

Effective global policies to protect our most valuable resource, that supports life on Earth



The Soil Policy event at the World Congress of Soil Science 2022, drew together an expert group of invited speakers, policy makers, academics, regulators, advisers, politicians, scientists, students and industry. Focused on solutions and contribution to environmental targets, such as net zero; climate change mitigation and adaptation; food security and biodiversity recovery, the day facilitated knowledge exchange and engagement.

The complex soil policy challenges were debated with barriers, challenges and learnings highlighted and actions needed to address the degradation of soils discussed. Common threads which ran clearly through the day's discussion bode well for future collaboration to deliver more effective soil policy and governance to drive action and protect our soils for the future.

BARRIERS AND CHALLENGES

Overarching framework for soil policy: Currently there is no binding overarching framework that strategically defines policy priorities, goals or parameters for soil protection. Long-term actions are more complex to control, less visible, harder to measure and more likely to involve controversial choices, making it more difficult to make progress without building coalitions.

Siloed working: The nature of siloed working and the lack of focus on prevention make it easier for policymakers to pursue short-term solutions. Many soil policies can be difficult to formulate and implement well, because they depend on a level of knowledge, mobilisation, governance and policy control that is rarely possible in real life. For more complex problems, it is often not entirely clear what is driving a problem, and the number of stakeholders involved make it difficult to disentangle cause and effect.

Overcoming systemic changes: Countries and regions are facing large, systemic challenges, such as financing gaps, tackling cross-cutting issues and breaking down boundaries between different disciplines and policy areas, resulting in an inability to invest in research, data analysis, and a lack of enforcement capacity when policies and actions are adopted.

Slow uptake of actions: Fostering the uptake of sustainable soil and land management is a complex process and impacting policy is difficult, due to the challenges translating research into policy-speak and to those inherent in the policymaking process itself.

Gaps in knowledge and policy: Although progress has been made across the various sectors in adopting key policies and actions known to reduce soil erosion, degradation and pollution, significant gaps remain.

RECOMMENDATIONS

Rather than just focusing on personal, local and regional agendas, it is essential to think nationally, internationally and globally and highlight the real societal costs, such as inadequate nutrition, of soil pollution to government. Significant progress is needed to put into place the [Zero Pollution Action Plan for Air, Water and Soil](#), to protect and restore our soils, to adopt sustainable soil management practices, identify and remediate contaminated soil sites, and improve the monitoring of soil quality.

To create real change, where scientific knowledge best influences real-life policy, the British Society of Soil Science and our speakers recommended that: "to raise soil's political profile, we must look at three phases of soil policy evolution:

- **RAISING AWARENESS** – building an understanding among policy makers,
- **RAISING AMBITION** – joining forces and building a case for soil in pivotal umbrella policies
- **EXECUTION** – detailed and targeted policy development, building consensus at strategic and operational levels

To enable all of this we need consensus from the scientific community at the most fundamental level – on how we classify our soils, on the protocols for monitoring them, and that everyone can access and make full use of this critical information. This is vital so that common metrics can flow, and a common language and understanding can underpin every soil assessment and improvement initiative. This is the leadership we need from the scientific community." *Ellen Fay, Sustainable Soils Alliance*

WE CAN TAKE THE FOLLOWING STEPS TO ACHIEVE THIS TOGETHER:

RAISING AWARENESS AND
BUILDING AN UNDERSTANDINGRAISING AMBITION, JOINING FORCES
AND BUILDING A CASE FOR SOIL

EXECUTION

"Healthy soils need to be at the heart of the European Green Deal. [The Soil Health Law](#) will provide the path towards Healthy Soils across the EU by 2050. Sustainable soils should be the new normal for Europe, people, food, nature and climate. Soils are essential for achieving climate neutrality, a clean and circular economy, reversing biodiversity loss, providing healthy food, safeguarding human health, halting desertification and land degradation. A framework and a set of parameters are needed for protection, sustainable use and restoration of soils. Key action at national level were identified: set net land take reduction targets, integrate land take hierarchy and give priority to re-use and recycling of land and the quality of soils through appropriate regulatory initiatives." **Arwyn Jones, Joint Research Centre, European Commission**

"We need to safeguard and enhance the vitality and productivity of soil through scientific research and advancement and highlight how a comprehensive strategy is needed to increase the adoption of soil health management systems. To assess soil health, we must identify the most effective indicators to qualify changes in soil health and develop a soil health reference for farmers and stakeholders. We must also make a soil business case." **Cristine Morgan, Chief Scientific Officer, Soil Health Institute USA**

"Soil science should play a crucial role in re-connecting stakeholders and citizens with the policy arena and the huge communication gap between researchers, the environmental policy arena and land users, among which farmers are the largest group, needs to be addressed. The focus needs to be on "services" provided by ecosystems to mankind in terms of producing healthy food, protecting soil and water quality, combating climate change and land degradation. Soils play a major role in all of this. Measurements can provide information on these services and on thresholds, separating 'good' from 'not good enough'. This would, when part of legislation, provide much needed clarity and in doing so, soil science plays a key role." **Johan Bouma, Emeritus Professor of Soil Science, Wageningen University**

"We all need to come together for the importance of soil being recognised, in the hope that our combined efforts trigger adoption by countries of different tools and definitions. Partnerships, gender balance and inclusion of youth in soil are crucial and should be common action. As the way forward we must continue advocating soil governance at regional and national level, raise awareness to the general public on the importance of soil, implement a new GSP action framework, promote soil solutions in the UN convention and advocate for investment on suitable soil management." **Ronald Vargas, Secretary of the Global Soil Partnership, Food and Agriculture Organization of the United Nations (FAO)**

"We must develop a national soil strategy with the overarching objectives: to reduce and manage soil consumption on the basis of an overall perspective, protect soil from harmful impacts, restore degraded soils, improve awareness of the value and sensitivity of soil and strengthen international commitment. Key factors for success include a high 'level of flight', loose co-operation with federal offices for agriculture and for spatial planning, the support of the minister in charge, goal of no-net-soil-loss as an attention-gathering topic, national and international activities and the 2030 agenda of the Global Soil Partnership (FAO 2012). The mission is to ensure that the functions of soil are guaranteed in the long-term, so that future generations are also able to use this finite, non-renewable resource for their own needs." **Ruedi Stähli, Scientific Officer, Swiss Federal Office for the Environment**



It is essential to balance immediate needs with longer-term investment, build a business case, model cost-benefit analysis and provide a clear roadmap to unlock value through technology and data linkage across businesses, government, communities and individuals. We must learn from other disciplines and industries, find common ground, link stakeholder groups, personalise each journey and move away from a one size fits all approach to deliver step changes, behavioural change and knowledge exchange.

"There is a real need to understand gaps in science related to climate change, to look at data infrastructure and soil health indicators that provide value for money and address the need for soil monitoring frameworks to underpin robust environmental policy development. International collaborations are key to success." **Mathew Williams, Chief Scientific Adviser (CSA) Environment, Natural Resources and Agriculture, Scottish Government**

"We must secure positive behavioural change of farms, delivering multiple public wins, empowering farmers to make better quality decisions, securing consensus and delivering integrity and transparency." **John Gilliland, Director of Agriculture & Sustainability, Devonish Nutrition**

"Restoring soil health means from the level of the farm up to the level of the food system with key focus on joining the dots between climate, nature and health and with soil health being at the heart of the shift to agroecological farming and land use. There are seven ways to restore soil health, looking at soil monitoring, increasing organic matter, reducing soil disturbance, covering bare soil with continuous plant cover, planting more trees on farmland, reducing soil compaction and designing crop rotation to improve soil health. It is important to link up farmers, academics, advisors, researchers and businesses to find lasting solutions to practical problems. The ideas are often coming from farmers themselves." **David McKay, Head of Policy (Scotland), Soil Association**

"Reliable and robust data collection, national soil testing programmes, better knowledge exchange - providing farmers and growers with the knowledge and skills they need, and taking a more tailored and holistic approach to encourage soil health, are key. Improved soil health provides multiple benefits for food production, climate resilience, carbon storage, water management and numerous environmental benefits. In our academic discussions and legislation deliberations, we need to make sure we create understandable policies for practitioners to deliver." **Phil Jarvis, Member of the NFU Environment Forum**

THE BRITISH SOCIETY OF SOIL SCIENCE: WHO WE ARE AND WHAT WE DO

Founded in 1947, the British Society of Soil Science (BSSS) is an international membership organisation and charity dedicated to bringing people together, sharing evidence-based information on soil, creating knowledge and improving education to help address global challenges and environmental and societal needs.

We invest in a future for everyone and are the go-to organisation for the media, policymakers, government, stakeholders and educators on all soil science related issues.

Contact exec@soils.org.uk for further information on this note, or any of the Society's activities.