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## SUSTAINABLE SOILS FOR SUSTAINABLE AGRICULTURE (ROMA TRE UNIVERSITY, 20-22 OCTOBER 2025)

The international conference “Sustainable Soils for Sustainable Agriculture”, held in Rome from 20 to 22 October 2025, was part of the research, training, and dissemination activities of the European project ProLand – EU Partnership to Protect Agricultural Land in the Face of Climate and Environmental Challenges. Caring for Future Generations, funded under the Erasmus+ Programme – Cooperation Partnerships in Higher Education (KA220-HED).

The ProLand project is grounded in the growing awareness, at both European and international levels, that agricultural soil is a limited and vulnerable resource, increasingly affected by degradation processes, land take, sealing, and loss of fertility, exacerbated by climate change, urban pressure, land financialization, and intensive production models. Against this background, the project aims to strengthen European academic cooperation by fostering reflection on the role of law, public policies, and institutions in the long-term protection of agricultural land and in safeguarding the interests of future generations.

The project brings together five European universities representing different legal systems, agrarian traditions, and socio-economic contexts – Roma Tre University (Italy), University of Almería (Spain), Poznań University of Life Sciences (Poland), Slovak University of Agriculture in Nitra (Slovakia), and Taras Shevchenko National University of Kyiv (Ukraine) – thereby enabling a comparative and interdisciplinary approach combining agricultural and environmental law with agricultural economics, EU policies, rural sociology, and sustainable farming practices.

Within this framework, the conference was organized under the scientific and organizational direction of Professor Giuseppe Spoto (Roma Tre University), in his role as Local Project Coordinator, and represented a key milestone of the project, serving as a space for scientific synthesis and dialogue between theoretical research, institutional perspectives, and territorial practices.

Structured around scientific sessions and field-based workshops, the conference

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addressed the protection and sustainable management of soils as one of the most pressing challenges facing contemporary agriculture and environmental governance. Recognized as a fundamental natural resource, soil was discussed as a cornerstone of food security, ecosystem services, biodiversity conservation, and climate resilience, while also being increasingly threatened by erosion, contamination, sealing, loss of organic matter, and unsustainable land use.

The conference therefore promoted an interdisciplinary discussion on soil protection, integrating legal, economic, environmental, and policy-oriented perspectives, with particular attention to the evolving European framework on soil monitoring and resilience, the role of the Common Agricultural Policy, national legal systems, and the challenges posed by territorial governance, digitalization, and European integration processes.

The opening of the conference was marked by institutional addresses delivered by Antonio Carratta, Director of the Department of Law at Roma Tre University, Leonardo Pastorino, President of the World Union of University Agrarians (UMAU), and Maria Esther Muñoz, President of the European Council for Rural Law (CEDR). These institutional remarks emphasized the centrality of soil protection within contemporary legal and policy debates on sustainable agriculture and rural development.

Following the institutional addresses, Giuseppe Spoto (Roma Tre University), acting as Local Project Coordinator, delivered the conference presentation. His introductory remarks provided a comprehensive overview of the project's aims and governance structure, highlighted the strategic role of soil protection within contemporary European legal and policy debates, and framed the conference as a key moment of scientific synthesis and dialogue between academic research, institutional actors, and territorial practices.

The scientific sessions of the conference developed along a coherent thematic trajectory, moving from European-level reflections to national legal experiences and sectoral policy instruments. The first contribution framed soil protection within the broader debate on environmental sustainability and agricultural policy at EU level. In her presentation entitled "Protection of Soils from an Economic Perspective", Cristina Vaquero Piñeiro (Roma Tre University) examined the economic relevance of soil protection within the broader framework of environmental sustainability and European agricultural policy. Soil was presented as a fundamental resource for agricultural production whose degradation entails significant economic and ecological risks, including reduced productivity, loss of biodiversity, and increased vulnerability of agricultural systems.

The presentation highlighted the main pressures affecting European soils – such as erosion, land-use intensification, sealing, contamination, and the decline of soil biodiversity – and emphasized the role of agroecology as an integrated approach capable of reconciling environmental protection with economic viability. Particular attention was devoted to the influence of public policies, especially the Common Agricultural Policy, in shaping farmers’ production choices through eco-schemes, incentives, and support measures aimed at promoting sustainable land management practices.

Innovation and digital technologies were identified as key tools for improving soil monitoring and resource efficiency, although persistent implementation gaps related to funding constraints and limited knowledge transfer were also acknowledged. In this context, the presentation underlined the importance of coordinated, place-based public policies and collective initiatives in fostering effective investments in soil protection. Reference was also made to recent empirical research at territorial level, illustrating how policy incentives can influence farmers’ interactions with soil biodiversity and sustainable land-use strategies.

Following this economic perspective, the conference shifted its focus to the scientific foundations underpinning the emerging European framework on soil protection. In his presentation entitled “Soil as a Legal Frontier: Edaphic Keys to the European Soil Monitoring Framework”, Fernando de Moral Torres (University of Almeria) aimed to illustrate the soil-related premises of the current draft of the European Directive on Soil Monitoring and Resilience. Soil was presented not simply as a physical substrate supporting human activities, but as a living and vital entity responsible for a wide range of ecosystem functions. From an anthropocentric perspective, these functions were described as being translatable into essential ecosystem services, thus highlighting the central role of soil in environmental sustainability and human well-being.

The presentation introduced the technical concepts underlying the proposed Directive, with particular reference to the properties considered crucial for soil health and the indicators used to assess them. These elements were presented as fundamental tools for establishing a harmonized soil monitoring system across Europe. In addition, the main threats currently affecting European soils were discussed, emphasizing the extent to which soil degradation compromises the ability of soils to perform their ecological and productive functions. In concluding, the speaker stressed that soil protection should not be regarded merely as an environmental issue, but rather as a scientific, technical, and political imperative closely linked to ecological resilience and global food security. Ensuring living, healthy, and high-quality soils was presented as a prerequisite for building a truly sustainable future.

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Building on these scientific premises, the subsequent contribution addressed the legal translation of soil health concepts within the European regulatory framework. In his presentation entitled “Legal Elements of the European Proposal for a Soil Monitoring and Resilience Directive”, Lorenzo Mellado Ruiz (University of Almeria) examined the most significant provisions of the proposed Directive, focusing on its objectives, structure, and implementation mechanisms. The presentation highlighted the European Union’s ambition to guarantee the health of all soils as a general and shared goal, recognizing that only healthy soils are capable of providing essential economic and ecosystem services.

Particular attention was devoted to the harmonization of objectives and risk assessment methodologies across Member States, combined with a degree of flexibility in national implementation. This approach was presented as a means of ensuring coherence at EU level while allowing adaptation to national specificities. The presentation also emphasized the close link between soil protection, the zero-pollution objective, and the EU’s commitment to achieving climate neutrality by 2050. Within this framework, measures aimed at monitoring soil health, strengthening soil resilience and adaptive capacity, and ensuring the rational management of contaminated soils were discussed. In conclusion, the speaker underlined the ambitious nature of the proposed Directive, noting that its effectiveness will depend on extensive internal development and sustained implementation efforts within Member States.

Against this European policy background, the conference then explored the role of EU guidelines as instruments for promoting sustainable soil management. In her presentation entitled “The European Union Guidelines as Tools for Sustainable Soil Management”, Monika Jakubus (Poznań University of Life Sciences) addressed the current challenges associated with proper and sustainable soil management in light of recent EU policy developments. The presentation discussed the importance and multifunctionality of soils, as well as the main factors and sectors exerting pressure on soil health, including intensive and unsustainable land use, pollution from industry and transport, and the expansion of urban infrastructure.

Within this context, the presentation reviewed the main EU legal and strategic instruments aimed at soil protection, including the Soil Strategy for 2030, the Zero Pollution Action Plan, the Farm to Fork Strategy, the Biodiversity Strategy, the European Climate Law, the Common Agricultural Policy, and the framework of Good Agricultural and Environmental Conditions. Particular emphasis was placed on Eco-Schemes as a direct and important tool supporting sustainable soil management. Together with GAEC standards, Eco-Schemes were presented as mechanisms designed to encourage

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practices that increase soil organic matter, reduce erosion, and enhance soil biodiversity. In concluding, the speaker emphasized that the effective implementation of ambitious EU soil protection objectives largely depends on the knowledge, engagement, and commitment of farmers, whose role is crucial in translating policy goals into practice.

A national legal perspective on soil protection was subsequently provided through an analysis of the Polish regulatory framework. In her presentation entitled “Soil Protection in Poland – Selected Legal Issues”, Izabela Lipińska (Poznań University of Life Sciences) examined the legal scope of soil protection under Polish legislation. It was noted that, in Poland, soil protection is not regulated through a single, comprehensive legal act specifically dedicated to nature or environmental protection. Instead, it is addressed through a set of provisions that overlap with regulations aimed at counteracting the negative effects of urbanization and industrialization.

The core legislative instrument governing soil protection was identified as the Act of 3 February 1995 on the Protection of Agricultural and Forest Land, which regulates land use, as well as the restoration and improvement of land use value. However, the presentation highlighted the insufficiency of the instruments contained in this legislation and the resulting limitations of national soil protection measures. Several key conclusions were drawn, including the recognition of soil in agricultural production as both a means of production and an environmental resource, the need to protect soil productive qualities from negative agrotechnical practices, and the relevance of legal provisions aimed at protecting terrestrial ecosystems. The absence of a unified EU legal act on soil protection and the lack of harmonized monitoring standards and soil health assessment criteria were also identified as critical challenges.

Further national challenges were addressed in the presentation entitled “Agricultural Land: Problems and Challenges in Terms of Legal Regulation” by Zuzana Bohátová (Slovak University of Agriculture in Nitra). Focusing on the Slovak context, the presentation examined the most significant issues related to the ownership and use of agricultural land. Particular attention was devoted to the extreme fragmentation of land ownership, which was identified as a major obstacle to effective land management and sustainable agricultural development. In addition, insufficient legal protection of agricultural land from conversion to non-agricultural uses was highlighted as a growing concern.

Environmental threats, including soil erosion and soil degradation, were also discussed as factors further undermining the productive and ecological functions of agricultural land. In conclusion, the presentation proposed a set of possible legislative and institutional measures aimed at eliminating or mitigating these problems and pro-

moting a more effective and sustainable use of agricultural land in Slovakia.

The role of European agricultural policy in soil protection was subsequently examined in the presentation entitled “Protection of Land in the Common Agricultural Policy” by Krzysztof Różański (Poznań University of Life Sciences). The contribution analyzed how the Common Agricultural Policy supports the protection of agricultural land through a combination of direct payments, conditionality requirements, and agri-environment-climate measures. Particular attention was devoted to cross-compliance and enhanced conditionality mechanisms linking financial support to the adoption of sustainable land management practices, including measures aimed at protecting soil structure, fertility, and biodiversity.

The presentation highlighted how CAP instruments contribute to preventing land degradation by promoting crop diversification, the protection of permanent grasslands, and environmentally friendly farming practices. At the same time, it was acknowledged that significant challenges remain, particularly with regard to ensuring uniform implementation across Member States and balancing environmental objectives with economic competitiveness. In conclusion, the speaker emphasized the importance of strengthening monitoring systems, increasing farmers’ awareness, and further aligning CAP measures with climate and environmental goals in order to improve land protection outcomes and support the long-term resilience of European agriculture.

The legal dimensions of soil protection in sustainable agriculture were further explored within the Polish context by Katarzyna Leśkiewicz (Adam Mickiewicz University) in her presentation entitled “Land Protection Instruments - selected aspects”. The contribution focused on the legal instruments available for soil protection, including soil classification systems, local spatial development plans, and other land-use planning acts. These instruments were described as performing a protective function by regulating land use and safeguarding soil resources.

However, the presentation noted that the practical application of these legal instruments is often ineffective. In some cases, soil classification mechanisms were described as being misused to circumvent existing legal constraints, thereby weakening the overall system of soil protection. In light of these shortcomings, the presentation emphasized the need to strengthen soil monitoring instruments in order to ensure more effective enforcement of legal provisions. In this regard, the prospective European directive on soil monitoring was presented as a potential response to existing gaps, offering an opportunity to enhance coherence and effectiveness in soil protection policies.

A particularly complex and evolving legal context was addressed in the final group of contributions. The conference then turned to the Ukrainian context, charac-

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terized by profound legal, institutional, and socio-political transformations. In his presentation entitled “Legal Protection of Land: Ukrainian Realities and European Dimensions”, Volodymyr Nosik (Taras Shevchenko National University of Kyiv) examined the legal nature of soil protection through the broader concept of land protection, situating his analysis within the context of European integration and the challenges posed by the Russian-Ukrainian war. The presentation traced the evolution of scientific ideas and regulatory approaches to soil protection across several historical periods, highlighting both positive and negative features in terms of legal protection.

It was emphasized that, in Ukraine, soil protection is implemented as part of the broader legal framework of land protection, as defined by the Law of Ukraine On Land Protection. Within this framework, soil protection was described as a system of legal, organizational, technological, and other measures aimed at preserving and restoring soil fertility, preventing degradation, and ensuring environmentally safe agricultural production. The presentation also outlined the extensive set of obligations imposed on land users in the course of economic activities, covering areas such as agriculture, land reclamation, forestry, water management, urban development, and the use of pesticides, agrochemicals, and waste. From a European perspective, the alignment of Ukrainian legislation with EU standards through the Association Agreement and the EU accession process was identified as a key driver of ongoing legal transformation.

This analysis was further complemented by the presentation of Tamara Sarkisova (Taras Shevchenko National University of Kyiv) entitled “Soil Protection Management System: Ukrainian Reality and European Dimension”. The contribution focused on the structure, content, and functioning of state administration in the field of soil protection in Ukraine. The presentation examined agricultural land and soil as objects of legal protection, the competences of the authorities involved in soil protection governance, and the role of local authorities within the management system.

Particular attention was devoted to the challenges currently affecting the Ukrainian soil protection management system, including the suspension or complication of control measures due to wartime conditions, staff shortages, and the lack of a fully operational modern monitoring system. At the same time, the presentation highlighted recent legislative developments aimed at updating the environmental monitoring framework and aligning it with EU approaches, as well as the increasing role of digital instruments such as the State Land Cadastre, the State Agrarian Register, and emerging registers of contaminated territories. Despite the constraints imposed by the ongoing conflict, the presentation demonstrated that significant progress has been made in transforming Ukrainian legislation on agricultural land and soil protection in line with the

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country's European integration trajectory.

The conference “Sustainable Soils for Sustainable Agriculture” provided a comprehensive and multifaceted overview of the challenges and opportunities related to soil protection in contemporary agricultural systems. Across the various contributions, a shared understanding emerged that soil protection is not merely an environmental concern, but a strategic priority encompassing legal regulation, economic sustainability, food security, and the long-term resilience of agricultural landscapes.

The presentations highlighted the central role of European policies – particularly the emerging Soil Monitoring and Resilience framework and the Common Agricultural Policy – in promoting sustainable land use and preventing soil degradation. At the same time, national experiences illustrated both progress and persistent gaps in the implementation and enforcement of soil protection measures, revealing the need for stronger monitoring systems, clearer legal frameworks, and greater coherence between planning instruments and environmental objectives.

Several contributions emphasized the importance of governance structures, digital tools, and institutional capacity in ensuring effective soil protection, especially in contexts affected by structural challenges or extraordinary conditions, such as armed conflict or extreme land fragmentation. In this perspective, the role of farmers and local authorities emerged as crucial, underscoring the need for awareness, incentives, and participatory approaches capable of translating policy goals into concrete practices.

Overall, the discussions reaffirmed that sustainable soils constitute a cornerstone of sustainable agriculture. Achieving this objective requires integrated legal, economic, and policy instruments, reinforced by scientific knowledge, reliable data, and coordinated action at European, national, and local levels. These shared reflections provided the conceptual framework for the field-based workshops that followed, allowing the theoretical and legal insights developed during the conference sessions to be explored through concrete institutional, cultural, and social experiences.

Alongside the theoretical and comparative sessions, the conference also included a structured programme of field-based workshops, conceived as an integral part of the scientific agenda. These activities were designed not as complementary or illustrative moments, but as methodological tools aimed at empirically testing and contextualizing the concepts of sustainability discussed during the academic sessions. Their purpose was to foster a meaningful dialogue between soil law, agricultural policies, sustainable land management practices, and the cultural and social dimensions that intersect with the protection of agricultural land.

The workshops followed a coherent conceptual progression, guiding participants

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from a global and institutional perspective to more localized and socially embedded experiences. The first workshop took place at the Food and Agriculture Museum & Network (FAO MuNe), located within the headquarters of the Food and Agriculture Organization of the United Nations in Rome. This visit framed the discussion on agricultural soils within a global and multi-level perspective, consistent with the FAO's role in international food security governance and sustainable agricultural development. Rather than functioning as a traditional museum, MuNe operates as a narrative and educational space in which historical documents, objects, artworks, and immersive installations collectively convey the long-standing relationship between human societies, land, food production, and the environment. Within the context of the conference, this experience offered a key interpretative insight: soil sustainability cannot be understood solely as a technical or regulatory issue, but must also be recognized as a cultural construct rooted in historical memory, symbolic representations, and shared narratives. From a scientific perspective, the workshop reinforced the connection between soil protection, global food security, the right to food, and the role of international organizations in shaping long-term strategies and standards.

The second workshop shifted the focus to a historical, symbolic, and urban dimension through a visit to the Giardino dei Monaci at the Abbey of Saint Paul Outside the Walls. This site, representing a traditional monastic garden, allowed participants to reflect on soil sustainability as the outcome of a long-standing balance between human labour, natural cycles, and ethical responsibility towards the environment. The presence of medicinal plants and crops cultivated according to historical practices highlighted the value of traditional agronomic knowledge, often marginalized in intensive production systems but increasingly recognized as a strategic resource for building resilient and ecosystem-friendly agricultural models. At the same time, the garden's location within the urban fabric of Rome enabled a connection between discussions on soil protection, land take, spatial planning, and urban agriculture, demonstrating how soil can play a key role in environmental education, urban regeneration, and the strengthening of community–territory relationships.

The final workshop took place at the Garibaldi Agricultural Cooperative and offered a further expansion of the sustainability perspective by foregrounding its social dimension. The cooperative integrates agricultural activities with programmes of social and labour inclusion, actively involving young people with disabilities, particularly individuals on the autism spectrum. This experience illustrated how agricultural soil can function not only as a site of food production, but also as a space of inclusion, care, and social relations. In this context, agricultural work assumes an educational and form-

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ative role, contributing to personal autonomy, skills development, and pathways of active citizenship. From the perspective of the ProLand project, the cooperative provided a concrete example of soil as a relational good, highlighting the need for soil protection policies to interact with labour, welfare, and social inclusion policies and to overcome fragmented, sector-specific approaches.

Taken together, the three workshops contributed to shaping an integrated and multidimensional understanding of soil sustainability. They reinforced the central message of the conference: the protection of agricultural soils cannot be addressed as a sectoral or purely technical issue, but must be embedded within a comprehensive strategy of sustainable development capable of integrating legal frameworks, public policies, cultural dimensions, and social practices. In this sense, the workshops functioned as genuine laboratories of applied reflection, in which the theoretical and normative categories discussed during the conference were concretely tested in the field. Within the framework of the ProLand project, these experiences played a crucial role in validating academic insights and in outlining a European model of soil protection grounded in an integrated conception of sustainability that brings together environmental protection, social justice, and intergenerational responsibility.

Taken as a whole, the conference Sustainable Soils for Sustainable Agriculture confirmed the relevance of soil protection as a cross-cutting issue that transcends disciplinary boundaries and policy sectors. By combining legal, economic, scientific, and institutional analyses with field-based and socially embedded experiences, the conference offered a coherent and multifaceted perspective on the challenges and opportunities associated with the sustainable management of agricultural soils.

The dialogue between theoretical reflection and practical observation highlighted the need for approaches capable of integrating normative frameworks, public policies, governance structures, and territorial practices. In this sense, the conference demonstrated how soil protection must be understood not only as a matter of regulation or technical standards, but as a broader societal commitment involving cultural values, social responsibility, and long-term planning.

Within this perspective, the conference fully reflected the objectives of the ProLand project, contributing to the development of a shared European vision of soil protection grounded in sustainability, resilience, and intergenerational responsibility. Rather than providing definitive answers, the conference opened spaces for continued research, cooperation, and policy innovation, reaffirming the central role of soils in shaping the future of agriculture and rural territories.