

EXPERIENCE FROM CONSERVATION AGRICULTURE IN TANZANIA



Ministry of Agriculture Food Security and
Cooperatives

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Background



- **Use of mechanical tillage for seedbed preparation and weed control has induced:**
 - Deterioration in the quality of soil
 - Decline in soil fertility.
 - Destruction of soil structure
- **Increased land management costs .**
 - In 1999 tractor ploughing was 25 USD \$/ha
 - 2014 the cost of tractor ploughing has escalated to 75 USD \$/ha.

Background



Conventional tillage results into
severe soil degradation

Background -CA Concept & Technology Introduction to Tanzania

- Due to declining production and land degradation, introduction and promotion of a more sustainable land management practices became necessary
- The idea of introducing Conservation agriculture (CA) based on three principles in the sub-Saharan region was initiated by FAO in 1998 when an international workshop on Conservation Tillage for Sustainable Agriculture was held in Zimbabwe.
- The principles include minimum disturbance of the soil, soil cover and crop rotation
- In Tanzania, CA started in 1996 using minimum tillage with the Selian Agricultural Research Institute (SARI) and TFA.
- Rippers and subsoilers were introduced to ameliorate hardpan

... Introduction...

- In 2004, MAFC in collaboration with FAO initiated a pilot project to introduce CA - Conservation Agriculture for Sustainable Agriculture and Rural Development (CA-SARD) and a TCP project in six districts of Kilosa, Mvomero, Mbeya, Arumeru, Karatu and Bukoba rural (TAMS, 2006).
- In 2013, Farm Mechanization & Conservation Agriculture for Sustainable Intensification (FACASI) 4 years project was launched in Arusha .
- There are other actors who have introduced CA in various parts of the country in collaboration with LGAs

Adoption:

In Tanzania, CA is now adopted by over 10,000 farmers across the country (Projects plus other CA partners) i.e. Districts (Local Government Authorities- LGAs), CBOs, FBOs and NGOs (WADEC, RECODA, Canadian Physicians for Aid and Relief (CPAR), GATSBY Trust, , LIMAS Agha Khan Foundation and CARE International).

Coverage:

- About 14,200 acres are currently under CA in Tanzania (mainly Northern Zone, Lake zone, Southern Highlands, Southern Zone and Eastern Zone).
- There are various types of CA that are practiced
- These include minimum tillage (subsoiling, ripping) using animal and tractor drawn implements.
- Planting basins
- Direct seeding using hand jab planters, animal and tractor drawn direct seeders
- Use of cover crops for weed control and income
- Main challenge has been availability of CA implements in the market

Current status:

Conservation Agriculture practices currently used by farmers in 2014 included:

- Minimum soil disturbance (ripping, subsoiling);
- Planting of soil cover crops (e.g. *Dolichos lablab*, Pigeon pea etc.) retaining of cover crops on the field after harvesting;
- Neither burning / removal of crop residues nor free grazing in the field;
- Planting of trees in boundaries;
- Use of manure (FYM);
- Weed management: Suitable weed management options (chemical, mechanical, crop rotation and biological);

Current status

- Machinery Design and development of CA-based crop establishment and herbicides spraying machinery, implements, tools for smallholders;
- Commercialization adoption and continuous improvement of CA-based technologies e.g Farm Mechanization & Conservation Agriculture for Sustainable Intensification (FACASI) research project at Selian, Arusha) and
- Policy and institutional framework for the adoption of CA.

The outcomes:

- **Yields:** 3 bags /acre in **2005**
- **Yield increased** from 15 to 25 bags and above per acre in **2014**
- **Time used:**
- **Land preparation** 8 hrs in **2005**
- **Seeding** 6 hrs in **2005**
- Land preparation: 3 hrs (**5 hrs saved**) in **2014**
- Seeding: 2 hrs (**4 hrs saved**) in **2014**
- ***Farmers use saved time for other developmental activities.***
- **Labor used:**
- **Land preparation** 4 Persons in **2005**
- **Seeding** 4 persons in **2005**
- **Labor for land preparation:** 2 persons in **2014**
- **Seeding:** 2 persons in **2014**

General achievement



- CA reduces soil erosion, regenerates soil fertility, increase food production income and food security and farmer's livelihood improvement.
- In areas where farmers have adopted CA, yields have increased, family welfare improved tremendously
- Crop failures are a history for CA practitioners

Sub soiling; knife rolling; direct planting and cover cropping.



Conclusions and Recommendations



- The importance of CA in the light of the Climate Change is one of the more important CSA initiatives
- Promotion and Adoption of CA should be reflected in policies, strategies and plans at all levels
- A more better coordinated focus is necessary
- Establishment of National Conservation Agriculture Task Force (NCATF)

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The Ministry has received some funds from COMESA through FAO to establish a National Conservation Agriculture Task Force

The National Task Force that will:-

- Provide a platform for the coordination of stakeholders working within the country to address the constraints on the adoption of CA
- Raise awareness and lobby at all levels within the country and
- Develop programmes to ensure that CA becomes a leading farming practice

The Roles of The NCATF



- Coordinate the work of stakeholders with a national perspective on CA and CSA development.
- Develop and run national projects related to CA promotion
- Resource mobilization for national CA activities
- Capacity building and training in CA at a national level
- Identify and facilitate national and farm based research on the local adaptation of CA principles
- Advocate and support national policy development to encourage CA adoption
- Make linkages with the supply chain at a national level

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- Our major recommendation is to have all stakeholders collaborating so as encourage farmers to adopt CSA initiatives for sustainable agriculture, food security and improved livelihoods in the country

End



- Thank you for your attention