Country presentation on Agricultural Mechanization in Tanzania

Presentation to Workshop on “Boosting agricultural mechanization in rice-based systems in sub-Saharan Africa”
In Saint Louis, Senegal 6 – 8 June 2011
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1. Introduction

- Tanzania has an area of 945,239 sq. km (94 million) ha
- 44 million ha are classified as suitable for agriculture.
- About 10.1 million ha or 23% is under cultivation.
- Agriculture is the leading sector of the economy.
- It accounts for about 26% GDP
- Over 80% of its 40 million people live and earn their living in the rural areas with agriculture as the mainstay of their living.
- Smallholder farmers cultivate between 0.2 and 2.0 ha.
- The level of mechanization is low with the hand hoe dominating in the farming systems.
- The use of animal traction is estimated at 24% while mechanical power is estimated at 13%.
2. **Obstacles**

Main constraints to the development of mechanization:
- Low purchasing power of most small scale farmers
- Low producer prices
- High cost of agricultural machinery
- Lack of agricultural credit
- Lack of well trained operators and mechanics for farm machinery
- Lack of suitable machinery packages for main agricultural operations
- Importation of tools, equipment and machinery of poor quality.
- General poor technical know how
Obstacles cont’d

Service providers comprising of manufacturers, importers, dealers etc. are constrained by:

• Inadequate business knowledge and poor technical knowledge in agricultural machinery.
• Inadequate capital due to lack of trade financing.
• Low volume of business resulting to poor cash flow due to the seasonality of demand of agricultural machinery and implements.
• Poor working tools, equipment and capacity under utilization.
3. Opportunities

- Mechanisation of agriculture has the potential to turn idle land into productive land for national economic growth.
- Importation trends show a steady increase in number of imported mechanical power machines.
- Demand for two axle tractors and implements is 1500 – 1800 p.a.
- Demand for single axle tractors is 1500 – 2000 p.a.
- Use of secondary tillage implements is limited (there is room to introduce and promote their use).
- The private sector is being encouraged to acquire machinery and provide hiring services to farmers for primary and secondary agricultural operations.
4. Research and Development

R&D is handled by:

- The Sokoine University of Agriculture
- The University of Dar es Salaam
- Ministry of Agriculture Research Institutes and
- Research and Development Organizations of the Ministry of Industries, Trade and Marketing (MITM).
R&D cont’d

• Mechanization research under the MAFC is mainly undertaken at the Uyole Agricultural Research Institute.
• Research has been carried out in diverse themes such as:
  - development and evaluation of improved soil and water conservation techniques based on animal drawn equipment;
  - development of labour saving weeding technologies;
  - conservation agriculture including no tillage production systems and use of cover crops;
  - improvement of storage structures for grain and assessment of plant materials with insecticidal properties for grain storage.
Institutions under MITM involved with R & D include:

- **Small Industries Development Organization (SIDO)** that is charged with developing and promoting indigenous entrepreneurial base in the small scale industries and micro businesses.

- **Centre for Agricultural Mechanisation and Rural Technology (CAMARTEC)** charged with development and dissemination of improved technologies for agricultural and rural development and testing agricultural machinery.

- **Tanzania Engineering and Manufacturing Design Organisation (TEMDO)** promotes engineering design, technology development and enhancement of the competitiveness of local manufacturing enterprises.

- **Tanzania Industrial Research and Development Organization (TIRDO)** which is responsible for carrying out applied research and provision of technical services to industries.

- **The Tanzania Commission for Science and Technology (COSTECH)** is responsible for co-coordinating and promoting research and technology development activities in the country.
5. Government strategy

The government has devised some strategies to cope with the prevailing constraints:

- Provision of affordable loans through the Agricultural Inputs Trust Fund (AGITF). By December 2010 loans for 569 two axle tractors and 193 single axle tractors were provided to farmers.
- Empowering farmers to acquire farm machinery through DADPs. In 2009/2010 a total of 2,154 power tillers and 53 two axle tractors were provided to farmer groups through 20% contribution.
- Empowering farmers to acquire farm machinery through DASIP where 300 single axle tractors were provided to farmers in the Lake Zone on above arrangement.
- The government negotiated a soft loan through a line of credit from the Government of India to enable procurement of 1860 tractors and implements, irrigation pumps and parts from India.
- The Government has established an agricultural window at the Tanzania Investment Bank (TIB).
Rotavating using power tiller
Strategy to increase production in irrigation schemes

Transplanting by hand

Transplanting is easier and efficient

Hand transplanting is labour intensive

Push weeder for weeding
Government strategy cont’d

• The government is in the process of establishing an agricultural bank to offer long term credit
• The government is promoting contract farming
• Promotion of Warehouse Receipt System operated by Cooperative Unions
6. Concluding Remarks

- In order to increase agricultural production and returns from agricultural there is a need to increase the number of farm machinery working in agriculture
- A more consolidated program is needed
- An analysis on the participation of the private sector should be done and modalities of implementation worked out
- Short and long term plans should be drawn indicating specific actions and outputs to raise the level of mechanization
Concluding Remarks cont’d

• For paddy cultivation, power tillers have worked quite successfully under small scale irrigated schemes.
• It is proposed that transplanters both walking and riding types should be introduced and promoted in irrigated schemes.
• Weed control equipment are essential to alleviate drudgery.
• Small combine harvesters are needed to enable farmers harvest on time with minimum losses.
• Promotion of value addition processing, grading and packaging at farm/community level to secure reliable markets for farmers
END

THANK YOU FOR YOUR ATTENTION