Earth's extraordinary soil for all living organisms

Learning, thinking, and acting!
MY NAME IS LUMBRICUS, I AM THE AMBASSADOR FOR THE SOIL.

I WILL TAKE YOU ON THIS FABULOUS EDAPHIC JOURNEY.
First, we need to understand what soil is!

Soil is made up of solid particles and pore spaces. Soil pore spaces are filled with water, air, and a lot of organisms.

Soil is the outer layer that covers the terrestrial surface. Solid particles are formed by inorganic matter (as weathered rock, mineral grains) and organic matter.
Soil is the natural medium for the growth of land plants. Soils store nutrients and water and support roots growth that sustain crops. Crops provide food, fiber, and fuel for us.

Let's learn about the importance of soil!

Have you ever thought about the importance of soil? And about the benefits we can get from the soil?

Soil supports biodiversity, providing habitat, food, water, and shelter for many animals.

Soil is the natural medium for the growth of land plants. Soils store nutrients and water and support roots growth that sustain crops. Crops provide food, fiber, and fuel for us.
Soil is where we build the infrastructure we use in our day-to-day, such as houses, shops, schools, crops, and pastures.
SOILS, ALSO, STORE ORGANIC CARBON AND WATER.
SOIL PORE SPACES STORE WATER. THE WATER BELOW THE SOIL IS THE GROUNDWATER.
Because of the various benefits that soils provide to us, we need to care about the soil. But... are all soils healthy?

Let’s understand the environmental problems related to soils!

Soil pollution is widespread. Soil degradation leads to the loss of nutrients, biodiversity, and stored carbon.
Oh no! Several benefits are lost by soil degradation. Soil salinity is one of the most widespread type of soil degradation. Processes of salinization and sodification are a global environmental issue that affect all living organisms. Salinization and sodification threaten the benefits provided by soil.
The source of salts in soil can be natural or anthropogenic. For example, natural sources refer to weathering of rocks. Man-induced sources include salts present in irrigation waters, animal wastes and synthetic fertilizers used in the farming activities.

What is salinization?

Soil salinization results from an excess of salts. Salinization refers to the total salt concentration in the soil, as sodium, potassium, magnesium, calcium and, chloride ions.
AND HOW DOES THIS HAPPEN?

(1) Salts dissolve in the water and move through the empty pore spaces of the soils.

(2) When the water evaporates, the salts accumulate in the soil.

Na+

When the problem is specifically related to the sodium ions, the process is called sodification.
Salinization and sodification reduce soil quality and, consequently, vegetation cover in the soil.

The excess of salts destroys the soil structure, causing loss of fertility and reducing plant growth. Thus, crop productivity collapses.

Also, salinization and sodification change local climatic conditions and affect soil biodiversity and the quality and quantity of the groundwater.
Let's think about what salinization and sodification do to the soil!

One of the biggest threats to our future is the loss in soil productivity. If we remember the benefits of the soil, sodification and salinization will affect in a bad way the quality and quantity of the food we eat and the water we drink.
LET’S SPREAD A “SEED OF INFORMATION” TO ALL PEOPLE TO KNOW ABOUT THE IMPORTANCE AND THE ENVIRONMENTAL PROBLEMS THAT AFFECT SOIL QUALITY.
CREATE A PODCAST OR A FLYER WITH ALL THE INFORMATION YOU LEARN AND SPREAD IT TO YOUR COLLEAGUES, NEIGHBORS, AND FAMILY.

LET’S TELL PEOPLE A LITTLE MORE ABOUT THE SOIL SALINIZATION AND SODIFICATION AND HOW IT’S IMPORTANT TO DISCUSS THESE ENVIRONMENTAL PROBLEMS WITH SCIENTISTS, POLITICIANS, AND COMMUNITY.

DISCUSSION ON SUSTAINABLE SOIL MANAGEMENT (AS BEST MANAGEMENT ON IRRIGATION AND FERTILIZATION PRACTICES, REFORESTATION, AGROFORESTRY) WILL HELP US KEEP THE SOIL HEALTHY FOR ALL LIVING ORGANISMS ON EARTH.
Let’s halt soil salinization, boost soil productivity together!
REFERENCES


