

CLIMATE-SMART PRACTICES of FARMERS in the ULUGURU MOUNTAINS, TANZANIA

Smallholder farmers are adopting climate-smart practices to have more food and more secure livelihoods, and to conserve their water, soil and trees.

FARMING with CONSERVATION AGRICULTURE

Conservation agriculture has three key elements that contribute to improving food production and conserving healthy soil. It is also an alternative to slash-and-burn agriculture, which makes soil less fertile and contributes to deforestation.

Key Elements

DON'T DISTURB THE SOIL



Undisturbed fields preserve soil organic matter, protect the soil structure and keep the soil healthy. This improves soil fertility and productivity.

- Soil is not compacted, as it is when the land is plowed.
- Soil organic matter is conserved.
- Soil stays on the field and doesn't run off when it rains.
- No time is lost on plowing.

COVER THE SOIL



Crop residues or cover crops keep the soil on the field and store water and nutrients for crop growth. Also, soil cover doesn't allow weeds to grow and compete with crops for water and soil nutrients.

- Soil cover preserves soil moisture and reduces water losses from heat.
- Crop residues break down and provide organic matter to the soil.
- Soil is protected and doesn't run off when it rains.
- There are fewer weeds because they cannot grow when the soil is covered.

PLANT DIVERSE CROP



Diverse crops produce several harvests, so if one crop fails, there is less risk of food insecurity. Moreover, planting legumes before or with the main crop is good for soil health and provides nutritious and tasty beans.

- Diverse crops increase productivity.
- Legumes enrich the soil with nitrogen.
- Weeds and diseases can't develop.

Why should farmers adopt conservation agriculture?

- To cultivate the same fields without having to change and open up new fields
- To produce more food on the same fields
- To ensure crops have adequate soil, water and nutrients, and maintain soil
- To improve soil fertility and get higher and more stable crop yields
- To reduce labour and reduce the need for expensive artificial fertilizers

How does conservation agriculture reduce climate change and its impacts?

- Conservation agriculture improves soil moisture and makes better use of available water, which reduces the risks of crop failure during periods of low or no rainfall.
- It increases carbon and organic matters in soil and improves soil fertility.
- By not plowing and burning the fields, greenhouse gases emissions are reduced.



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COMBINING TREES with CROPS

Agroforestry is the integration of trees in the farming system.



Why are trees good for farmers and crop production?

- Trees generate fruits, fodder, fuel, building materials and income.
- Trees provide shade and maintain soil moisture.
- Tree leaves (they fall or are cut) are a good fertilizer.

How does agroforestry reduce climate change and its impacts?

- Trees absorb carbon dioxide and release oxygen.
- Trees create shade, maintain humidity and soil moisture, which reduces drought and floods.

COOKING with ENERGY SAVING STOVES

Cooking on 3-stone stoves consumes more wood than cooking with an improved stove with a closed structure that protects the flame. When the flame is protected, the fire uses less wood to cook the same meal.



Why should each household have an improved cooking stove?

- It decreases the amount of firewood used to cook meals.
- It reduces smoke from cooking, which helps relieve breathing problems.
- It reduces time spent collecting wood or money spent to buy wood or charcoal.
- Less branches and trees are harvested and cut for firewood.
- It creates additional income for local people who build the improved stoves.

How do energy saving cooking stoves reduce climate change and its impacts?

- Less wood is collected from the forest.
- More time or income can be spent on other activities.

CARING for SOIL and WATER

Practices that conserve soil and water reduce soil losses from surface runoff and improve water quality in rivers. Some examples of these practices are terraces, contour bunds, infiltration ditches, trash lines, water harvesting pits and riverbank protection.



Why should farmers adopt practices that conserve soil and water?

- Most of these practices improve soil fertility and productivity.
- Water in rivers stays clear.
- Water enters into the soil.
- Soil is kept in the fields and not washed away.



How do these practices reduce climate change and its impacts?

- They integrate trees and shrubs in the farming system, which increases carbon.
- They reduce the impacts of floods and drought.

