



EMERGING DEMAND FOR MECHANIZATION OF RICE PRODUCTION IN GHANA: POLICY ALTERNATIVES

Summary:

The application of agricultural mechanization, along with other farm inputs contribute to crop, labour, and land productivity. Mechanization in the domestic rice production is imperative as far as meeting and sustaining the demand of rice is concerned. Achieving optimum levels of mechanization in the rice value chain depends on favourable policy, legal and regulatory environment. This policy brief highlights existing policy on Ghana's agricultural sector and recommends areas of policy intervention including cross-cutting areas of gender mainstreaming, youth participation and environmental protection.

1. INTRODUCTION

Population growth as well as rapid urbanization and growth in income per capita, has led to structural changes in consumers' behaviour and an increase in the demand for rice. This "rice diet transition" is a phenomenon, which has been observed in other West African countries in some cases as early as the 1970s (Nigeria) and has started in Ghana in the early 1990s. Ghana's rice consumption has seen tremendous increase sharply. Over the last 10 years (1999-2008) rice per capita rice consumption increased from 17.5 kg to 38.0 kg. By 2018 it is estimated that it will grow to 63 kg as a result of rapid population growth and urbanization. It is predicted to increase further due to high human population growth rate of 2.8% and a shifting demand to high value staples (MOFA 2001).

Rice production has seen considerable advances in agricultural mechanization. The value of small-scale, locally adapted machinery, specifically targeting labour-intensive activities such as land preparation, harvesting and processing cannot be overlooked.

The application of agricultural mechanization, along with other farm inputs contributes to crop, labour, and land productivity. Mechanization in the domestic rice production is imperative as far as meeting and sustaining the demand of rice is concerned.

“Achieving optimum levels of mechanization in the rice value chain depends on favourable Policy, Legal and Regulatory environment”

The lapses in the manual systems in farm operations often result in low productivity. A recent study conducted on the priority needs of rice producers, revealed mechanization as a major need in the production process.

This policy brief has the objective of:

1. Highlighting existing policy for the implementation of strategies to modernise Ghana's agricultural sector through mechanisation.
2. Presenting areas of policy intervention including cross-cutting areas of gender mainstreaming, youth participation and environmental protection that could be implemented within the Ghanaian context

under prescribed legislature.

WHAT HAS BEEN DONE

Agricultural mechanisation from a value chain perspective has been considered in policy considerations as far as the attainment of sustainable rice-based production systems in Ghana is concerned.

The Ministry of Food and Agriculture has an existing policy: Food and Agriculture Sector Development Policy (FASDEP II) and an Implementation Plan (METASIP) for the implementation of strategies to modernise agricultural sector through mechanisation.

The policy strategies in achieving food security and poverty reduction have rice as one of the selected commodities. The sector seeks to target 80 % small scale rice farmers and 20% emergent commercial rice farmers as stated in the MEDUIM-TERM Agricultural Sector Investment Plan (METASIP). The specific objective of the sector is to:

1. Improve the capacity of local rice industry to compete with imported rice in terms of price and quality.
2. Increase the market share of local rice as against imported rice
3. Establish strategic stocks in rice.

The government of Ghana identified the private sector to be better equipped to look after the day-to-day provision of farm inputs including machinery and associated vital machinery support services. As part of the Ministry's Accelerated Agricultural Mechanisation policy, about five thousand (5,000) of 30-50kW tractors (Figure 1 & 2) were imported and made available to farmers and other private sector operators giving them the opportunity to acquire within an agreed repayment arrangement.

One of the interventions proposed in the METASIP is to provide assistance to Private Sector to set-up commercially viable Agricultural Mechanization Services Enterprise Centres

(AMSECs -



Figure 1: Tractors at the Agricultural Engineering Services Directorate (AESD) Accra, awaiting distribution to farmers



Figure 2: Tractors at parking lot of a Farmtrac tractor dealer in Accra.

bulldozers, combine harvesters, planters etc.) at Strategic Locations.

The AMSEC concept was initiated in 2003 to provide timely and affordable mechanized services to farmers who cannot afford agricultural machinery on their own. Each AMSEC was allocated a package of five tractors with basic implements (plows, harrows), plus a trailer (IFPRI, 2013)¹.

According to the Agricultural Engineering Services Directorate (AESD) of the Ministry of

¹ International Food Policy Research Institute (2013): Working Paper 30, January 2013

Food and Agriculture (MoFA), the decision to allocate five tractors was based on the expectation that each AMSEC could serve in a season about 500 small-scale farmers with average landholding of 2.0 ha. Eighty-nine AMSECs have been established as of 2011 (IFPRI, 2013)² as indicated in Table 1.

Table 1: Package and allocation terms of agricultural machineries to AMSECs, 2008 to 2011

Criteria	2008	2009	2010	2011	Total
Number of AMSECs established	12	57	15	5	89
Package (Average number of tractors)	8.2	5.1	4.3	3.0	472

Source: Compiled from AESD data (2011).

THE WAY FORWARD

The total of 89 AMSECs established as of 2013 is not enough to bridge the mechanization gap.

Moreover, “the successful execution of the Agricultural Mechanization Services Enterprise Centres’ mandate and other Mechanization strategies in the Rice value chain in particular, however, depends on better Policy, Legal and Regulatory Environment”.

This policy paper recommends for the formulation of a Policy document targeting four main areas of intervention including the cross-cutting areas of gender mainstreaming and environmental protection. The proposed areas of policy intervention include:

1. Formulation of Farm Machinery Laws and Regulations
2. Cooperation between the Public Private Sector and Farmers
3. Gender Mainstreaming and Youth participation
4. Environmental Protection and Climate Change

Formulation of Farm Machinery Laws and Regulations:

Regulations and guidelines on the promotion of agricultural machinery would be useful in encouraging and supporting farmers, agricultural and operation organizations to use advanced and applicable agricultural machinery, promoting the mechanization of agriculture and developing modern agriculture.

Cooperation between the Public, Private Sector and Farmers:

There is a need to establish a network of agricultural machinery stakeholders to share experiences and to open platform for collective actions. This network can also press Government and policy makers to adopt favourable policy for appropriate agricultural mechanization.

Gender Mainstreaming and Youth Participation:

Introduction of labour-saving technologies and women-friendly machinery and tools are essential in addressing gender issues, especially in response to the current situations of rising labour scarcity and the increasing women’s work in agriculture due to the propensity of more men migrating to urban areas.

² International Food Policy Research Institute (2013): Working Paper 30, January 2013

The youth being eager to learn and technologically inclined, represent the driving force for agricultural mechanization. It must also be noted that youth representation in the formulation of agriculture mechanization policy formulation is very critical in making such policies attractive to the youth.

Environmental Protection and Climate Change:

Regulatory frameworks that protect and promote environmental quality and public health are essential to the sustainability of mechanization within the rice value chain and other sectors in general.

The AfricaRice (2011)³ shares in box 1: the necessity of mechanization in the rice value chain.

Box 1: *Mechanization: Essential for rice production and processing*

Mechanization is now essential for rice production and processing. If farmers want to intensify their cropping, they need to speed up the operations that are labour-intensive when conducted manually. For example, when NERICA production was doubled in The Gambia between 2007 and 2010, farmers found it difficult to harvest and thresh the extra rice, which resulted in reduced quality because of the delays.

In Senegal, high rice prices in 2009 prompted many farmers to grow a second crop, but they then discovered that the harvesting of that crop overran into the period when they should have been preparing the land for the main-season crop.

A recent ex-ante impact assessment conducted by the AfricaRice policy team gave a conservative estimate of 0.9 million t of milled rice saved by halving on-farm post-harvest losses through the use of appropriate technologies. This would save almost 17% of current rice imports, with a value of US\$ 410 million in 2011 prices! This in turn could raise about 2.8 million people in rice farming households out of poverty.

Source: AfricaRice (2011)

³ <http://www.africarice.org/warda/story-mechanization.asp> (Assessed July 30, 2015)