

## ENVIRONMENT

# World day to combat desertification, drought

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**T**HURSDAY (June 17) was designated by the United Nations as World Day to Combat Desertification and Drought. This commemoration started in 1995 when the United Nations General Assembly acknowledged drought and desertification as global problems affecting all regions of the world.

The same year the United Nation Convention to combat desertification was implemented. The aim of this observance is to highlight the need to stop the desertification process and to draw attention to dry lands.

This year's theme was "Enhancing soils anywhere enhances life everywhere".

The goal of this theme is to bring awareness that drought and land degradation has seriously affected the biodiversity that call the soil their home. In the following paragraphs I will go through some of the threats soils face in terms of lessening their quality

and quantity and the resulting effects on humans as well as some methods that can alleviate the problem and finally, how soil-dwelling organisms are necessary for soil development and how they help to improve its quality.

Threats to soil include natural events like landslides and erosion. However, human activity speeds up or causes these natural occurrences on a more frequent basis. For instance agricultural practices like slash and burn agriculture, monoculture and intensive grazing exposes the soil to the elements like wind and rain where valuable top soil is eroded.

Also continuous monoculture or intensive farming removes nutrients from the soil without giving the soil time to regenerate these nutrients.

Land used for livestock farming or where heavy machinery continuously pass over, can cause soil compaction so that the soil does not get the air and water needed for nutrient cycling and the organisms that live in it.

When soil is mined for precious metals by quarrying to get raw materials for the construction industry, the top soil is removed

and often not placed in an agriculture area. Also when mining operations have ceased the area is often abandoned without the vegetation being replanted to prevent erosion.

Soil quality also determines food quality and quantity. One of the most obvious but extreme results of desertification and drought is death by starvation. However, with a limited supply of food, economic activities would cease to exist, since there would be less people present to do the jobs. There would also be less able-bodied people to work, as the lack of food would leave many people weak and susceptible to diseases.

Seventy-five percent of people living in developing countries depend on agriculture for food and a livelihood. Therefore loss in soil quality and quantity will affect the food security in these countries.

This in turn can also cause low or high intensity conflicts, as a loss in soil and soil quality affects food security, leading to a situation where the people that control the food supply control the people. This results in many people being

forced to leave their homes, thereby undermining national and regional security.

Unfortunately this situation forces people to leave their homes and land and these practices are done in another area, where they will continue practices like bad farming methods or mining and quarrying operations and spread desertification and the harmful effects that accompany it.

But practices like mixed cropping or crop rotation allows the soil to accumulate the nutrients taken out by the previous crop. Different crops take up different combinations of nutrients in different amounts.

What is taken out when crop A is planted is allowed to accumulate naturally during the time crop B is planted.

We also have to realise that what we do to the soil not only affects us but the many organisms that call the soil home, for example, worms, insects, nematodes, fungi, bacteria, the roots of plants and a variety of micro organisms. Just to give you an idea of how many organisms live in the soil, one hectare of soil contains five tonnes of animal life. To bring it

down to smaller proportions, a teaspoon of soil may contain about 6,000 different species and a billion bacteria.

These organisms also help to improve the quality of the soil breaking down the organic matter from dead and decaying plants and animals and thereby releasing nutrients needed by plants for healthy growth. Their movement through the soil also opens up air spaces to allow for oxygen to reach other soil-dwelling organisms as well allow for water to percolate through the soil, both of which are needed for faster decomposition of organic material as well.

In the end what needs to be realised is that healthy soil is needed to sustain life on this planet however; its health depends on how humans utilise the land. Soil takes a very long time to form, for instance, 2cm of top soil can take up to 500 years to form.

So it is easy to see how precious of a resource soil is. So in our own backyards, in our community or our country we should practice soil conservation and push for stricter soil conservation laws.