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YEAR OF SOILS: SOIL DEGRADATION DESTROYS PRODUCTIVITY

Who cares about dirt? Soil is the fragile skin on the earth that provides more than 95% of our food. Soil also provides an essential life-sustaining role in cleaning air and water.

When we lose our soil, many vital functions are also lost. It has been estimated that over 40% of the soil used for agriculture around the world is already degraded or seriously degraded and that half of the topsoil on the earth has been lost during the last 150 years. Soil degradation is the slow decline in land quality caused by human activity. We have plenty of reasons to be concerned with this growing threat to food security.

Soils become degraded from both man-made activities and accelerated natural processes. Some impacts of soil mismanagement and degradation include compaction and poor drainage, depletion of essential plant nutrients, rapid loss of organic matter, accumulation of salts, and acidification. Soil degradation frequently accelerates soil erosion and may result in permanent loss of a soils productive capacity.

Soil degradation is a severe challenge that threatens the sustainability of crop and livestock production worldwide. For example, in sub-Saharan Africa, about 65% of the land area is degraded, with devastating economic and human impacts.

Some major constraints to agricultural productivity in sub-Saharan Africa resulting from soil degradation include soil acidity and aluminum toxicity, nutrient depletion, and soil erosion with resulting shallow soils. The slow process of restoring these soils begins by balanced addition of crop nutrients and lime, adjusting cropping rotations to include cover crops, and adopting practices to halt soil erosion.

A major step in preventing soil degradation is proper use of plant nutrients. Fertilizers replace essential plant nutrients removed in harvested crops, preventing nutrient exhaustion of the soil. Several recent studies show that proper fertilizer use maintains or improves soil microbial activity, boosts inputs of crop residue returned to the soil, and can maintain soil organic matter...all while enhancing crop yields.

The damaging effects of soil erosion are also felt off of the farm. Streams and lakes can become clogged with sediment and nutrients lost from agricultural fields, damaging fish and aquatic life.

Erosion and soil degradation is usually a slow process, easily escaping our attention at first glance. However, their cumulative effects are devastating on many levels. Farmers everywhere should consider how they can protect their precious soil resources. Their livelihood and their neighbors depend on careful stewardship of the soil beneath our feet.

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