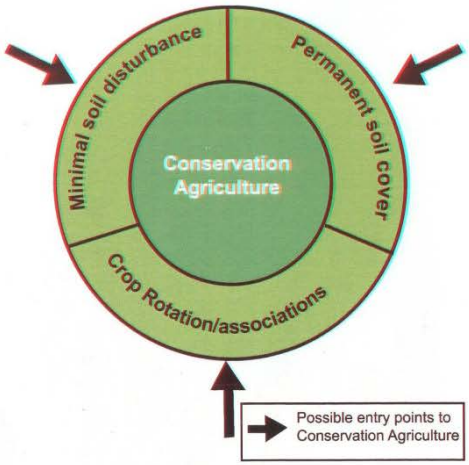
What is Conservation Agriculture?



Conservation Agriculture is the SIMULTANEOUS practice of **minimal soil disturbance, permanent soil cover, and crop rotations/associations**

Minimum soil disturbance = zero tillage = no tillage = direct planting.

Permanent soil cover with crop itself, cover crops, residues and/or mulch.

Crop rotations/associations through crop sequences, intercropping, relay cropping and/or mixed crops.

The term ***Conservation Tillage*** is also used in Africa. It includes ripping, tied ridges, basins, strip tillage, etc. Conservation Tillage is a gateway to progressively achieve minimal soil disturbance as in conservation agriculture.

ACT African Conservation Tillage Network

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Information Source Links: The ACT website www.act-africa.org, offers its members a new platform to effectively share and exchange information easily.

Additional information can also be obtained from:
FAO, Conservation Agriculture information at
http://www.fao.org/ag/ags/AGSE/main.htm

CIRAD, French Agricultural Research Centre for International Development
http://agroecologie.cirad.fr/dmc/index.php

Conservation Agriculture
The future of Africa

Achieving **food security** in Africa is a major goal. **Conservation Agriculture** represents a sustainable means towards this end

Minimal soil disturbance

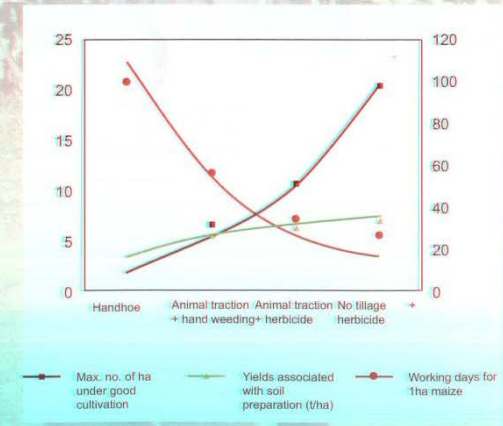
Ploughing:

- Is costly in equipment and labour
- Accelerates soil and moisture losses
- Destroys the soil structure
- Creates compacted layers
- Delays planting (unless timely)
- Is harmful to soil flora and fauna

Direct seeding with a hand jab planter in a mulched field.

Alternatively, mechanical tillage can be replaced (saving labour) by the action of crop roots and enhanced soil fauna improving:

- Soil structure at depth
- Soil moisture storage capacity



Comparative cultivated area, yields and man-days associated with different tillage systems in Ghana (Soza et al, 1998)

Soil permanently covered

Bare soil:

- Is prone to erosion
- Suffers high evaporation losses
- Suffers high daytime surface temperatures

Vegetables growing in a well mulched field

Soil cover:

- Enhances moisture conservation
- Suppresses weeds
- Reduces erosion
- Enhances soil fauna and micro organisms
- Reduces soil temperature variations

Enhanced interaction between soil fauna and micro organisms through mulching

Crop rotations and associations

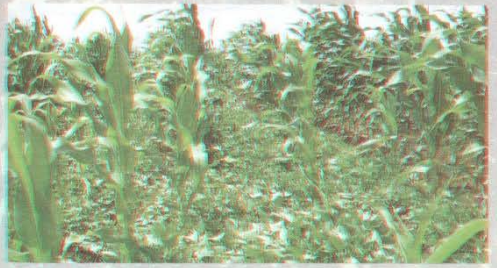
Mono-cropping

- Leads to proliferation of weeds
- Increases incidence of pests and diseases
- Depletes nutrients

Nutrient deficient maize crop (note the bare ground surface)

Crop rotation and associations enhance:

- Nutrient uptake and replenishment
- Control of weeds, pests and diseases
- Food security
- Carbon sequestration



A healthy intercrop