and Mutual Benefit

It is critical that stakeholders—especially those with long-standing knowledge of local ecological and agricultural systems—see value in the outputs produced. Co-created outputs, such as soil health indicators, land use models, or decision-support tools, must be communicated in accessible formats and integrated with local objectives. WP1 and WP2 activities emphasise mutual benefit and site-relevant outcomes to reinforce legitimacy and uptake.

Joint Decision-Making and Validation

Ethics in co-creation also includes the right to influence how outcomes are interpreted and used. Living Lab facilitators work to ensure that stakeholder contributions are recognised not only at the point of collection but also in the interpretation and application of results. This supports a broader ethic of epistemic justice, where scientific, experiential, and local knowledge systems are valued equally.

Handling Traditional and Local Knowledge with Care

The use of traditional or indigenous knowledge within Living Labs necessitates particular ethical sensitivity. Attribution, consent, and recognition are critical to maintaining trust. iCOSHells uses adapted consent procedures where appropriate, and data managers are instructed to ensure that GDPR compliance is carried out with cultural appropriateness. Project outputs that incorporate such knowledge must clearly reference their sources and provide attribution consistent with the expectations of contributing communities.

4.5 Cross-Cultural Ethics and Language

The iCOSHells project operates across a geographically and culturally diverse set of Living Labs (LLs), each embedded in distinct linguistic, social, and institutional contexts. While the project's ethics framework (Section 4.2) establishes baseline principles of informed consent, data protection, and research integrity, the **cross-cultural dimension of ethical practice** requires specific attention.

Deliverables such as D1.3 and D2.1 describe the participatory and multi-actor approach taken within Living Labs. However, the **translation of ethical principles into operational practice**—particularly in multilingual and multicultural field settings—demands a nuanced approach. Ethics is not only a matter of regulatory compliance, but also one of **cultural literacy, communicative clarity, and mutual respect**.

Translation Ethics

All consent materials used in stakeholder engagements must be adapted to **local language(s)** and **literacy levels** to ensure meaningful understanding. This includes not only direct translation of forms, but also **cultural adaptation** of content to reflect local expectations, power structures, and common understandings of terms such as “participation,” “data sharing,” or “withdrawal rights.” In contexts where **minoritized or regional languages** are spoken, additional translation steps may be required to avoid defaulting to national languages that may marginalize local participants.

Living Lab facilitators and WP leads are encouraged to **pre-test consent forms** and engagement materials with local actors and revise them accordingly. This is especially relevant in regions with recent migration histories, rural dialects, or low levels of familiarity with research practices.

Cultural Norms and Participation

Cultural norms shape not only what stakeholders say but also how they participate. In some contexts, hierarchical deference to authority or gendered roles in community decision-making may constrain open dialogue. In others, informal knowledge sharing may take precedence over written consent processes.

To ethically engage in such contexts, iCOSHells relies on trained facilitators who are sensitive to **local power dynamics, communication styles, and culturally appropriate forms of participation**. Ethics check-ins during Living Lab phases (outlined in D2.1) are used to flag emerging issues, such as silence from particular demographic groups, lack of engagement from traditionally marginalised actors, or conflicts over representation.

The integration of **cross-cultural ethics** is not a peripheral issue, but a central requirement for maintaining trust, inclusivity, and relevance across the project's field sites. Language, culture, and ethics intersect in complex ways—and addressing them directly strengthens both the **scientific robustness** and **social legitimacy** of the project.

4.6 Ethics of Communication and Dissemination

While the iCOSHells ethics framework includes strong protections for personal data and informed consent, the **ethical dimensions of public communication and dissemination activities** also warrant explicit attention. These dimensions are particularly relevant given the project's emphasis on participatory engagement and the visibility of stakeholder involvement across multiple Living Labs (LLs).

As outlined in Deliverables D7.1 (Communication, Dissemination and Exploitation Plan) and D7.5 (Project Website and Communication Materials), the project aims to promote transparency, stakeholder visibility, and science–society dialogue. However, the public sharing of images, testimonials, quotes, and narratives from LL participants introduces ethical responsibilities that go beyond standard GDPR compliance.

To ensure responsible and respectful dissemination, iCOSHells partners adhere to the following ethical communication principles:

- **Consent for Communication Purposes:** Any use of stakeholder photographs, direct quotes, or identifiable information in communication materials—such as on the project website, social media, brochures, or presentations—requires separate, **explicit consent** beyond general participation consent. Consent forms used during workshops or interviews include a distinct clause for this purpose, and participants are free to opt out without affecting their involvement in other project activities.
- **Respectful Representation:** Particular care is taken to avoid **stereotyping, tokenism, or oversimplification** of rural, traditional, or minoritized communities. This is especially relevant in Living Labs where land use practices, cultural heritage, or marginalised voices are being highlighted. Materials are reviewed internally by WP7 leads and, when appropriate, by the Ethics Advisor prior to publication.
- **Contextual Integrity:** Visual and narrative content must be accompanied by sufficient context to avoid misrepresentation. For example, images of degraded soils should be explained in relation to local ecological conditions, not framed as failures of landowners. Testimonials are framed within the co-creation narrative, acknowledging limitations, plural perspectives, and the collaborative nature of findings.
- **Reciprocal Visibility and Recognition:** LL stakeholders featured in communication outputs are informed of where and how the material will be shared. Where feasible, they are invited to co-review or validate the final product. In line with the project's commitment to co-creation, community contributors are acknowledged in public outputs and credited where appropriate.

By embedding these principles into WP7 activities, iCOSHELLS strengthens the integrity of its outreach while protecting the dignity, privacy, and narrative ownership of its stakeholders.

4.7 Ethical Use of Soil Health Indicators

The selection, measurement, and interpretation of soil health indicators are central to guiding land-use decisions in iCOSHELLS. As such, the process is not purely technical, but also ethical in nature—affecting livelihoods, access to ecosystem services, and long-term environmental stewardship. This section reflects on the **ethical dimensions** of indicator use across Living Labs (LLs), building on the foundations in D3.1 and D1.1.

Transparency in Indicator Selection

The indicators proposed in D3.1 were selected based on scientific robustness, sensitivity, cost-effectiveness, and relevance to soil functions such as fertility, water retention, carbon sequestration, and biological activity. However, transparency in this process is vital. All LLs were engaged in co-developing these indicators, ensuring that local ecological and agricultural realities were reflected. Ongoing stakeholder feedback loops (via WP2) support continued refinement.

Cultural and Stakeholder Inclusion

In iCOSHELLS, several Living Labs—such as those in the Basque Country and Italy—have proactively integrated local and traditional ecological knowledge alongside scientific methodologies. For instance, practices such as long-standing composting traditions, land rotation cycles, sensory soil assessments, or vernacular indicators of soil quality (e.g., colour, smell, moisture retention) are being documented and used to inform the selection or contextual interpretation of bioassays, sensor data, and remote sensing outputs.

This inclusive approach serves multiple purposes:

- **Enhances relevance and legitimacy** of scientific indicators by grounding them in local understanding.
- **Fosters trust and ownership** among stakeholders who see their knowledge reflected in project outputs.
- **Strengthens co-learning**, where scientific and lay knowledge interact to produce more holistic models of soil health.

To operationalise cultural and stakeholder inclusion in indicator development and use, the following practices are encouraged across all LLs:

1. **Participatory Indicator Framing:** Engage stakeholders in early-stage workshops to identify what “soil health” means to them and how it should be measured. These insights inform indicator selection, prioritisation, and communication.
2. **Ethical Attribution Protocols:** Ensure that any traditional or experiential knowledge used in defining or interpreting indicators is appropriately acknowledged, respecting intellectual property and cultural sensitivity. This can be supported through Living Lab consent forms and WP-level documentation logs.
3. **Dual Validation Approaches:** Allow for side-by-side comparison of conventional scientific metrics with local observations. For instance, a lab-measured microbial activity rate may be accompanied by a local farmer’s evaluation of soil tilth or vegetative vigor.
4. **Translation and Access:** Ensure indicator results and methodologies are shared in local languages and accessible formats. This strengthens stakeholders’ ability to act on the data and reinforces a sense of shared authority over its use.
5. **Feedback Loops and Iterative Learning:** Use annual cycles of Living Lab engagement to revisit indicators, challenge assumptions, and adapt the metrics based on new knowledge or emerging concerns. This fosters a living ethics model that evolves with community input.

Table 3 illustrates how these practices are embedded in iCOSHells. These measures ensure that its soil health indicators do not merely serve as abstract metrics but become tools for inclusive governance, knowledge democracy, and local empowerment. Such an approach is especially important in regions with strong agricultural identities, historical land use practices, or minority cultural communities whose knowledge may otherwise be marginalised in mainstream environmental governance.

Table 3. Operationalised Practices for Cultural and Stakeholder Inclusion in Soil Health Indicators

Practice	Evidence from iCOSHells	Relevant Deliverable
Participatory Indicator Framing	Stakeholders are engaged in early-stage co-creation within Living Labs, where their input helps define soil health indicators tailored to local needs and understandings.	D1.3 – Living Lab Governance Framework
Ethical Attribution Protocols	Consent procedures and documentation templates support proper recognition of local and traditional knowledge in data collection and reporting processes.	D2.1 – LL Operational Structure
Dual Validation Approaches	Living Labs are encouraged to compare scientific soil data with stakeholder insights (e.g., farmer evaluations of soil conditions) to support co-validation.	D1.3 – Living Lab Governance Framework
Translation and Access	Stakeholder engagement strategies include adapting information to local languages and literacy levels to improve accessibility and understanding.	D2.1 – LL Operational Structure
Feedback Loops and Iterative Learning	The Living Lab methodology includes reflexive monitoring and feedback mechanisms that allow indicators and engagement processes to be revised in response to stakeholder input.	D2.1 – LL Operational Structure

Data Ethics and Interpretation Risks

As indicators guide interventions (e.g., regenerative practices, land restoration), it is important to avoid reductionist interpretations that may overemphasize measurable parameters (e.g., carbon content) at the expense of equally important but less quantifiable values, such as biodiversity or equitable access to land. Trade-offs—such as prioritizing carbon sequestration over soil biodiversity or community land uses—must be surfaced and debated transparently.

Procedural Fairness

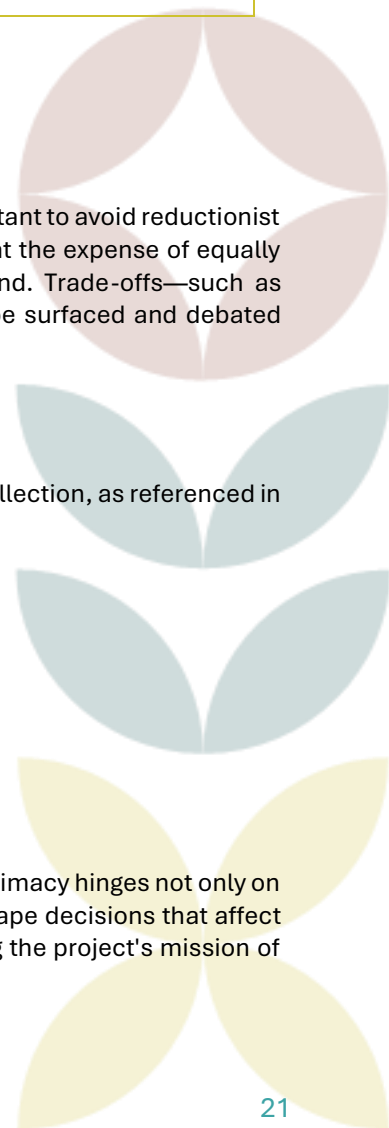
Each LL implements a **standard operating procedure (SOP)** for soil sampling and data collection, as referenced in Task 3.2.2 and supported by centralized infrastructure (e.g., the Web Application of D3.3)

To ensure procedural fairness, indicators must be:

- Measured consistently across sites
- Reported with disaggregated data where relevant
- Reviewed periodically for local contextual accuracy

Summary

In conclusion, soil health indicators are both a technical and ethical instrument. Their legitimacy hinges not only on their scientific rigor but also on **how they are selected, contextualized, and used** to shape decisions that affect people and landscapes. Ethical governance of these indicators is thus critical to fulfilling the project's mission of sustainable, inclusive soil stewardship.



5. Gender Action Plan (GAP): Commitments, Implementation, and Monitoring

The iCOSHells Gender Action Plan (GAP) is designed to ensure that principles of gender equality and inclusivity are systematically integrated into the project's research activities, governance structures, stakeholder engagement practices, and data collection methods. Developed under Task 8.4, the GAP complements the ethical framework described in previous sections and reinforces the project's commitment to equity, diversity, and inclusion in alignment with Horizon Europe requirements and the EU Gender Equality Strategy 2020–2025⁶.

5.1 Strategic Context and Objectives

Gender equality is a cross-cutting priority under Horizon Europe and a formal eligibility requirement for participation in EU-funded research projects. All iCOSHells partners from EU Member States and Associated Countries are required to have institutional Gender Equality Plans (GEPs) in place. The iCOSHells GAP builds on these institutional commitments by outlining specific actions and monitoring mechanisms to promote gender equity within the consortium.

The GAP supports the following strategic objectives:

- Ensure gender-balanced participation in project leadership, decision-making bodies, and field-level implementation teams.
- Promote the use of gender-sensitive language and inclusive communication across all project materials and outputs.
- Collect and analyse sex-disaggregated data, where applicable, to monitor participation patterns and inform evaluation.
- Foster awareness of gender bias, discrimination, and stereotyping through internal briefings, guidelines, and the Living Lab Train-the-Trainer (3ToT) processes.
- Align project governance and reporting with the principles of non-discrimination (Article 21) and gender equality (Article 23) of the EU Charter of Fundamental Rights⁷.

⁶ European Commission. (2020). EU gender equality strategy 2020–2025. <https://ec.europa.eu/newsroom/just/items/682425/en>

⁷ Charter of Fundamental Rights of the European Union (Official Journal of the European Union, C 326, 26/10/2012)

- **Article 21 – Non-discrimination**

Any discrimination based on any ground such as sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation shall be prohibited.

- **Article 23 – Equality between women and men**

Equality between women and men must be ensured in all areas, including employment, work and pay. The principle of equality shall not prevent the maintenance or adoption of measures providing for specific advantages in favour of the under-represented sex.



5.2 Implementation across Work Packages

The GAP is a transversal strategy that applies across all Work Packages (WPs), with WP8 (Project Management) responsible for coordination and oversight. The following key implementation areas have been identified:

- **WP1 – Stakeholder Mapping and Engagement:** Ensure the mapping process recognises gendered roles and power dynamics in local ecosystems. Invite participation from both women and men across all stakeholder categories, particularly in farming and land management.
- **WPs 2 & 3 – Living Lab Operations and Field Trials:** Promote gender-balanced field teams, ensure that field activities are accessible and inclusive, and document participation by sex in co-creation workshops and pilot trials.
- **WP4 – Data and Modelling in Open Call:** Where relevant, include gender-relevant variables in the design of data collection protocols. Acknowledge potential gender-based differences in land use practices and responses to proposed interventions.
- **WP5 – Policy and Governance:** Support the integration of gender-responsive approaches in policy recommendations and soil governance models, building on the findings of WP1.
- **WP7 – Communication, Dissemination and Exploitation:** Apply gender-sensitive language in all external materials, ensure visibility of women researchers and stakeholders in communication outputs, and encourage equitable participation in outreach events and media representation.

5.3 Monitoring and Indicators

The GAP will be monitored annually through the project’s ethics monitoring cycle (D9.2–D9.5), led by the Ethics Advisor in collaboration with the Project Coordinator. Specific indicators include:

- Gender breakdown of project participants, partners, and leadership roles (e.g. WP leads, LL facilitators, governance bodies).
- Participation by sex in training sessions, co-creation workshops, and public events.
- Gender balance in authored deliverables, media outputs, and expert consultations.
- Institutional GEP compliance status of each partner.
- Qualitative feedback from participants regarding inclusivity and representation.

These indicators will be compiled and reviewed at consortium meetings. Where imbalances or barriers are identified, corrective measures will be proposed and documented.

5.4 Capacity Building and Awareness

Capacity-building actions to support the GAP include ethics and gender briefings during consortium meetings, the inclusion of gender equality content in the Living Lab Train-the-Trainer (3ToT) programme (see D1.3), and access to external resources such as the EU’s Gender Equality in Academia and Research (GEAR) tool. Project partners are encouraged to participate in institutional gender training and share best practices during project-level exchanges.

5.5 Zero-Tolerance Commitments

The iCOSHells consortium affirms its full alignment with the European Commission’s zero-tolerance policy on gender-based violence (GBV), sexual harassment (SH), and all forms of abuse or exploitation within the context of EU-funded research and innovation. Following other EU project protocols such as those outlined in the

GENDERACTIONplus⁸ open access report, D3.3 online template for research funding organisations, zero-tolerance is not only a normative commitment but a condition for ensuring safe, inclusive, and equitable working environments across diverse settings—particularly in projects that involve fieldwork, cross-cultural engagement, and direct interaction with stakeholders, as is the case in iCOSHELLS.

Gender-based violence and harassment are understood to include any form of unwanted verbal, non-verbal, or physical conduct that violates the dignity of a person, creates an intimidating or hostile environment, or exploits power imbalances. These behaviours are not limited to sexual harassment, but also include bullying, exclusion, objectification, or any form of intimidation based on sex, gender identity, or sexual orientation. The iCOSHELLS Living Labs, which operate in multiple European contexts, involve co-creative work with farmers, landowners, policymakers, researchers, and civil society organisations—making it imperative to uphold clear behavioural standards and safeguard all participants from harm.

To this end, the iCOSHELLS consortium has adopted the following zero-tolerance commitments:

- All partners agree to foster a working environment free from harassment, discrimination, intimidation, or abuse of authority.
- Any reported case of gender-based violence, sexual harassment, or misconduct—whether involving project staff, participants, or third-party contractors—will be treated with seriousness, confidentiality, and impartiality.
- Each participating organisation must apply its internal policies on workplace harassment and GBV in the context of the project and ensure that safe reporting channels exist for staff and stakeholders.
- iCOSHELLS field activities (e.g. Living Labs, workshops, training sessions) must include ethical briefings that clearly communicate behavioural expectations, reporting procedures, and support options.
- The Ethics Advisor, in consultation with the Project Coordinator, will act as a confidential point of contact for any concerns that fall outside the remit of institutional policies or require project-wide attention.

These commitments are to be upheld throughout the lifecycle of the project and apply to all individuals involved, regardless of role, gender, nationality, or location. In line with the GAP and the EU Charter of Fundamental Rights (Articles 1, 21, and 23), the consortium views the prevention of GBV and harassment as fundamental to ethical research, social responsibility, and the credibility of science–society collaboration.

A brief summary of this zero-tolerance policy will also be integrated into training materials, consent procedures, and public-facing events, ensuring that all stakeholders are aware of their rights and responsibilities when participating in iCOSHELLS.

⁸ GENDERACTIONplus Consortium. (2023). *Online template for a zero-tolerance policy on gender-based violence and sexual harassment for research funding organisations* (Deliverable D3.3). European Commission. <https://genderaction.eu/resources/>

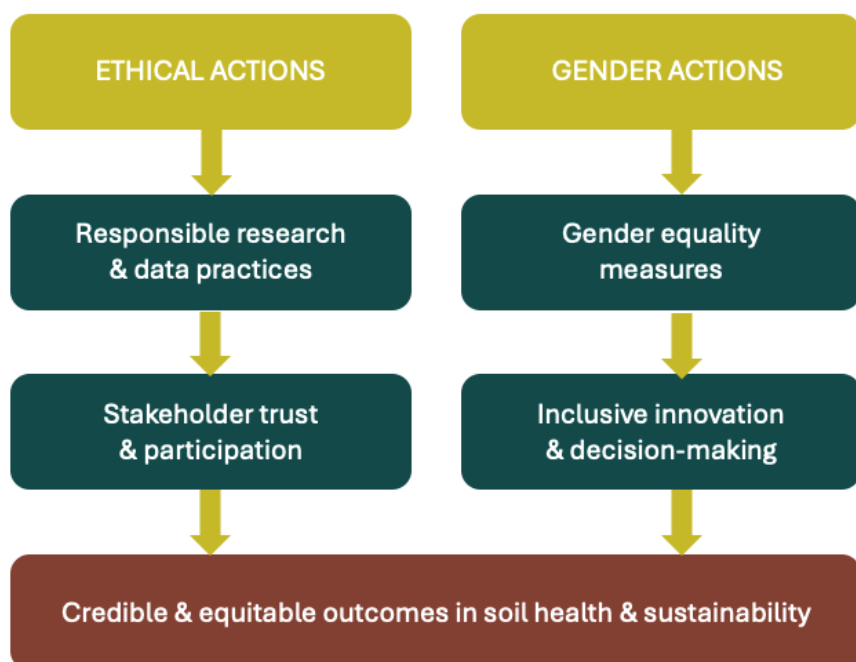


6. Ethical and Gender Impact Outlook

The ethical and gender strategies embedded in iCOSHELLS are not solely mechanisms for regulatory compliance—they are foundational to the project’s capacity to generate credible, inclusive, and sustainable outcomes (Figure 2). By integrating ethics and gender equality from the earliest stages of project design, and continuing through field-level implementation, stakeholder engagement, data governance, and dissemination, the project enhances both the legitimacy and the societal relevance of its scientific contributions.

Figure 2. Ethical and Gender Impact Pathways in iCOSHELLS – from values to outcomes.

Ethical and Gender Impact Pathways in iCOSHELLS



From an ethical standpoint, the project’s multi-actor Living Lab model depends on building trust among stakeholders, many of whom operate in contexts where institutional engagement or research participation may be unfamiliar or asymmetrical. The adoption of participatory consent protocols, transparent data practices (D8.2), and embedded ethics checkpoints (D9.2–D9.5) ensures that local actors remain informed, respected, and empowered throughout the co-creation process. These mechanisms directly support the EU Charter of Fundamental Rights and reinforce the project's commitment to dignity, privacy, and non-discrimination.

At the same time, the Gender Action Plan (Section 6) ensures that gender is not treated as an afterthought, but as an operational and analytical lens. Whether in stakeholder mapping (D1.1), Living Lab governance (D1.3), or field trials (D2.1), the attention to gender-balanced participation, inclusive language, and disaggregated data allows iCOSHELLS to surface and address systemic inequalities that shape land use decisions, access to resources, and participation in innovation. This improves both the robustness of scientific findings and the fairness of the policy and practice recommendations that emerge from the project.

Together, the ethical and gender actions create positive externalities beyond the project lifecycle. They build local capacity, set examples for responsible engagement in environmental research, and contribute to the mainstreaming of EU values in soil health and sustainability transitions. By designing its activities to be socially reflexive, iCOSHELLS positions itself not only as a science-for-policy initiative, but as a model of research excellence that is grounded in equity, transparency, and shared responsibility.

6.1 Ethical Implications of Scaling and Replication

The innovations and tools developed in iCOSHELLS Living Labs are designed to be transferable beyond their original settings. However, the process of **scaling and replication**—whether of soil health indicators, co-creation processes, or decision-support models—raises ethical questions that must be explicitly addressed. These questions concern not only scientific validity, but also fairness, inclusivity, and social responsibility.

While the project’s impact strategy (outlined in WP6) promotes replicability as a key pathway to long-term change, the ethical governance of such transfer must ensure that methods and insights developed in one socio-ecological context do not unintentionally marginalize or misrepresent others. Practices that are successful in one Living Lab may not be culturally appropriate, technically feasible, or institutionally supported in another.

For example, Deliverable D6.1 outlines archetype-based approaches for scaling, which aim to cluster similar settings across regions. While this supports analytical consistency, it also risks oversimplifying local differences. Ethical replication must therefore consider the **limits of transferability** and remain attentive to local governance structures, land tenure norms, and environmental justice concerns.

Deliverable D1.1 highlights that stakeholder ecosystems are dynamic and context-dependent. Actors who may have been excluded or peripheral in the original LL may be more central in a new region. Without inclusive design during scaling, there is a risk of reinforcing existing inequalities or overlooking key local knowledge holders.

Data governance also plays a critical role. As set out in the Data Management Plan (D8.2), informed consent applies not only to data collection but also to secondary use. Any reuse of data for cross-site validation, model training, or policy recommendations must comply with the original terms of consent, and participants must be made aware when their data contributes to results applied outside their region.

To support ethical replication, iCOSHELLS recommends the following:

- **Informed scaling:** Apply ethical review protocols before replicating models, tools, or governance practices in new sites.
- **Participatory ethics validation:** Consult original stakeholder groups when their knowledge or data is adapted or reused elsewhere.
- **Contextual readiness checks:** Evaluate cultural, ecological, and institutional differences before exporting project outcomes to new regions.
- **Transparency in benefits:** Ensure that stakeholders in both original and replicated contexts can access and benefit from scaled innovations.

By embedding these principles into its replication strategy, iCOSHELLS reinforces its commitment to **inclusive innovation**. Ethics is not confined to the **pilot stage**; it must travel with the innovation. Scaling should not merely multiply outputs—it should multiply value, while preserving equity, dignity, and local relevance.

Annex I Consent Template (with sections I-A, I-B)

**TEMPLATE FOR
CONSENT FORM
FOR CO-CREATION SESSIONS**

provided by CSCP



Consent form

@LL partners: Please translate the consent form into your local language and specify the parts highlighted in yellow for each co-creation session. If you want to make other changes to the form, please coordinate with CSCP.

Introduction

Soil degradation is a major challenge that affects the environment, food security, and the economy. It can lead to problems like lower crop production, water pollution, and loss of biodiversity. The iCOSHELLS project, funded by the EU Mission “A Soil Deal for Europe,” is working to address these issues by setting up six Soil Health Living Labs across Europe. These labs aim to create sustainable solutions for soil health that can be used on a larger scale. They focus on involving stakeholders and co-creating solutions that are scientifically sound, locally relevant, and widely accepted.

The [name of Living Lab] Living Lab is one of these six labs. Its goal is to [objective/focus of Living Lab in 1-2 sentences]. As part of this work, at least eight co-creation sessions will be held, using a participatory approach to develop clear and practical insights. The co-creation activities are led by [name of LL lead organisation], and you can learn more about us here: [insert website link].

You are invited to take part in one of our co-creation sessions. This document explains the process and asks for your consent to participate. Please feel free to ask any questions to ensure you fully understand everything. If any terms or information in this document are unclear, ask a project representative to explain them.

Purpose of the Co-Creation Session

The purpose of this session is to [objective/focus of co-creation session in 1 – 2 sentences].

The anonymised results from this session will contribute to developing, testing, and experimenting with solutions in the Living Lab. These results may also be used for project reports, scientific publications, conference presentations, and other project-related outputs.

To support future research, we may store the anonymised data in public databases after the iCOSHELLS project ends. This allows other researchers to use the data for new studies, helping to maximise its impact.

Please find further details on how your data will be collected, protected, and used in the section “Confidentiality, Data Protection and Data Usage” below.

Format of the session

- Duration: xx
- Language: xx
- Facilitator: xx

Confidentiality, Data Protection, and Data Usage

We collect three types of data as part of this co-creation session:

1) Personal data (used only for administrative purposes)

- We collect your name, organisation, and email address **to keep a record of who participated** and to communicate with you about the co-creation activities.
- Personal data may be shared only with the iCOSHELLS project partners, who require this information for administrative and reporting purposes (e.g., for compliance with EU funder requirements).
- Personal data is **stored securely and separately** from the session results. It will **not** be linked to the anonymised data used for our research and innovation activities.



- Your personal data will be kept confidential and will be deleted **no later than 31 January 2034** after the project has been completed and evaluated by the EU. This ensures we comply with the project’s reporting requirements and the GDPR.

2) Demographic data (anonymised, used only for statistical purposes)

- We collect **demographic data (such as gender, age group, and other details) anonymously through a confidential survey** during the session. This data is collected solely for statistical purposes and will not be linked to any personal data or used to identify participants.
- Anonymised demographic data, that cannot be linked to your personal identity, may be shared with iCOSHELLS project partners for statistical, research, innovation, reporting, and dissemination purposes.
- We apply the principle of data minimisation, meaning that we only collect the minimum amount of information necessary to achieve the objectives of the project. Your responses are anonymised and will not be used for any other purpose.

3) Data capturing co-creation session results (anonymised, used for research and innovation purposes)

- During the session, we will take notes and document the discussions digitally.
- These records will be **fully anonymised**, meaning they will not include any information that could identify you. The original records will be deleted within 3 months after the session.
- Anonymised data, that cannot be linked to your personal identity, may be shared with all iCOSHELLS project partners for research, innovation, reporting, and dissemination purposes.
- The anonymised data may be used in project reports, scientific publications, presentations, and other project-related outputs. It may also be stored in public databases after the project ends to support future research. It will be retained indefinitely.

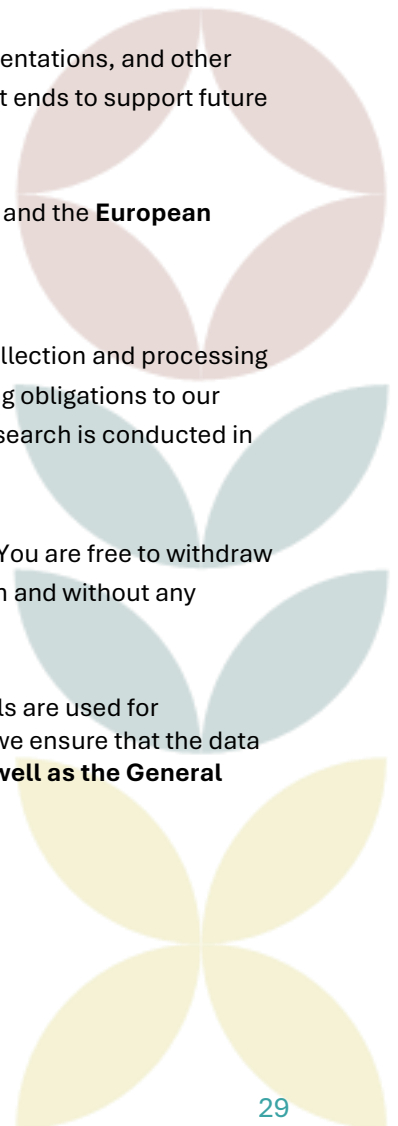
This study complies with the **General Data Protection Regulation (GDPR) (EU) 2016/679** and the **European Commission’s Ethics Guidelines for Research**, particularly:

- **GDPR Article 6 – Lawfulness of Processing:**
Your participation is voluntary, and by agreeing to take part, you consent to the collection and processing of anonymised data. We are also required to keep attendance records for reporting obligations to our funders, which are stored securely and not linked to the anonymised data. The research is conducted in the public interest, aiming to contribute to sustainable soil health solutions.
- **GDPR Article 7 – Conditions for Consent:**
Your consent to participate is freely given, specific, informed, and unambiguous. You are free to withdraw your consent at any time without the need to provide justification for your decision and without any negative consequences.

We may use **AI tools for transcription and data processing** of anonymised data. If AI tools are used for transcribing or processing data (such as speech-to-text services or automated analysis), we ensure that the data will be processed in **compliance with the EU Artificial Intelligence Act (2021/0106), as well as the General Data Protection Regulation (GDPR)**.

We ensure that:

- **Only anonymised data is used in AI tools.**
- AI transcription tools do not store or link personal data.



- The use of AI tools for transcription will adhere to transparency and fairness principles, in line with applicable EU regulations.

Rights of Participants

- Your participation in the session is voluntary. You have the right not to answer any question, and to stop your participation at any time and for any reason.
- You have the right to access, correct, or delete your data at any time. To request the access, correction, or deletion of your personal data, please contact the “contact person” specified below.
- You can withdraw your consent to use the data without any negative consequences. Any personal data collected up until the point of withdrawal will be deleted, unless there is a legal obligation to retain it.
- You have the right to lodge a complaint with a data supervisory authority. A full list of the country specific data supervisory authorities can be found [here](#).

Contact information

For any questions or concerns, please contact

Contact person: [please specify contact person for the co-creation session here and provide their email address]

Data Protection Officer: [please specify data protection officer of your organisation here and provide their email address]

Project Coordinators iCOSHELLS:

Erik Sindhøj: erik.sindhoj@ri.se;
Cheryl Marie Cordeiro: cheryl.marie.cordeiro@ri.se
Mar Basterrechea: mbasterrechea@zabala.es ;
Mikel Lorea: mlorea@zabala.es;
Raquel Maeztu: rmaeztu@zabala.es;



Participant Consent

Please carefully read and sign this consent form. It allows us to use the information that you share with us during the co-creation session research and innovation purposes.

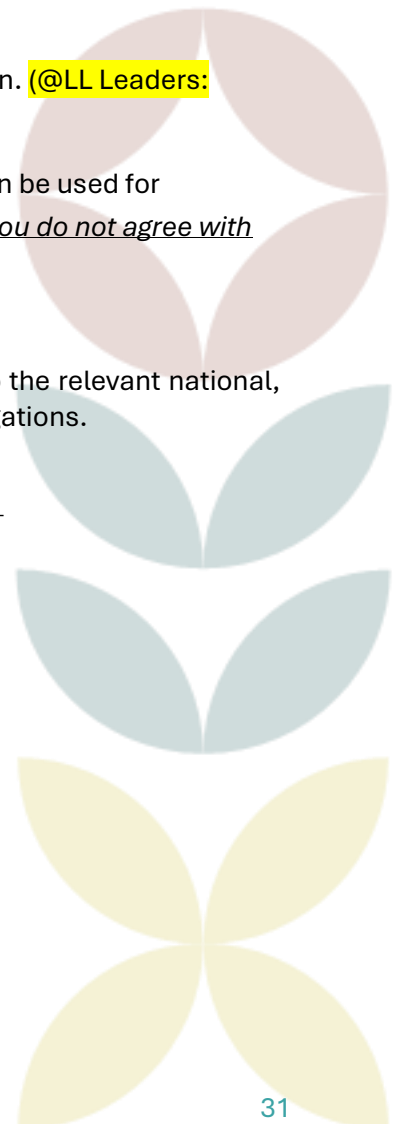
- I voluntarily agree to participate in this co-creation session, which is part of the iCOSHELLS project. I am 18 years or older and competent to provide consent.
- I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.
- I have had the purpose and nature of the project, and the co-creation session explained to me in writing and I have had the opportunity to ask questions about the project and the session.
- I understand that in any publication on the results of this research my identity will remain anonymous.
- I have read and understood the "Confidentiality and Data Protection" section of this form, and I agree to the use of my data as outlined there. I had the opportunity to ask questions about the section.
- I agree to being **audio-recorded/ AI-transcribed** during the co-creation session. **(@LL Leaders: Please specify what applies to your session)**
- I agree that photos and videos are taken during the session and that these can be used for iCOSHELLS publications and communication activities. *(Please cross out if you do not agree with photos and/or videos).*

I have received a copy of this agreement. This consent form is made pursuant to the relevant national, European data protection laws and regulations and personal data treatment obligations.

Date & Location

Name

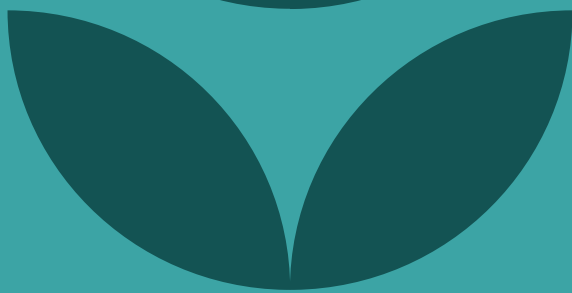
Signature



Annex II Glossary

Term	Definition
Ethical Oversight	A structured process to ensure project activities comply with legal, moral, and institutional standards related to human rights, research integrity, and data protection.
Ethics Advisor	An independent expert appointed to monitor, guide, and assess the ethical integrity of the project across all work packages and stakeholder engagement activities.
Informed Consent	The process by which participants voluntarily agree to take part in a study or activity, with a clear understanding of the purpose, risks, and their rights.
GDPR (General Data Protection Regulation)	EU Regulation 2016/679 governing the lawful processing of personal data, including principles such as consent, purpose limitation, and data minimisation.
Pseudonymisation	A technique for processing personal data in which identifying information is replaced by artificial identifiers to protect individual privacy.
Living Lab	A co-creative, real-world testbed where researchers, stakeholders, and community members collaborate on solutions, policies, or technologies in context-specific settings.
Ethical Risk	Any potential harm, unintended consequence, or rights infringement arising from research, stakeholder engagement, data handling, or field activities.
Gender Action Plan (GAP)	A strategic framework that promotes gender equality across project activities, including leadership roles, participation, language use, and impact monitoring.
Sex-disaggregated Data	Data collected and analysed separately for women and men to identify differences, trends, or imbalances in participation, outcomes, or experiences.
Zero-Tolerance Policy	A formal commitment to preventing and addressing all forms of gender-based violence, sexual harassment, or abuse of power within the project.
Power Asymmetry	Situations in which participants or stakeholders have unequal access to decision-making, resources, or influence, potentially affecting fairness and inclusivity.
Stakeholder Engagement	The process of involving individuals, communities, or organisations in project activities, with the aim of co-creating knowledge or co-designing solutions.
Co-Creation	A collaborative process through which researchers and stakeholders jointly develop solutions, interventions, or knowledge outputs.
Research Integrity	The commitment to uphold standards of reliability, honesty, transparency, and accountability in all aspects of research design, implementation, and dissemination.
Discrimination	Any unequal or unfair treatment based on sex, race, ethnicity, religion, disability, age, or other legally protected characteristics, prohibited under Article 21 of the EU Charter.





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