

From Principles to Practice: Towards Ethical Excellence and Open Access in Living Labs

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Living Labs (LLs) bring together farmers, researchers, businesses, and local communities to tackle complex environmental issues [1, 2, 3, 9]. Overarching principles such as **Open Access, transparency, inclusion, and ethical responsibility** are essential to build trust in these complex, multi-actor real-world environments [3, 4, 5]. However, Living Lab (LL) teams, including managers, project coordinators, facilitators, and research leads, face a major practical challenge: while European guidelines define *what* values to uphold, they rarely show *when* and *how* to apply them [1, 6]. **Awareness of Open Science and Ethical Guidelines itself is not sufficient – LL teams need actionable ways to seamlessly integrate these principles in everyday LLs activities** [7, 8].

In the NEMESIS project, LLs across the Mediterranean co-create, co-design, test, and evaluate solutions to improve soil health and combat desertification. Operating across diverse socio-economic contexts, LLs must balance complex data ownership questions, regional governance arrangements, and varying stakeholder needs [9]. In this setting, **ethical governance and transparent data handling are not administrative burdens; they are prerequisites for successful co-creation**. Without practical support mechanisms, however, translating overarching European principles into everyday LL activities can create challenges for LL teams responsible for coordinating and implementing collaboration and innovation processes. This highlights a persistent principles-to-practice gap: **while overarching principles are well established, practical guidance on how to operationalise them through concrete decisions, processes, and interactions within LLs remains limited** [1, 6].

Task 1.5 will address this challenge by developing an integrated Living Lab-tailored Ethical Framework and an Open Access Policy Framework. Together, these frameworks aim to translate overarching principles into everyday LL practice. The frameworks draw not only on European Open Science and Responsible Research and Innovation Principles, but also on Nemesis project outputs/deliverables, including the Data Management Plan, governance frameworks, multi-actor engagement approaches, and intellectual property rights [10]. The Ethical Framework will further be informed by guidance from the Nemesis External Ethics Advisory Board.

Following a human-centred, iterative Design Thinking approach, the task actively involves LL teams in the co-design, testing, and refinement of practical resources grounded in real-world needs and constraints rather than theoretical assumptions ^[11, 12]. The resulting frameworks and practical resources are intended to help LLs organise co-creation activities, engage stakeholders, manage data and knowledge sharing, support experimentation and make transparent, inclusive, and responsible decisions.

The LL-tailored Ethical Framework and the Open Access Framework build on five key pillars:

- **Openness** in data and knowledge sharing;
- **Transparency** in communication and governance processes;
- **Inclusion** in stakeholder participation and co-creation;
- **Fairness** in multi-stakeholder collaboration;
- **Responsibility** in ethical decision-making.

To turn these principles into practice, **Task 1.5 will focus on creating practical support for LL teams**. This may include:

- **Pragmatic Guidance:** Checklists, templates, and decision guides for stakeholder engagement, co-creation activities, experimentation, and data management;
- **Learning Resources:** Easily accessible digital learning materials, case scenarios, and examples of good practice that allow LLs to learn from each other and strengthen peer learning;
- **Shared Insights:** Actionable lessons learned that can support multi-actor groups and other European projects in navigating Ethical Excellence and Open Access in collaborative innovation settings, thereby facilitating knowledge transfer.

By translating overarching principles into LL-tailored frameworks accompanied by practical resources, Task 1.5 will facilitate the integration of Ethical Excellence and Open Access into the everyday practice of the LLs.

In doing so, the task will support the creation of transparent, inclusive, and responsible multi-actor ecosystems in which LL teams, together with diverse stakeholders, can co-create, test, and refine innovative solutions and sustainable land management practices aimed at improving soil health and combating desertification.

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