



IMPROVE AND MAINTAIN SOIL FERTILITY FOR PROFITABILITY



NATIONAL AGRICULTURAL VALUE CHAIN
DEVELOPMENT PROJECT

Introduction

Soil is like a barrel containing many macro and micro elements from which crops take up the quantity they need for their growth. If that quantity is not available in the root zone, crops will show reduced growth and eventually perish.

Basic principle to keep soils healthy and fertile is to always replenish the amounts of nutrients that are harvested with crops.

The challenge for most farmers is finding the right balance between the crop demands and the nutrient supply. Low soil fertility leads to low food, feed and cash crop as well as fodder productivity.

The causes of low soil fertility have to be understood as well as ways to improve it to enhance plant growth.

Causes of low soil fertility

1. Soil nutrients mining

This involves harvesting and removal of crops, trees, livestock, sand, stones and other resources removes nutrients from farms.

2. Soil erosion

This is removal of top soil by water run-off and wind. Water erosion is the most common and is worsened by cultivation in valley bottoms and steep areas.



Crop harvesting and removal of residues



Cultivation in valleys and steep areas

nutrients such as Nitrogen from the crops root zone after heavy rains or over irrigation.

5. Loss of nutrients in gaseous form when exposed to the air

This is common when manure and nitrogen fertilizers are applied and not incorporated into the soil

3. Poor farming practices

Burning of farm crop residues leads to washing away of nutrient rich ashes by rain water and blowing by wind. Improper timing and wrong fertilizer type application cause change in soil chemical properties. Non application of organic nutrient inputs such as cattle, goat/sheep and poultry manure lead to low soil fertility while ploughing up and down the slope encourages soil erosion.

4. Leaching of plant nutrients

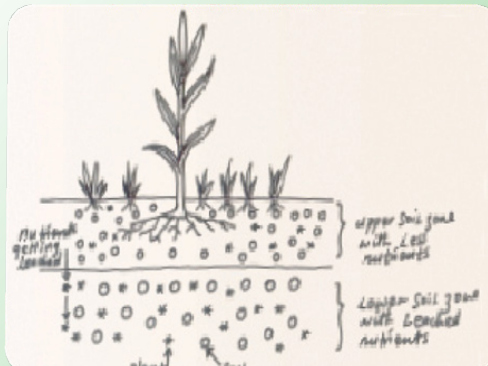
This is the washing away of plant

6. Monocropping

This involves cultivating one single crop on the same piece of land repeatedly over a long period of time. Such practice occurs where there is dependency of a particular crop either as a cash crop or food crop.

7. Overcultivation

This practice refers to excessive cultivation of land which may lead to degraded fertility and soil health arising from factors such as soil erosion.



Leaching beyond root zone

8. Contamination by dumping non degradable wastes

Dumping of materials like used engine and cooking oils, plastic and other synthetic wastes, cans, stones, waste cement and many others contaminate the soil. They change the soil's chemical and physical properties leading to low soil fertility.

ALWAYS REMEMBER

- Add more nutrients to the soil after crop harvesting
- Protect soil from erosion and do not burn crop residues
- Incorporate right quantities of manure and fertilizers into the soil
- Avoid over irrigation
- Practice crop rotation
- Avoid over cultivation
- Do not dump non degradable waste materials on farm land.
- Leaves the fields fallow for a season before the next cropping



Well fertilized maize for more food and income



Well fertilized fodder for more milk, meat and income



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