HEALTHY SOILS

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The Role of Healthy Soil for Food System Transformation, Ecosystem Restoration and Climate Action

Prepared by the organisers of the UNCCD COP15 Food Day - Seeds for Change for a Nature-Positive Future

Key Recommendations:

In alignment with the U.N. Decade on Ecosystem Restoration (2021–2030) and the U.N. Food Systems Summit, this paper recommends that the global community needs to work toward:

1. Improving soil health on at least 50 percent of all agricultural land
2. Encouraging and supporting 100 million farmers to adopt improved soil-health practices
3. Mobilising USD 100 million in finance and investments
4. Increasing the current amount of annual soil-sequestered CO2 by five times

Why focus on soils?

Soils are one of earth's most valuable resources. They provide ecosystem services such as land productivity, flood regulation, nutrient cycling, carbon sequestration and biodiversity. In fact, one teaspoon of soil contains more biodiversity than there are people on earth. Farmers rely on healthy soils to reliably grow and produce food for everyone everywhere.

Each year, however, the world is losing approximately 36 billion metric tons[1] of nutrient-rich topsoil and 17 billion metric tons of cropland soil due to erosion, chemical inputs and climate change. Such land degradation negatively affects about 3.2 billion people – especially in developing communities – and costs USD 300 billion in lost agricultural production each year.

Investing in healthy soils therefore has the potential to:

- Increase food and nutrition security
- Improve livelihoods
- Aid in climate change mitigation and adaptation goals
- Enhance biodiversity above and below ground
- Restore ecosystems

In short, soil health is essential for sustainable food system transformations.

Fast facts

⅓ of soils are degraded worldwide, affecting an estimated 3.2 billion people[2]	Soils can store up to 4X more carbon than terrestrial vegetation[3]	Soil erosion affects roughly ⅕ farmlands worldwide[4]

The importance of good stewardship for healthy soils

Everyone — farmers, policy makers, businesses, and individuals — **has some responsibility to promote and support healthy soil stewardship practices.** While it is tempting to think that individual farmers should take on the primary responsibility for soil health on their land, the challenges they face may require other stakeholders' involvement. For example, smallholders may lack access to financing that would allow them to transition into soil restoration activities. The Coalition of Action 4 Soil Health (CA4SH)[5] aims to lift such barriers in knowledge, implementation, monitoring, policy, and financial investment that currently constrain farmers from adopting and scaling healthy soil practices. To do this, multi-stakeholder actors must work together to:

- Align public and private stakeholders so that **soil health considerations are integrated in policy** across local, national, and global scales
- **Work with and empower smallholder farmers** by facilitating accessible and inclusive multi-stakeholder partnerships
- **Address technical barriers for monitoring of soil health indicators.** The CIFOR-ICRAF Soil-Plant Spectral Diagnostics Lab[6], for example, uses visible, near-infrared (NIR) and mid-infrared (MIR) spectroscopy to provide the high-quality soil analytics.
- **Expand research** on soil health practices for developing agricultural communities
- Champion the business case for private investment in soil as a capital asset, and **significantly increase financial investments** by five to 10 times above current levels
- Significantly **increase the global land area that is under improved soil-health practices**

Equally important is the ability to measure results using achievable, measurable, and trackable targets. Already, CA4SH is working to **develop a systemic approach to improving soil health** that simultaneously benefits producers, the environment, the economy and strengthens climate change resilience and mitigation. These actions are aligned with the UNCCD's Land Degradation Neutrality (LDN) targets[7], which promote efforts to monitor and improve soil organic carbon.[8]

CA4SH members — including states, corporations, researchers, civil society groups, farmers organisations, foundations, and non-governmental organisations (NGOs) — will **collaborate through regional hubs that support the specific needs and priorities of local stakeholders.**

Furthermore, CA4SH is not the only global partnership focused on improving global soil health. Other interdisciplinary groups include, but are not limited to:

- The **Landscape Restoration Transformative Partnership Platform (TPP),**[9] which works towards evidence-based solutions that will encourage people everywhere to implement equitable and sustainable landscape restoration practices at scale, including those that promote healthy soils.
- The **Living Soils of the Americas (IICA)** [10] — a programme dedicated to enhancing Brazilian soils with agricultural incentives, among other things, that encourage farmers to update sustainable practices.
- The FAO **Global Soil Partnership (GSP)**[11] — a globally-recognised mechanism that works to promote collective action for sustainable soil management.
- **4p1000: Soils for Food Security and Climate**[12] — a plan that encourages Paris Climate Summit signatories to scale up regenerative farming, grazing and land-use practices.
- **The Soil Health Institute (SHI)**[13] — a nonprofit which seeks to safeguard and enhance the vitality and productivity of soil through scientific research and advancement.
- The **Global Soil Health Partnership (SHP)** — a farmer-led organisation that promotes the adoption of soil health practices for economic and environmental benefit.
- The **UNCCD**, which calls broadly for LDN and supports many other soil stewardship initiatives.

Therefore, it is essential to find synergies with existing initiatives that are promoting soil health.

References

[1]https://esdac.jrc.ec.europa.eu/themes/global-soil-erosion
[2]IPBES. 2018. The IPBES Assessment Report on Land Degradation and Restoration. Montanarella, L., Scholes, R. and Brainich, A. (eds.). Bonn: IPBES
[3]Prăvălie R et al. 2021. Arable lands under the pressure of multiple land degradation processes. A global perspective. Environmental Research 194:110697.
[4]Lal R. 2018. Digging deeper: A holistic perspective of factors affecting soil organic carbon sequestration in agroecosystems. Global Change Biology 24(8): 3285–3301.
[5]https://foodsystems.community/coalitions/coalition-of-action-4-soil-health-ca4sh-2/
[6]https://www.cifor-icraf.org/research/theme/soil-and-land-health/soil-plant-spectral-diagnostics-laboratory
[7]https://www.unccd.int/land-and-life/land-degradation-neutrality/overview
[8]https://www.unccd.int/resources/publications/realizing-carbon-benefits-sustainable-land-management-practices
[9]https://www.worldagroforestry.org/output/transformative-partnership-platform-tpp-generating-and-leveraging-evidence-landscape
[10]https://www.iica.int/en/press/news/brazil-launches-living-soils-americas-program-restoration-initiative-promoted-iica and#:~:text=%E2%80%9CLiving%20Soils%20of%20the%20Americas,25%20November%202021%20(IICA)
[11]https://www.fao.org/global-soil-partnership/en/
[12]https://regenerationinternational.org/4p1000/
[13]https://soilhealthinstitute.org/

Additional Links [highlights on the Coalition of Action 4 Soil Health (CA4SH)]:

- Our on-line document brochure: https://worldagroforestry.org/output/coalition-action-4-soil-health-ca4sh
- Webpage on UNFSS: https://foodsystems.community/coalitions/coalition-of-action-4-soil-health-ca4sh-2/
- Op-ed WSD 2021 https://www.indepthnews.net/index.php/opinion/4910-food-systems-transformation-must-be-grounded-in-healthy-soil
- Video on the Coalition: https://www.youtube.com/watch?v=aYOyWAKoro0
- World Soil Day: The Conversation Podcast: https://theconversation.com/soil-isnt-dirt-its-the-foundation-of-life-and-needs-real-care-173162
- "The U.N. Food System Summit is laying the groundwork for change – from the soil up"**:** https://forestsnews.cifor.org/74621/the-u-n-food-system-summit-is-laying-the-groundwork-for-change-from-the-soil-up?fnl=
- How soil can save us: https://www.devex.com/news/sponsored/opinion-how-soil-can-save-us-all-101619
- Embrace the Earth blog: https://www.thebrokeronline.eu/embrace-the-earth-soil-health-as-a-foundation-to-sustainable-food-systems/?utm_source=twitter+and+linkedin&utm_medium=post&utm_campaign=broker
- Co- authored blog from Action Track 3: https://medium.com/@WWFFood/unleashing-the-potential-of-nature-positive-food-systems-1dd623dafcde
- Shining a light: https://wle.cgiar.org/solutions-and-tools/science-driven-solutions/shining-a-light-on-soils-for-land-restoration/

The **UNCCD Food Day - Seeds of Change for a Nature-Positive Future** is co-organised by WWF, CGIAR, the Committee on World Food Security (CFS), FAO, CIFOR-ICRAF, TMG Think Tank, UN Environment Programme, IICA and the One Planet Network. The full day event, the first ever Food Day at a UN Conference of the Parties, encourages stakeholders to include food systems approaches in the implementation of the Rio Conventions on Desertification, Biodiversity and Climate. Organisers may hold individual opinions and positions on the topic of this briefing paper. The paper is not an official joint position from the organisers.

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