

Advocating for Soil Health in the Global Agenda



March 2024

**Healthy soil is central
for ecosystem
restoration, climate
change mitigation and
adaptation, and food
and nutrition security**



Healthy soil is the very foundation of our food systems and provides several vital ecosystem services.

95%

of our food is directly or indirectly produced on our soils

Sustainable soil management could produce up to 58% more food





Healthy soil is medicine

**More than 80% of antibiotics
(including penicillin) are
produced from soil.**

(D'Costa, Griffiths & Wright, 2007)



”

Healthy soil is nutrition
Soil provides critical nutrients
for plant growth.
Healthy soil = healthy food

(FAO, 2022)





Healthy soil is clean water

Healthy soil is the World's biggest natural water filter.

As water passes through soil pores, it is cleaned through biological, chemical and physical processes.

(Keestra et al., 2012)





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Healthy soil is life

One teaspoon of healthy soil contains around 3 billion bacteria from more than one million individual species and around one million fungi from hundreds of different species.

(Lehman et al., 2015)





Healthy soil is food security

95% of food is either directly or indirectly produced in soil, and one third of food is produced by smallholder farmers – the people most impacted by climate change and land degradation.

To securely feed our growing global population, we must remember to invest in healthy soil and agriculture as a solution.

(FAO, 2015; Ritchie, 2021)





Healthy soil is protection

Land and soil degradation are directly linked to loss and damage from climate-related disasters.

Compacted or eroded soil is unable to store or filter water, leading to serious events such as flooding and drought.

Other threats include water-borne disease, dust storms, and landslides. Healthy soil protects people and crops from these threats.

(Saco et al., 2021)





Healthy soil is precious

In some estimates, it takes 500-1000 years to form 1 cm of healthy topsoil. Yet, topsoil can be lost through soil erosion in an instant.

Regenerative agriculture places natural processes first and minimizes the disturbances that deplete soils of the conditions necessary to sustain life.

(FAO, 2017; Jones, 2002)





Healthy soil is carbon storage

To 1-m depth, world soils store 1,550 gigatons of organic carbon in soil organic matter, as well as 950 gigatons of inorganic carbon as carbonates, which adds up to three times the amount of carbon stock in the atmosphere and four times that in the vegetation.

Dr. Rattan Lal





Healthy soil is underestimated

On the importance of soil biodiversity: “It may be doubted if there are any other animals which have played such an important part in the history of the world as these lowly organized creatures [earthworms].”

Charles Darwin’s last published words, 1881





Healthy soil is colossal

The Humongous Fungus is the World's largest living organism, and it lives in 965 ha (2,385 acres) of soil in Malheur National Forest of Oregon, USA. It is a specimen of *Armillaria ostoyae*, or honey mushroom, and it is also the World's largest fungus.

(Schmitt & Tatum, 2008)





Healthy soil is mysterious

Despite soil being home to a third of all living organisms on Earth, only about 1% of the microorganisms found in soil have been identified so far.

The complex relationships between soil bacteria, fungi, nematodes, archaea, actinomycetes, algae, protozoa, insects, and more are not completely understood. Nature-based solutions allow them to do their thing.

(Robbins, 2013)





Healthy soil is the ability of the soil to sustain the productivity, diversity, and environmental services of terrestrial ecosystems.”

(Intergovernmental Technical Panel on Soils, 2020)

Scaling soil health globally is the main mission of CA4SH.





Building healthy soil ecosystems is central to achieving food and nutrition security, biodiversity, climate change and landscape restoration goals.

Dr Leigh Ann Winowiecki, Global Research Lead of Soil and Land Health, CIFOR-ICRAF and co-Lead of CA4SH

Healthy soil is related to all 17 of the Sustainable Development Goals - from environmental to social outcomes.

(Lal et al., 2021)



Thank you!

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