



GENERAL STATES FOR SOIL HEALTH WRAP UP

10 November 2022

Promoted by the National Coordination Group for the Bioeconomy (CNBBSV) of the Presidency of the Council of Ministers^[1] and Re Soil Foundation in collaboration with CREA and ISPRA, the General States for soil health were held for the first time on 10th November 2022 at Ecomondo, the international fair on the green and circular economy in Rimini. This year it hosted 100,000 visitors from 98 countries, with 130,000 m² of exhibition space managed by 1,400 companies from 36 different countries. During the States General for soil health the European legislative framework and the actual situation at national level were illustrated, thanks to the participation of the main national and international speakers and experts. The aim was to develop a programmatic platform to support the development of an Italian Soil Strategy, through the analysis of the environmental, economic, legislative and social scenario, of good practices and multidisciplinary and multi-actor projects, which are already providing answers in this direction.

Recordings, programmes and presentations of the two sessions, can be found at the following links:

- [International session](#)
- [National session](#)

PRIORITIES TO RESTORE SOIL HEALTH ACCORDING TO THE CONFERENCE OUTCOMES

1. **Stakeholder engagement.** It is necessary to organize the initiatives in Italy and in Europe and work in synergy to bring them to the territories through the development of dedicated policies and regulations, the harmonization of the various initiatives underway and the promotion of collaborations on the territory .
2. **Data and monitoring systems.** Data collection and analysis systems need to be strengthened and harmonized on an international scale. It is necessary to identify simple indicators of the state of soil health and to encourage the adoption of monitoring systems.
3. **Agriculture.** Agriculture needs to be repositioned within national and EU policies on bioeconomy, promoting the use of good practices that are centered on the aspects of soil resource protection, such as integrated and widespread livestock systems, biogas and biomethane production starting from livestock manure, use of compost, biochar and other organic amendments. It is necessary to foster the connection between research, innovation, technology and agriculture, to boost bioeconomy districts and other good agronomic practices that can find a springboard in the **Lighthouse Farms** and **Living Labs**. It is necessary to promote **carbon farming**. The potentially usable agricultural area in Europe to sequester carbon through carbon farming amounts to 160 million hectares, so the potential of



agriculture in carbon sequestration is enormous. It is necessary to identify rewarding systems for farmers who implement good practices aimed at restoring organic matter and protecting the soil.

4. **Education, information, and divulgation.** Awareness of the importance of soil and its quality is still too low and it is important to increase education, information, and divulgation on this matter, starting from schools through holistic and multidisciplinary approaches, in line with what is indicated by the Mission *A Soil Deal For Europe*.
5. **Legislative aspect.** The existing legislations in the Member States are discordant and contradictory. A Community legislative framework is needed so that the conditions for effective soil protection can be created at the national and local level, through a loyal cooperation within a multilevel governance. Soil consumption must be stopped. In 2021 Italy recorded the highest rate of soil consumption of the last 10 years, with 70 km² lost due to construction sites, infrastructures, and buildings. It is necessary to redirect transformations towards existing buildings.
6. **Economic aspects.** There are many resources to spend, the PNRR funds, European resources 2021-2027, the development and cohesion fund. It is necessary to maintain lucidity to develop precise strategies. It is necessary to use resources according to careful planning, coordinating the various actors and capitalizing on existing initiatives.
7. **Circular bioeconomy and bio-products.** It is essential to start from renewable resources, marginal lands, by-products of supply chains and citizen waste to produce bio-products that can help solve water and soil pollution problems, restore fertility and protect biodiversity.

SUMMARY OF INTERVENTIONS

International session

Speakers

- Catia Bastioli – former member of EC Mission Soil health & food, member of Re Soil Foundation (Chair)
- Roberto Moncalvo – President of Coldiretti Piemonte, Re Soil Foundation Board Member (Chair)
- Laura D'Aprile – MITE
- Fabio Fava – EC Mission Soil health & food Italian vice representative, member of Re Soil Foundation
- Lucrezia Caon – Land and Water Officer FAO (Soil Management)
- Luca Montanarella – Action Leader in SOIL - JRC
- Andrea Vettori – Deputy Head of Unit, Natural Capital, Land use and Management, DG ENVI
- Alessandro Apolito – Head of Technical dept. Coldiretti
- Sofia Lilli – University of Perugia
- Pedro Berliner – Emeritus Full Professor, The French Associates Institute for Agriculture and Biotechnology of Drylands
- Bram Moeskops – Research & Innovation Manager IFOAM Organics Europe



- David Chiamonti – Full Professor, Polytechnic University of Turin, Department of Energy, member of Re Soil Foundation
- Prof. Vladislav H. Popov – Vice-rector Agricultural University of Plovdiv (AUP) and delegate of Bulgaria in the Standing Committee on Agricultural Research (SCAR) of the European Commission
- Margrethe Balling Høstgaard – PREPSOIL project manager - DCA, Aarhus University, Denmark

According to the European Commission, **60-70%** of all European soils are unhealthy due to current management practices, pollution, urbanization and climate change's effects. **Luca Montanarella** explained that, in particular, **25%** of soils in southern, central and eastern Europe is on a high or very high risk of desertification, while today's land reuse rate stands at **13%**. The estimated costs associated with land degradation in the EU exceed **50 billion Euros/year**.

During the States General, it was underlined that 33% of global soils are already degraded and, if we continue with "business as usual", as indicated by **Lucrezia Caon**, we will reach 90% by 2050. Soil degradation directly affects the well-being of 3.2 billion people worldwide and, according to projections, 8% of the world's population will be facing hunger in 2030.

These data underline the **urgency of action** and the **need for collaborations** between stakeholders at all levels. **Catia Bastioli** underlined that *"it is time for Europe to choose whether to prefer the imposition of a model towards a single market without peculiarities or an economy with roots in territories and integrated supply chains, where participatory innovation, starting from the different soils and their use, allows an evolution of ecological and technical knowledge, linked to the cultural evolution of the European peoples itself."* [2]

The **circular bioeconomy**, which arises from the ground and returns to the ground, can play a key role in soil regeneration, not only thanks to its low-environmental-impact bioproducts, but also through the enhancement of organic matter and the closure of the carbon cycle. In fact, thanks to the soil's ability to capture carbon from the atmosphere, its protection contributes to the achievement of further challenging objectives such as the reduction of greenhouse gas emissions into the atmosphere by 55% by 2030 and climate neutrality by 2050.

As recalled by **Andrea Vettori**, *"the lack of a coherent legislative framework for soil is a gap that can limit the achievement of the European Green Deal. For this reason, we need to mobilize all levels (government, academia, stakeholders, civil society) to openly support the efforts at the European level to define a common legal framework on soil protection and sustainable management, filling the existing gap in the European legislation. And once the legal proposal on soil will be tabled in spring by the Commission, having the Italian Government fostering support for it with other EU countries in the Council of Ministers"*.

According to **Alessandro Ippolito**, the **CAP** has a high potential in stimulating new and integrated sustainable management of the soil resource (over 80% of land use in the EU depends on the CAP itself). However, as seen with the pandemic, the war and the energy crisis, its approach may be



inadequate for the actual time and need updating. This is another step in which efficient data can be decisive.

The EU is preparing the ground for the launch of **Carbon Farming** models, new systems of enhancing best practices for the sequestration of carbon from the atmosphere in agricultural soils, which could also open new doors for the market for agricultural actors. However, the system is based on results and therefore raises the problem of developing effective monitoring and verification systems that rely on a harmonization of methods.

According to the Ministry of the Environment and Energy Security, **Laura D'Aprile** explained, **in Italy** the guidelines for the development of the circular bioeconomy and soil regeneration will have to foresee an opening to technological development, data acquisition, governance improvement for land and water use and procedures streamlining in the case of urgent activities.

In order to support the evolution of the soil issue in a better, quicker and more functional way, it is useful to transform some of the matters into **business cases**, which can serve as a basis for stakeholders and policy makers. In this scenario, as in that of data and monitoring, the need to **adopt frameworks** to improve **development and R&I skills on bioeconomy** has emerged. To promote soil regeneration, it is necessary to **enhance research, education**, and to **increase agricultural support** (for example through advisory systems for farmers), on new practices too. The goal of identifying 100 Living labs and lighthouse farms, established by the Mission *A Soil Deal for Europe* (and promoted by the Re Soil Foundation in collaboration with stakeholders on the Italian area), constitutes a useful basis for the dissemination of initiatives and ideas in support of soil policies.

In this context, **data and their gathering** play an essential role, therefore various means have been set up in the EU for their collection (the EUSO as an example). However, obstacles still exist in terms of transposition of this importance (only 8 countries provide data) and harmonization of methods for collection and analysis.

There are **European projects** addressing these issues. For example, the European EJP SOIL and the SoilHub in Italy and PREPSOIL on an international scale, presented during the States General by Margrethe Balling Høstgaard and launched in July 2022 to prepare the ground for the Mission *A Soil Deal for Europe*. The project is promoted by 19 partners, including Re Soil Foundation, and has obtained 5 million euros in funding from the EU for a three-year programme. Among its objectives: dissemination and stakeholder engagement on soil health; mapping and assessment of soil needs; development of community engagement initiatives; soil monitoring; knowledge transfer and co-creation in Living Labs; promoting education and awareness about soil. To achieve these goals, an essential tool is the ambitious creation of a web portal.



National Session

Speakers

- Sonia Filippazzi – Environmental journalist, RAI (Chair)
- Anna Luise – DG GLO ISPRA (Chair)
- Michele Munafò – SINA Manager, ISPRA
- Silvano Pecora – Ecological transition and green investments department
- Antonio Papaleo – CREA
- Francesca Assennato – Integrated land monitoring unit, ISPRA
- Germana Di Falco – Regione Campania
- Michele Mazzola – Head of International Research MUR
- Walter Ganapini – President CTS Re Soil
- Maria Letizia Gardoni – President, Coldiretti Bio
- Massimo Centemero – Director, Consorzio Italiano Compostatori
- Piero Gattoni – President, Consorzio Italiano Biogas
- Roberta Farina – Researcher, CREA
- Sara Guerrini – Public affairs agriculture Novamont, member of Re Soil Foundation
- Margherita Caggiano – Communication Manager, Re Soil Foundation

Opening the afternoon session, **Anna Luise** reminded us that soil is a precious resource for guaranteeing human life. Protecting and conserving the earth is an issue that cuts across many other environmental issues and a healthy earth, with the ecosystem services it provides, must be considered a fundamental human right to ensure the very survival of individuals. Land degradation prevents its use. It is a gradual and hidden process, with potentially catastrophic consequences if ignored for too long, which arises from unsustainable soil management combined and exacerbated by the effects of climate change. Actions are urgently needed to stop the degradation and to recover degraded areas. Technical-scientific knowledge is potentially available for prevention and recovery interventions, but the main challenge is at an institutional and political level. Theme fully recognized by **the 2030 Agenda**, that together with the **UN Convention to Combat Desertification**, include the objective to achieve a reduction of land degradation and then a balance between land degradation and the restoration of the services it provides, reaching the *Land Degradation Neutrality (LDN)*.

According to the ISPRA data illustrated by **Michele Munafò**, *“the costs of restoring ecosystem services are lower than the costs caused by the loss of these services, deriving from soil degradation. Soil sealing alone costs Italy over 3 billion euros a year and our country lost more than 2 square meters per second in 2021 (the highest value in the last decade) and the level of artificialization of our soils is almost double the EU average.”*

At the **Italian level**, there is currently **no national law on soil** that is capable of tackling all its problems in an organic way (from the loss of fertility to consumption, hydrogeological instability, and waterproofing) and at the European level there are still many obstacles that prevent a real implementation of the circular bioeconomy and consequently multiple opportunities for regeneration.



The Ministry of the Environment and Energy Security promotes soil protection, as explained by **Silvano Pecora**. For example, **stopping soil consumption** is one of the objectives in the **National Strategy for Sustainable Development**. An attempt is also being made to develop a **national table** on sustainable land use. In particular, for the Land Degradation Neutrality goal a national working group has been set up. Moreover, Italy has set up 5 eco-schemes for the CAP. Among them, there are the eco-scheme 2 (ECO 2), on the grassing of tree crops, ECO 4, concerning the introduction and management of rotations, and ECO 5, containing specific measures for pollinators.

It is necessary to harmonize the regional rules at national level and integrate them with the Community directives, avoiding overlaps and contradictions. Currently, the main differences concern the definitions, the objectives, the structure of the measures, the monitoring methods and the implementation levels. A **multilevel approach**, as suggested by **Francesca Assennato**, must be adopted, involving the EU, the State, the regions, district authorities and municipalities in a collaborative way. For example, some subject matters have been managed in a very contradictory way till now, e.g., the conversion to renewable energy, which on one hand allows the transition to a more sustainable economy but on the other hand often implies the consumption of fertile soil for new photovoltaic systems, when it would be possible to greatly optimize the surface of existing infrastructures for this scope.

*“The **regions** are entrusted with multiple roles. One of the problems related to this multiplicity is the lack of transparency in the management of the available funds and the creation of elusive measures, which in actual fact have sometimes led to the waste of resources. It is necessary to **work on complementarities**, to favor cooperation between projects, ideas, subjects, measures, and laws, avoiding opposition and contradiction between different operations. Too often we are cut too close to deadlines for funds expenditure due to poor management and planning: a new model of public finance and sustainable economy is needed”*, has explained **Germana Di Falco**.

In Italy, the Ministry has also set the goal of understanding how to co-finance the elements for **research development**. An important, fundamental, issue is “time”. There are several funding instruments (e.g., Horizon programs for soil foresee €95.5 billion over the period 2021-2027). However, it is necessary to work on careful planning of projects, coordinating the efforts put in place, and in a timely manner in order to avoid wasting resources.

According to **Walter Ganapini**, *“science told us early that at 400 ppm (of CO₂) climate change would be irreversible and that organic matter in the soil was degrading and declining. However, solutions have not been identified and activated, sometimes due to conflicting interests. We need a **solution of continuity**, we cannot remain in the business as usual, because now we know that this development model generates huge social costs, far higher than profits. We are now at almost 420 ppm, and according to forecasts at 450 ppm humans risk extinction. Let's take it upon ourselves to force with absolute legitimacy what is needed to **generate change**.”*

It is essential to capitalize on what has been built so far and to ensure that the soil and its regeneration can increasingly be at the center of Italian and European strategies for the ecological transition, otherwise the transition will continue to not happen.



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To combat climate change, carbon must be brought back to the ground in the form of carbon stock, not refractory, but alive and participating in soil processes. Obviously, it is not a panacea, but it is part of a complex system that can help solve the problem. The future soil law will have to launch challenges to find solutions and not only limit itself to repair what we have damaged over time.

Two main lines of action emerged during the General States for soil health :

1. The diffusion of **knowledge**, capable of generating greater awareness and new skills
2. The **collaboration** among different parties. To do so, dialogue and partnership among the stakeholders are crucial.

[1] *which includes the Ministers – MIPAAF, MUR, MISE, MITE, MI; le 20 Regioni; l’Agenzia di coesione; i tre Cluster Tecnologici Nazionali (Spring, BIG, CL.A.N.)*

[2] [La rigenerazione del suolo deve partire dalla bioeconomia circolare](#), 2022