



Food and Agriculture  
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**NEWS RELEASE**

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## **It's alive! Soil is much more than you think**

**20 July, 2021, Bridgetown, Barbados** – When we go about our daily routines, most of us are unaware that beneath our feet lies an outstandingly diverse community of plants, animals and microbes that makes up our soils. Soils are more than just “dirt” – they are a major reservoir of global biodiversity, supporting agriculture and food security, regulating greenhouse gas emissions and promoting plant, animal and human health. Without them our world would not be the same.

We have taken soils for granted for long enough. Let us keep soil alive and protect soil biodiversity!

### **Here are only some of the reasons why we need to take action:**

#### **Soils are a reservoir of biodiversity.**

Soils house underground communities. There are more living organisms in a tablespoon of soil than there are people on Earth. Healthy, biodiverse soil includes the vertebrates, invertebrates, viruses, bacteria, fungi and plants that provide a multitude of ecosystem functions and services that benefit everyone and everything. In fact, soils are home to more than 25 percent of our planet's biodiversity. This diverse community of living organisms within them keep soils healthy and fertile. The whole world of creatures in the soil feed and protect plants and they, in return, nurture the soil.

## **Soil biodiversity is essential for our food.**

Soils are essential for our food systems. In fact, it is estimated that 95 percent of our food is directly or indirectly produced in our soils.

Healthy, biodiverse soils allow us to grow a variety of vegetables and plants needed for good human nutrition. The organisms in soil make nutrients available for plants. Nutrition depends on the availability and balance of nutrients in edible parts of plants, which depends on the presence of these in the soil. Therefore, the more biodiverse the soil is, the more nutritious our food is.

## **Soil biodiversity is necessary for our health.**

Soil biodiversity is an important source of the chemical and genetic resources that are needed for the development of new medicines. Soil microorganisms are used to produce antibiotics. For example penicillin, one of the most used antibiotics worldwide, originally comes from a small fungus living in the soil. Research on healthy soils can help us not only better understand microorganisms' role in the ecosystems but also how they can be used to improve food safety and keep pests and diseases under control. Studies also show that exposing children to microorganisms in healthy soils can improve their resilience to diseases and prevent health problems such as allergies, asthma, autoimmune diseases and depression.

## **Soil biodiversity helps us breathe and fight climate change.**

Soil organisms have the ability to break down or clean up certain types of pollution. For example, they can decompose some organic pollutants and convert them into non-toxic substances.

Not only that, but soils are an essential part of the carbon cycle. Healthy soils provide the largest store of carbon on earth. They can help regulate air quality and greenhouse gas emissions through carbon sequestration, which cleans air for us to breathe.

### **We need to keep soils healthy and diverse.**

Soil biodiversity is under threat. Some unsustainable farming practices, including tillage and misuse of agro-chemicals, the effects of climate change and soil pollution are just a few of the things that can have adverse consequences for the health and biodiversity of soils.

Land use change, unsustainable soil management practices, soil sealing, pollution and increased fire frequency can damage soil biodiversity and its functions beyond repair. Some ecosystems may never recover. We need to focus on preserving our soils before it reaches this stage.

### **We can help protect soil biodiversity.**

Sustainable soil management, tailored to the type of soil and its use, is an integral part of protecting soil biodiversity.

Some of these practices are simple, for example, avoiding the removal of vegetation from the soil cover, maintaining crop diversity, avoiding monocultures, composting and using natural shelters, such as hedges, to help prevent the erosive effects of wind and water on large fields.

Others are more complex. Crop rotation or agroforestry, for example, can mitigate climate change by reducing emissions and storing carbon in plant biomass and soils.

We rely heavily on soils for everything we do. They are the basis for food, feed, fuel and lie at the heart of many ecosystems. Fighting loss of soil

biodiversity is key to global food security and the achievement of more than half of the [Sustainable Development Goals](#). Soils are a highly valuable natural resource - but we must remember that they are also finite. This means that when soil degrades, it is not recoverable within a human lifespan. Sustainability is key. Let's start making soil health and biodiversity a priority.

**For more information:**

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