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Review Article

Agriculture and Food Security in Mozambique

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Abstract

The aim of this review is to participate in the debate on the role of agriculture in the development process as a tool to fight against poverty and to enhance population wellbeing in Mozambique through better access to nutrients. In this country there is still no accurate data on food production, consumption and trade trends in a large sample, although the complexity of the food security concept and the need of a multidimensional definition and approach are recognized. The increase in agricultural productivity is seen as a necessary, but not sufficient to achieve a sustainable food security in Mozambique or indeed in Sub-Saharan Africa. Different views on the relevance of agriculture for growth and development in Africa suggest different policy choices in this continent.

Keywords: Agriculture, nutrition, food security, poverty

Introduction

Sub-Saharan Africa being the poorest region in the world deeply needs a considerable transformation of its agricultural sector so as to induce a mitigation in food security problems (Chauvin *et al.*, 2012). Agriculture can bring growth in early development stages and also in poverty reduction. The failure of these targets has produced a long term and high levels of poverty in this region. Developing countries have been sustaining a small amount rich people instead of a general sustainable wealth for the majority of its inhabitants. For most of African countries, the agrarian sector provides a large share of GDP but its productivity is far behind that of other continents (Fig. 1) (World Bank, 2015) and of its potential (FAOSTAT, 2017).

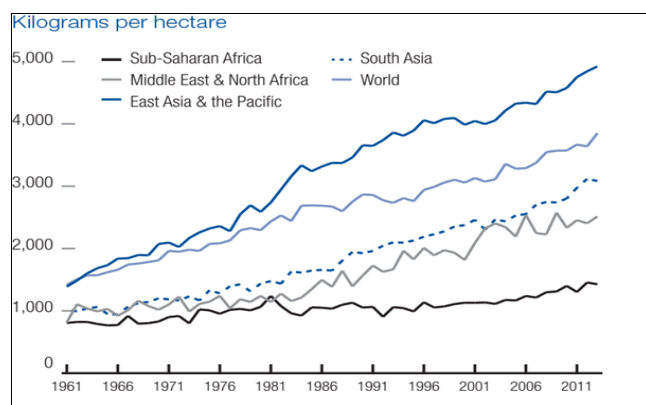


Fig.1. Cereal yields by region, 1961 – 2013 [World Bank 2015]

In fact, agriculture has a low productivity with scarce application of science and technology. In other primary activity, most operations using modern technology are foreign-owned with small linkages with the rest of the

economies (HRW, 2013). Thus its impact in rural development is not relevant. An important primary sector is not enough to lead to economic development. Mozambique, amongst many other developing countries in Africa, has remained poor, in spite of its richness in raw materials.

Use of Natural Resources

Increasing income and export revenues can be achieved by utilizing natural resources. Many developing economies have enriched through the sale of gas, precious stones, oil and other natural resources providing them with capital to invest in public services and other economy sectors. A few oil-rich countries have successfully used the revenues to safeguard the future, e.g. Qatar, Saudi Arabia and Norway (Karl, 2007).

However, in Africa the rural populations have not moved out from poverty mainly because they have not been able to enhance their agriculture which represents their basic economic activity. It employs 60-80 % of Africa's labor force and accounts for about 25-35 % of gross domestic product (AGRA, 2016), which reveals the relatively low productivity of the sector (McCullough, 2017). In Mozambique, the total land area is by law owned by the State. However it is subject to land allocation based on traditional rights of succession by descent under customary tenure by village (FAO, 2007a).

As shown by statistics, actual agricultural productivity in Africa is the modest and its improvement has had frequent failures. Productivity is still below potentials with a weak and agricultural mechanization which is low leveled and declining, with a non-existent or still nascent agribusiness industry (ADB, 2016). Inefficient and malfunctioning markets, low infrastructure investment, expensive transportation costs, lack of information systems with poor

regulatory services, are usual constraints for farmers, and changes are needed if food security problems are to be mitigated and incomes are to be risen (Christiansen *et al.*, 2010).

Most authors highlight the promotion of agricultural transformation based on the dependency of industrialization over agricultural improvement (World Bank, 2008). Others (Dercon and El Beyrouty, 2009) argue that while more investment is needed in agriculture, this does not necessarily mean that agriculture is a fundamental tool for development in Africa. These competing perspectives on the impact of agriculture in growth and development in Africa imply different policy choices in this continent (IMF, 2017). In many SSA countries data analysis have been done based on household surveys on livestock, food and fisheries. The results of these studies highlights discrepancies in these countries and their regions (FAO, 2015). The food security complexity and the need of a multidimensional approach and definitions shows that an enhancement in agricultural productivity is necessary but not a sufficient condition to achieve long term food security in Sub-Saharan Africa.

The Case of Mozambique

In each of the last five years, Mozambique GDP has had an annual GDP growth rate of over 7.5%, with a relevant overall economic growth since 1992, achieving a GDP of USD 10.5 billion in 2011 (Deloitte, 2016) and a growth rate forecast of 3.5% in 2017 (African Economic Outlook, 2017). Despite these impressive growth rates and recent years' progress, poverty is still severe and widespread (World Economic Forum, 2017). However, even considering the ongoing debt crisis, growth seems to remain relatively stable at an average of 4.8% between 2016 and 2021 (Van den Boom, 2011).

Mozambique Gross Domestic Product (GDP) increased 3.10% in the first three months of 2017 over the previous homologous period. GDP Growth Rate in this country averaged 1.70% from 2007 until 2017, with an all-time high of 7.70% in the fourth quarter of 2007 and a low record of -2.40% in the second quarter of 2013 (PARP, 2014).

In Mozambique every dimension of poverty is extensive and remains practically the same from 2003 to 2009, with a slight increase, from 54.1% to 54.7%. In Zambezia's Province, poverty incidence increased from 44.6% in 2003 to 70.5% in 2009 showing the worst of these data in the country (Bank of Mozambique, 2017).

The Mozambican primary sector production is largely dominated by agriculture, gas or minerals. As in other less developed economy, the primary sector (e.g. fishing, farming and mining) includes the most important. Usually, with the development of a country, the increase of labour productivity enables workers to leave the agricultural sector and migrate to other sectors, such as industry and the service sector. It is known that in developed economies there is a decline within primary sectors share of the economy, leading to structural unemployment for a period.

Agriculture, being largely driven by smallholder farmers, is contributing for almost a quarter of the Mozambique GDP and reached about US\$4.2bn in 2014. The value of agriculture (in dollars) grew by a compound annual growth rate (CAGR) of 10.3% between 2000 and

2014 (Fig. 2) (Deloitte, 2016).

The large capital intensive mega projects only employ a small proportion of population. On the contrary, the informal parallel economy, which is growing with high illiteracy levels, is rising its importance in attracting people as a subsistence way of life.

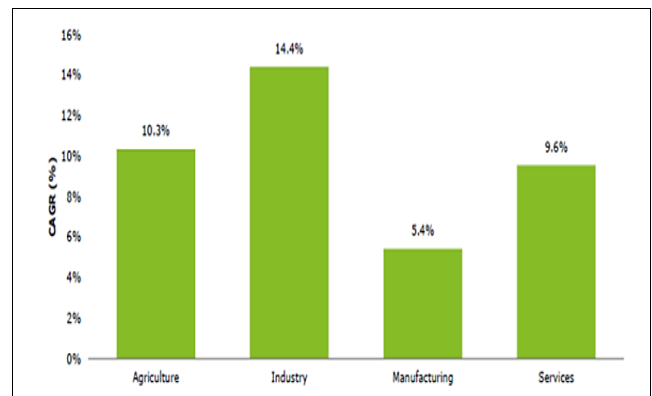


Fig. 2. Mozambique CAGR by Sector (%), 2000-2014 [15]

Particularly in children, there is a relationship between malnutrition, food consumption and food production (UNICEF, 2014). Poverty in Mozambique has decreased but not as quick enough according to the World Bank (World Bank, 2016) which highlights that poverty fell from 69.7% in 1996 to 46.1% in 2015. But it is also emphasized that for each percentage point of economic growth between 1996 and 2009, poverty only reduced by 0.26 percentage points. Sub-Saharan Africa has doubled this rate (0.5 percentage points) (Moyo *et al.*, 2015).

Apart from these numbers, cyclic calamities of drought and floods have to be taken into account. The growing risks of climate change are a threat to animal production due to the decrease of available pastures.

Water and fertilizers are two fundamental food production factors. While food yield is mostly produced by smallholder farmers, fertilizers are amongst the inputs that are mostly not available. Agriculture in Mozambique is mainly rain-dependent and it is expected that fertilizer production from gas oil by products can in the near future improve the Mozambican dependency in this sector. Large-scale plantations are predominant in the production of sisal, sugarcane, tobacco, bananas and cotton. However, overall national agriculture depend mainly on small-scale subsistence farmers (Castel-Branco *et al.*, 2015).

Despite the mentioned encouraging economic growth up to 8% before the latest economic crisis, this economic performance is not reflected on agricultural growth which has been slow and rather sluggish (Trading Economics, 2017). With a productivity still below yield potentials and a weak and declining agricultural mechanization it is fair to say that economic growth is yet to have consequences in the agricultural sector. The economic growth shown until now will be ephemeral if it is not accompanied by effective agricultural, forestry and fisheries transformation (Muzari, 2016).

Agricultural growth has induced the enhancement of industrial growth in some economies such as Japan, China, Brazil and India that have been investing in Mozambique. But the so-called "Green Revolution" introduced in 2007 by

the Government did not avoid numerous failures in getting agriculture moving. In fact Africa and Mozambique have not benefited from the green revolution (Voortman, 2013) as other world regions did. The rural population has not move out of poverty mainly because they have been unable to transform their basic economic activity, agriculture, despite many national and international incentives and the introduction of some know-how and technology transfer.

With some 28 million habitants, and growing fast yearly, the country population is mostly young and increasingly urban. Mozambique may never be self-sufficient in food nor this condition and agricultural supremacy has historically proved to be the defining feature of growth across the world (World Bank, 2015). With a long coast of some 3000km, fisheries have not been a strong investment, and the latest tuna fish enterprises never got out of the ground. Instead, paradoxically, inland fish production, dependable on feeds and supplements, have been growing slowly (Barnes *et al.*, 2002).

The Census activity in Mozambique, conducted every 10 years, including the last one (August 2017) (Mozambique's National Statistics Institute, 2017), considers human population, food crops, livestock and fisheries. However, the data gathered once real, fruits, beans, oil crops, and tuber/root crops, tea, tobacco, fish, meat, poultry and eggs are not enough to draw a link between nutrition food consumption and food production. Milk and dairy products are almost not produced nationally. Forestry is a complex issue with corruption still involved on illegal exports of timber although the paper industry has been growing.

Food production (primary crops and livestock products) has been growing but at smaller rate than the population growth rate, which is alarming concerning the ability of the country to self-insure against food insecurity (Makino, 2013). However there is strong evidence and general recognition that Mozambique, with only 16 % of land suitable for farming being currently cultivated, can relevantly increase production and become a surplus country, and also contribute to food and nutrition security of the southern Africa region (World Bank 2017). The macroeconomic environment and prospects are favorable to the increase of investments in the sector and rural areas.

Subsistence farmers produce mainly white maize, cassava, beans, peanuts, fruits and palm oil are the main foods for rural people. Sugar and salt are also produced by larger farmers. Food supply for the population is not assured in Mozambique or indeed Southern Africa, without both food imports, namely soya from USA and transgenic maize, and a serious effort to boost food production, even if based on the scarcity of inputs such as adequate water and fertilizers. The rather neglected of agriculture in Mozambique can be linked to the country's focus on the extraction of precious gas/minerals (USAID 2017) and this not lead to success.

The growing risks of climate changes, the water uncertainty and lack of sound policies should be added to the other mentioned factors influencing crops and animal production since rudimentary methods passed on from generations to generations within the rural population are still in use without the necessary food chain value and security measures (Haglund, 2011).Cash crops production

could even be more depressed if drought and flood calamities worsen and agricultural neglecting is persisted.

The export of fish and seafood can decline food security and decrease its availability for the local population if the foreign income revenues in currency from such sales are well used. As known, the US dollar is still the largest commodity in the world affording the purchase of food products including those considered deleterious to human health in developed countries.

Nutrition and Agriculture

Agriculture, fisheries and forestry are, and will be in the future, relevant players in the Mozambican economy and are fundamental determinants of people diets. In 2009, the agriculture contribution to GDP crop production was dominant (78%). Next came forestry (9%), livestock (7%) and fisheries (6%). About 80% of the population, from which 73% living in rural areas is heavily depended on agriculture as their primary source of livelihood (Taglioni and Winkler, 2016).

The described agriculture production and productivity conditions can explain that the nutritional situation in Mozambique remains very poor with 44% of children under age of five being chronically malnourished (stunted) due to chronic illness and poor diet (FAO, 2010). Underweight affects about 18% of children which in rural areas are almost twice as underweight as those living in towns and cities. The level of wealth of the families in which the children live is fundamental in their nutritional status. As expected, the more economic resources the family has, the lower the rate of underweight of children under the age of five is found, and in towns cases of obesity are starting to occur (FAO, 2013).

Cassava and maize, with low protein content, are the main components of diets in the northern provinces of Mozambique. Maize is the most important staple in the centre and southern provinces of the country. In the cities, households consume mostly maize and imported wheat. The supply of micronutrient-rich foods (other vegetables, fruit, and foods of animal origin), is very low, apart from green leafy vegetables, which are often consumed with the staples. About 80% of the dietary energy is supplied by cereals, starchy roots and tubers. This diet is currently the lowest in the region, with a poor level of diversification not being improved for the last 40 years and (UNICEF, 2016) due to limited variety of production, difficult access (both physical and financial) to quality foods, scarce nutrition knowledge and limitations affecting child feeding and care such as women's heavy workload and duties.

Bipolarity characterizes Mozambique's agriculture, split between 3.2 million smallholders, producing 95% of the agricultural GDP, and about 400 commercial farmers in charge of the remaining 5%. Only less than 10% of the arable land is used under rain fed conditions (only 3% of the arable land is currently irrigated). A large part of this area is affected by frequent droughts and floods (Pienaar, 2015).

The access to credit and markets is difficult, and the low productivity, the predominance of rain fed agriculture make agriculture a very vulnerable sector and implies a high dependence on food imports (FAO, 2007b). Low uptake of modern production technologies are responsible for a small

crop productivity. In fact only 5-10% of farmers have improved seeds, 5% use fertilizers, with average fertilizer use in 2008 of 5.3 kg/ha and just 10% use animal traction. Limited access to financial incentives, and poor access to output markets and value chains also play a role in the problem. Post-harvest losses are high (average 30% of production) and the quality of the final products is usually low because poor handling and storage practices are common (USDA, 2015).

Farm-gate prices and quantities commercialized are negatively affected by all these factors. The bargaining power of large traders exacerbates this situation inducing a further downward pressure on the price paid to producers. Almost all Mozambique smallholders operate as individual producers and only 6.5% (UNCTAD, 2008) are organized in small associations which could be fundamental instruments to up-grade production factors procurement, market access to farmers and production technical support. It could contribute to reverse the actual chain value trend, which is not in favor of small farmers. Reaching as far as possible final consumers and competitive credit conditions should be included in the concept of market accessibility.

The public extension service includes about 870 workers reaching only 8% of smallholder farmers (MINAG, 2012). This service is complemented by advisory organizations provided by NGOs (with some 670 workers) and the private sector (about 540 workers). The Farmer Field School facilitators also support extension activities in many provinces introducing agricultural methodology. In general, the public extension service is weak mainly due to low staff motivation and capacity and logistic problems.

Conclusions

A medium to long term strategy providing sustainable increase in agricultural growth and rural incomes in sub-Saharan Africa enhancing agricultural income so as to accomplish the United Nations' Millennium Development Goal (MDG) on reducing poverty and hunger in Africa has not yet been achieved. The approach focusing the increase of smallholders' agricultural productivity and their access to trade and markets, efficient extension services and promoting small farmers associations in Mozambique should be considered as a major aim. Success in these main agriculture policy goals will not only up-grade economic growth in the country, but will have spill-over effects within the immediate region. This implies a multi-sectorial continuous approach as a guide-line to reduce hunger and poverty levels, under the Government leadership, responsibility and strong commitment.

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