The True Contribution of Agriculture to the Economic Development of Mozambique

By

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1. INTRODUCTION

1.1 Background

The “true contribution of agriculture to the economic development” is a theme of crucial importance for developing countries such as Mozambique. The choice of this theme for the FANRPAN Annual Multi stakeholder Dialogue places agriculture into the centre of development strategies perceived by SADC countries. The New Partnership for Africa’s Development (NEPAD), a vision and a framework for Africa’s emancipation and Development prepared a Comprehensive Africa Agricultural Development Program (CAADP) which guide African countries to place agriculture in the centre of development strategies.

The Dialogue is a flagship event that is held annually during the first week of September. This paper constitutes a contribution to the 2009 dialogue which will be held in Maputo, Mozambique.

The paper is divided into four chapters. The first chapter is an introduction with a background, the objectives of the paper and methodology. The second chapter is an overview of agriculture in Mozambique intended to review the agricultural sector in Mozambique, government priorities, policies and programs. The third chapter is the “core” of the paper where the role of agriculture in Mozambique is discussed; true contributions of agriculture to the economic development of Mozambique are analyzed and emphasized through presentation of “the green revolution program”. The fourth chapter are the conclusions.

1.2 The Objectives of the Paper

Almost all the SADC countries place agriculture at the top of priorities. However, it is unclear how financially the priority is considered. The undervalued perception of agriculture is in contrast with the high political importance attached to the sector in Mozambique and in almost all SADC countries. The objectives of this paper are to:

- Enphasize the economic and non-economic roles of agriculture in Mozambique;
- Present and discuss the true contributions of agriculture to the economic development of Mozambique; and
- Suggest policies and strategies for socio-economic development of agriculture in Mozambique.
1.3 Methodology

Due to the time frame and having in mind the objective of the paper, the data used in this paper was mainly secondary data collected by the Ministry of Agriculture, the National Institute for Statistics and the Database from the Faculty of Agronomy and Forestry Engineering of the Universidade Eduardo Mondlane in Maputo, Mozambique. The data included infrastructure in the rural areas, agricultural production, markets, policies and strategies.

The analysis included descriptive statistics, scoring methods, comparative analysis and review of bibliography. Geographic Information System (GIS) was used in preparation of maps.

2. A REVIEW OF AGRICULTURE IN MOZAMBIQUE

2.1 Overview of Agricultural Sector in Mozambique

Mozambique is a large country with an area of about 799,380 km\(^2\), around 2,400 km of coastline along the Indian Ocean, with 4,330 km of border with Tanzania, Zambia, Malawi, Zimbabwe, Swaziland and South Africa. There are 11 provinces and 128 districts. The total area of arable land is estimated at around 36 million hectares, of which only about 9 million hectares are currently under cultivation (PROAGRI II, 2004, p. 27).

The population of Mozambique of 21 million is growing about 2.6% per year, where 70% it is predominantly rural (2007 census). Agriculture is dominated by 3.2 million small scale farms (family sector) with an average size of 1.1 ha of farm land (PROAGRI, 2004, ASP, 2005). Medium and large-scale farmers are almost insignificant in terms of land area and numbers of farms. About 66% of agricultural production is for household consumption and only 5% is generated by large-scale farmers.

Most crop yields in Mozambique are low (Table 1). The use of modern inputs and mechanization is almost nonexistent (less than 2% use fertilizers or pesticides, 5% use animal traction and less than 10% use some form of agricultural equipment) (PROAGRI I, 2004; p21, ASP, 2005). The farm-gate prices are low while improved input prices are high. Improved seeds, fertilizers and pesticides are capable of raising productivity by 67% to 576%.
<table>
<thead>
<tr>
<th>Crop</th>
<th>Average Actual</th>
<th>Average Potential</th>
</tr>
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<tbody>
<tr>
<td>Maize</td>
<td>0.900</td>
<td>5.0 – 6.5</td>
</tr>
<tr>
<td>Cassava</td>
<td>5.500</td>
<td>5.0 – 10.0</td>
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<tr>
<td>Sorghum</td>
<td>0.600</td>
<td>0.8 – 2.0</td>
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<tr>
<td>Pulses</td>
<td>0.450</td>
<td>0.5 – 2.5</td>
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<tr>
<td>Groundnuts</td>
<td>0.500</td>
<td>1.0 – 3.0</td>
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<tr>
<td>Rice</td>
<td>1.100</td>
<td>2.5 – 6.0</td>
</tr>
<tr>
<td>Coconuts</td>
<td>4.200</td>
<td>1.0 – 2.0</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture, 2008

It is estimated that about 3.3 million hectares of land can be irrigated, but at present only about 50,000 hectares of land (0.13%) are under irrigation. The most important irrigation schemes are Chókwe scheme in the Limpopo basin of about 30,000 ha of equipped area, the sugarcane plantations in the Incomati, Búzi and Zambezi valleys all summing 34,000 ha of equipped area. Most agricultural production is under rainfed conditions. The average precipitation is low in the South as shown in the figure 1.

**Figure 1. Precipitation in average mm per year**

*Source: IIAM (2007)*
The mean annual rainfall is around 800 mm to 1,000 mm along the coast, around 1,200 mm in the mid-part of the country, and between 1,000 mm and 2,000 mm in the north. The best agricultural lands are in the north and centre of the country, usually with strong potential for export food crops while south is arid with tendency to import food. Due to the length of the country and the inadequate transport network, the north exports relatively little quantities to Maputo in the south. To satisfy the food demand, Maputo imports large quantities of food from South Africa instead of importing from the northern part of Mozambique.

Cropland use intensity is shown in the figure 2.

**Figure 2.** Mozambique: Cropland use intensity, 2006/7

Source: [www.iiasa.ac.at/research/pop/pde/maps/mz](http://www.iiasa.ac.at/research/pop/pde/maps/mz), 2007

The common denominator of the smallholder farmers is low productivity, limited ability of households to generate savings and food insecurity. These characteristics dominate small-scale agriculture which is geographically dispersed as well as culturally, technically and economically heterogeneous. About 75% of the smallholder farmers are resource-poor and cannot afford to
purchase the necessary inputs to increase production. The low levels of agroindustrial development and non-agricultural activities result in few alternative forms of employment and income generation in rural areas. Farmers are therefore caught in a cycle of poverty, which can only be broken through agricultural development.

On the other side, agro-dealers in Mozambique lack capital to purchase agricultural inputs, particularly fertilizers and improved seed. For reasons such as lack of collateral, agro-dealers in the districts cannot access to loans from the main banks located in province capitals. In addition, there are few microfinance institutions operating in the districts, and those existing are financing the purchase of agricultural products and not inputs. As a result, agro-dealers are unable to access soft loans and end up lacking funds for the purchase of inputs.

Climate risks and uncertainties associated to the inefficient production process hamper the agricultural production. The effects of drought are acute in the provinces of Gaza, Inhambane and Tete. The provision of free seeds by government and non-government organizations has been of major significance, not just in the recovery from the very harsh effects of the drought, but also in the recovery from the decline in production from this sector, which prevailed in the years from the mid-eighties to 1991.

Declining soil fertility in smallholder areas is leading to unsustainable production levels. This has been exacerbated by increasing population densities, leading to settlement on even more marginal land. The use of fertilizer is still low and organic manure is diminishing as livestock numbers decline relative to population levels.

There is a lack of financing in agriculture due to concurrent natural crop diseases and disasters as well as livestock diseases including foot and mouth and Newcastle disease outbreaks. The current structures, systems and procedures of commercial finance institutions do not lend themselves to viable rural banking. Systems are required that can administer, in a cost effective manner, numerous small loans. Where rural farmers form groups to access institutional credit, the cost of administering loans is reduced significantly.

High interest rates and the tight monetary policy have been serious constraints to farm development in the 1990's. Inflation and budget deficits have led to this situation and the money market, including the agricultural finance, has not been able to offer sufficient credit suitable for smallholder farmers.
The agro-industry has been particularly hard hit, as high interest rates have led to inadequate investment, resulting in shrinking agro-industries. Smallholder producers now rely primarily on informal finance since formal channels have become largely inaccessible. It seems that the inexistence of financial institutions in the rural areas, the low levels of public and private savings led to low levels of investment in agriculture.

Low returns in agriculture and weak financial/capital markets are felt as being the major reasons for lack of investment for agriculture. Commercial banks and insurance companies are not operating efficiently to facilitate trade. Rigid financing rules and complicated payment methods do not allow financial integration of the region.

Many farmers are still facing major problems of access to both local and international markets, as well as poor availability of inputs. Rural areas are generally distant from urban markets; poor access roads and inadequate transport result in high marketing costs, delays in acquisition of inputs and, therefore, lower incomes for farmers. Large-scale farmers have better access to local markets and transport but even then face constraints on export markets due to transport difficulties. Lack of cooperation between customs administrations and between customs and trade make difficult to access foreign markets.

**Maize**

Maize is the most important cereal crop grown in Mozambique. It ranks first in terms of number of producers, area grown and total production. Most production is dry land, rainfed and yields are highly variable. It is the staple commodity in the diet of most Mozambicans and demand is relatively price inelastic. About 95% of domestic maize sales are used for human consumption, including maize oil as a by-product of refined maize meal and the rest for livestock and poultry feeds. Maize production is a major enterprise on both large and smallholder farms. Smallholder farmers grow mostly white maize and retain part of it for home consumption and sell any surplus. The major problem currently experienced in the smallholder maize subsector is low productivity. Commercial farmers grow both yellow and white maize, mostly as a cash crop.
Map 1. Major Food Crops and Rural Poverty in Mozambique, 2003

Source: Mapping based on TIA 2002-03 and unpublished information from Ministry of Agriculture. Rural poverty rates are from Fox et al. (2005) and are measured in per adult equivalent consumption.
Because of transportation constraints and high transaction costs within the country, it is generally advantageous for purchasers in southern Mozambique to import maize. Since 1997, Mozambican imports of maize and maize meal have averaged approximately US$4 million annually. Northern Mozambican farmers typically have a small surplus of maize to export to Malawi and other western neighbors.

In recent years, annual exports have been between US$2 million and US$3 millions. Mozambique’s relatively consistent export performance during this time, in contrast to the more erratic patterns of its western neighbors, suggests that if production and therefore surplus can be increased, so can exports to those neighbors. Studies (FAEF, 2007) estimate that using improved seeds and farming methods could double yields per hectare, from 800 kg/ha to 1,600 kg/ha. A significant portion of maize that Mozambique exports to Malawi is milled there then imported back into Mozambique as maize meal. Introducing small-scale mills in rural Mozambique has kept some processing in the country; starting up more mills would keep more value in Mozambique while creating more jobs.

**Cotton**

Cotton is Mozambique’s most important cash crop. Exports of cotton have exceeded $20 million in four of the last five years and have accounted for as much as 30 percent of Mozambique’s agricultural exports. Most of this cotton is produced by an estimated 250,000 smallholders under contract arrangements with several large ginning and trading companies. The trading companies provide seeds, other inputs, and some extension services in return for the right to purchase the cotton at a price set annually by Ministry of Agriculture.

The trading companies process and bale the cotton, extracting byproducts in the process, and sell on international markets. These companies themselves employ 10,000 full time and seasonal workers, providing additional opportunities and income for Mozambique’s poor. This system has come under some stress recently. World cotton prices have declined sharply from US$0.70/lb. to US$0.40/lb., the lowest price in 30 years. These falling prices contributed in part to the failure of one of Mozambique’s largest trading companies. Several other companies are reported to be experiencing financial difficulties. Since 2002, however, prices have strengthened slightly to US$0.44/lb. as world demand again exceeds supply.
**Cashew**

Between 1978 and 1994, the Government of Mozambique banned exports of unshelled cashew. In 1994, under the pressure of the World Bank, it lifted the ban and imposed an export tax of 20 to 40 percent of the f.o.b. export price. It reduced the tax to 20 percent in 1996 and 14 percent in 1997. The National Cashew Institute (INCAJU), which was formed to assist the industry with the production, marketing, and processing of cashew nuts, is funded by export tax receipts.

Following privatization in 1995, the number of firms processing cashew rose rapidly, although the processing technology remained, in some cases, decades old. Combined exports of in-shell and processed nuts exceeded US$33 million in both 1998 and 1999. During this peak export period, cashew processors were reported to employ between 8 and 10 thousand workers. In late 2000, prices for processed cashew fell to below US$2 per pound, a 15-year low; in 2001, average prices were reported by the IMF to be half the average of 1995–2000 values. The combined exports of in-shell and processed nuts also fell sharply. In 2000 they totaled US$20 million, and in 2001, just US$12 million.

On the other side, yields have declined because of diseases and the failure to replace aging tree stock. Studies by the Faculty of Agronomy and Forestry Engineering and the INCAJU found that a million trees were dying or going out of production each year, while only 300,000 were being planted. Research by the Ministry of Agriculture in Nampula Province found that the labor necessary to improve cashew tree management conflicted to a large extent with the labor necessary for other cash and subsistence crops. Workers delayed needed work on cashew until later in the season, by which time it was often too late to help revitalize cashew production.

Currently, more than 900,000 smallholders are involved in cashew production. There are several reasons to consider export prospects promising. First, a number of programs have been instituted to replant cashew trees and increase production of cashew nuts, with a target increase of 50 percent, to 100,000 tons. The cost-competitiveness of labor-intensive processing techniques has been established. The added value resulting from processing is significant; processed cashew products generally sell at prices five to seven times higher than prices for unshelled cashew. New investments in processing plants have been made.
Coconut and Coconut Products

Smallholder farmers control an estimated 60 percent of coconut production in Mozambique, the balance is controlled by large plantations. Much of smallholder farmers go to downstream buyers. Between 1997 and 2005, exports of downstream products from coconut, including copra and coconut oil, rose almost fivefold to just under US$40 million. Production of coconut oil, soap, and other downstream products is increasing in the center and north of Mozambique and new production capacity is being added. New export markets include Zimbabwe.

Sugar

Sugar exports have been erratic, rising and falling with production. Currently, sugar production is on the rise. It is expected to rise from 67,000 tons in 2001 to 500 thousand tons likely by 2009.

Trade in sugar is highly controlled by quota arrangements in most major markets, but Mozambican producers are poised to benefit from improved quota access in the Southern African Customs Union (SACU) and EU markets. The Doha round of WTO negotiations will also affect access to these markets and should be monitored closely.

Tea

Tea production is beginning to recover from the destruction of 13 processing plants during the war. Since 1997, exports have grown modestly but steadily, reaching US$1.5 million in 2001. Primary growing locations are remote, so the low availability and high cost of transport in Mozambique present obstacles to export growth. The Nacala corridor rail line is now operational which is about two hours by road from the growing area, exporters have decided to ship tea to through this line. Improved infrastructure might help producers to export more.

Fruit and Fruit Products

Exports of citrus, especially grapefruits and lemons, from southern Mozambique have declined. Mozambique should examine the possibility of exporting citrus concentrate to take advantage of a new 25-percent margin of preference that was phased into the South African market by 2004. New markets for citrus, especially in the Middle East, appear to offer opportunity. New possibilities exist for crops not previously exported, including tangerines.
Mozambique also produces pineapples but does not export. At one time Mozambique did export pineapple juice, which now enjoys a 20-percent margin of preference in the SACU market. This margin may make Mozambique competitive in that market. In 1998, during workshops on the SADC Protocol, one of the study team’s investigators talked with several banana producers who were frustrated by their inability to sell to ShopRite, a South African company operating in Maputo. With the help of technical assistance, those producers have since established a brand, Sweet Mozambique, and have displaced South African imports in Maputo.

They have proven that they can deliver the quality and quantities needed in this market. The next logical step would be exporting to the South African market, where retailers will pay a premium for superior bananas.

**Livestock**

The livestock sector is faced by significant constraints:

- nutrition, due to problems of overgrazing, poor rainy seasons and high costs of purchased feed;
- health, due in part to problems of nutrition and the incidence of diseases endemic in tropical areas;
- finance, due to the fact that cattle production systems are medium to long term, requiring substantial capital;
- marketing, due to problems of limited access to high priced markets.

The beef sub-sector is constrained by:

- cost and availability of working and medium term capital;
- cash flow problems, exacerbated by mortality due to drought;
- poor growth of pastures in low rainfall seasons;
- low off-take, particularly in the smallholder sector;
- overstocking in some smallholder areas;
- high cost of purchased feed, particularly in drought years.
- high input costs, particularly feed during periods of droughts;
- inadequate training and extension coverage;
- use of unsustainable breeds especially in the smallholder sector;
- inadequate level of funding for provision of dairy advisory services.
- disease problems particularly Newcastle disease;
- problems of market access for smallholder production;
- lack of research into indigenous breeds;
- Lack of processing facilities at local level.
- Access to viable markets on a sustained basis.
- Disease problems
2.2 Government Priorities, Policies e Programs

The long term goals of the agricultural sector in Mozambique are to improve food security and reduce poverty by supporting the efforts of smallholders, the private sector and governmental and non-governmental agencies to increase agricultural productivity, agro-processing and marketing, while keeping a sustainable path for the exploitation of natural resources.

A significant institutional reform, in 1999, created a five-year sector-wide program for agriculture (ProAgri I) whereby numerous donors pooled funds to support activities, build institutional capabilities, and greatly reduce reporting and other overhead expenses. ProAgri II, was endorsed by the ministry of agriculture in 2005. To start the full program, the ministry had to comply with donor requests for institutional and workforce reform and develop clear and agreed upon statements of priorities concerning environment, gender, and HIV/AIDS. ProAgri II shifted much power and more than three-quarters of its budget to the provinces and districts while also setting up Multi-Stakeholder Agricultural and Rural Development Councils (“comprising representatives of other government sectors, private agricultural companies, NGOs and smallholders”) to introduce a demand driven element into the preparation of the provincial annual activity plans and budgets (PAAOs) (MADER 2004:128).

To overcome the agricultural research system’s lack of strategy and connectivity between its own organs and with the extension service and farmers, the Institute of Agronomic Research of Mozambique (IIAM) was created in 2005, amalgamating three research institutes and two centres. The new institute includes economists and social scientists to improve the linkage with farmers and ensure that research results and consider market conditions and be profitable and not too risky for farmers.

In 2000, the government launched its Program for the Reduction of Absolute Poverty (PARPA) as a strategic framework for sectoral work, including agriculture. As it evolved, PARPA shifted from a short to a medium- and long-term focus promoting fast, widespread growth as the best way to benefit the poor (Mozambique 2001b:2). This, at least, obliged the ministries to analyze systematically how their policies and programs affect the poor and especially women.

The Rural Development Strategy was approved in 2007. The five main strategic objectives for rural development are to:

1. Increase the competitiveness, productivity and rural development;
2. Promote management of the natural resources and environment in productive and sustainable manner;
3. Increase the human capital, promote innovations and technology;
4. Diversify and turn more efficient the social and institutional capital and infrastructures
5. Promote good governance.

The increased food production is one of the main priorities of the Government of Mozambique. It approved in 2008 a Food Production Action Plan which is a three year implementation plan of the green revolution targeting especially to reduce the deficit in food production. Mozambique Government has set aside over US$30 million dollars for seed and fertilizer distribution, and the government is promoting partnership between private and public sector to widen the seed program.

The use of improved seeds is quite small in Mozambique. Seed companies always complain about the small market compared to the cost of production in Mozambique. To tackle this problem, the Ministry of Agriculture formulated a “vision for the agricultural sector” as follows: “An agricultural sector that is integrated, sustainable, competitive, diversified, a basis for welfare and economic accumulation, articulated through value added chains with broadly shared benefits.” The formulation of the vision took into consideration the constraints to agricultural development, which are summarized in four pillars namely:

(i) markets;
(ii) financial services;
(iii) technology, and
(iv) access to natural resources.

These pillars illustrate that the constraints to agriculture are multi-sectoral and go beyond a narrow sectoral definition of agriculture. A boost to the agricultural economy is critical to ensure growth of the rural sector. Any strategy must promote sustained production and productivity for smallholders who depend on agriculture, thus improving their livelihood and reducing vulnerability and risk. The transformation of agriculture from low-productivity subsistence to high productivity commercial is long-term, and the current strategy involves short-term activities to lay a foundation for a long-term transformation. Such growth should be highly productive and environmentally sustainable, along with strengthening the cash crop sector by promotion of out-grower schemes.
3. THE TRUE CONTRIBUTION OF AGRICULTURE TO THE ECONOMIC DEVELOPMENT OF MOZAMBIQUE

3.1 The Role of Agriculture in Mozambique

The role of agriculture includes the:

1. Supply of food to 80% of Mozambicans and it provides food security to the majority of population;
2. Provision of employment to about 80% of population from which 50% are women;
3. Supply of foreign earnings through export of agricultural produce;
4. Supply of raw materials to agro-industries and other sectors of economy; and
5. Capital accumulation.

A large number of rural people derive their livelihood from agriculture and other related rural economic activities. It follows, therefore, that the most direct and effective means of raising standards of living and alleviating poverty, hunger and malnutrition is through increasing the productivity and incomes of smallholder agriculture. Coupled with greater participation of farmers in commercial agriculture through effective agrarian and land reforms, this can lead to a transformation of the rural economy through the development of rural based agro-industry and the rural based private sector. With higher farm and rural incomes and purchasing power, Mozambique's economy will be on a solid and broad base for full industrialization, leading to social, economic and environmental stability.

3.2 Contribution of Agriculture to the Economic Development of Mozambique

Mozambique’s GDP was US$7.6 billion in 2007, and the value added by agriculture was 27.4 percent. Mozambique has made impressive gains in restoring food production and, at a national level, the country is virtually self-sufficient in terms of food grain production, with the exception of wheat and rice. However, this growth has been uneven spatially and natural disasters such as floods and droughts are an important cause of temporary food insecurity.

Rural poverty is primarily attributable to limited agricultural development, limited market development and poor productivity levels. Mozambique had a gross national income (GNI) per capita of USD 260 per year in 2004, according to the PARPA joint review, that is amongst the ten lowest in
the world. The agricultural sector GDP is growing at 5-7% annually, but at a lesser rate than the overall economy, as the share of the agricultural GDP is gradually decreasing from 37% (1997) to 24% (2007, while the contribution from industry is rapidly increasing in the same period, from 22% to 31%, (Mozambique Government, 2008).

Agricultural development is fundamental for poverty reduction as rural families generate about 80% of their income from the agricultural sector, while the other 20% has a strong link with the local economy (TIA 2002, CAP, 2000). Extensive agricultural growth has reduced rural poverty. Rural poverty has declined substantially over the last decade as the agriculture sector has shown remarkable improvements. Over 70 percent of the 21 million Mozambicans live in rural areas, with nearly 40 percent in the northern and central regions. The majority of smallholders farmers grow food crops, and about 16 percent also participate in cotton and tobacco out-grower schemes.

While overall annual agricultural growth has averaged 6 percent, increases in the food and cash crop sectors led to an impressive reduction in rural poverty over the period 1996 to 2007. The rural poverty headcount decreased from 69 percent in 1996 to 54 percent in 2005. The largest decline was in the central region, followed by the north.

The agriculture sector grew primarily through area expansion and an increase in the labor force, with a large increase in cultivated area in the central region. From 1992 to 2001, cultivated area expanded at 3.3 percent annually. The labor force grew at about 1.7 percent annually, which approximates rural population growth of 1.9 percent. After the 1992 peace accords, the increased rural labor force was primarily returned migrants.

Basic food crop production was the key driver for growth, but cash crop production was also important and is promoted mainly through out-grower schemes in northern and central Mozambique. However, access to and use of improved crop technologies remains limited. Crop yields are stagnant, and thus rural incomes are also likely to stagnate.

Extension significantly affects crop production but farmer education level does not affect adoption of technology nor income. Extension services have limited coverage but where such services are available, farmer income from crops has risen by 8 tp 10 percent in 2007. Extension services provided by NGOs are more effective, however, public extension systems better address the rural poor. Extension messages have focused on use of improved seed and planting techniques.
There is evidence that crop diversification is a coping mechanism for the majority of smallholder farmers. From 1995 to 2005, the mean number of crops almost doubled from 5 to 9 per household across all income groups, especially with food crops. This is not surprising where smallholders farmers practice rainfed agriculture.

Market integration and cross-border trade are becoming crucial. With the improved infrastructure since peace was established, markets are more integrated and prices are more stable. There is increased cross-border trade with Swaziland, Malawi, Zambia, and Zimbabwe, with estimated total informal trade in maize over 200,000 tons. Mozambique supplies more than 90 percent of the trade to Malawi. There is increasing evidence that other food grain crops, such as sorghum and beans, are also traded.

The effects from neighboring countries are positive and important. Because north-south infrastructure is underdeveloped, a large part of trade is east-west. Zimbabwean farmers grow tobacco and other high-value export crops across the border in Mozambique as a result of the tumultuous political situation in their own country. Heavily subsidized inputs from Malawi and Zambia also find their way to Mozambique. The land-locked countries are also heavily dependent on Mozambican ports, hence the country earns substantial sums from the transit of freight.

The current sources of agricultural growth are not sustainable. Without close attention to the use and adoption of improved agricultural technologies, production growth may slow and rural poverty will remain widespread. Over the past decade, improved agricultural technologies have played only a minor role. For example, smallholder farmers that use fertilizer, animal traction, or small-scale irrigation only increased from 4 to about 7 percent. A limited number of smallholder farmers use drought-resistant varieties or have access to improved seeds. The highest and the lowest-income quintiles are more likely to adopt new technologies compared to middle income groups.

The cash crop sector has the potential for substantial yield increases. Today cash crops occupy roughly 5 percent of cultivated land and contribute to some 5 percent of agriculture GDP, which in turn is about 6 percent of the country’s exports. The traditional cash crop sector includes cotton, tobacco, cashew, sugar, and tea. Cotton and tobacco are grown under contract, cashew is a smallholder crop, and sugar and tea are plantation crops.

In the Centre of Mozambique livestock provides 45 percent of family...
income for the poorest, to nearly 60 percent for the less poor. In the provinces of Inhambane and Gaza livestock provides a range from 21 percent to 65 percent of household income.

There are some conflicts between crop production and livestock, especially under drought conditions and when the animals are large. Where there are crops nearby, animals need to be tethered to reduce the possibility of conflict.

The lack of access to credit is a problem in crop agriculture and also undermines the livestock sector. Poor families cannot raise credit to purchase animals, and women have difficulty accumulating livestock. If widowed, they are stripped of all family assets upon the death of their husbands, including family animals.

The commercial sector serves primarily a quality-conscious but price insensitive urban market of restaurants and hotels. The family sector serves domestic demand for cheap meat cuts. The commercial sector has better access to surplus grain and crop byproducts than the family sector, which sells through a well-established network of local traders, butchers, and other farmers, and typically has no problem selling its products.

Family livestock shows substantial potential for growth. Financial analyses for households rearing chickens and pigs using stylized household enterprise models suggest that the contribution of these to household income can be substantial. For example, the contribution of chickens to household income can be 7 percent in the northern provinces, 15 percent in the central northern provinces, 8 percent in the central southern provinces, and up to 13 percent in southern provinces. For pigs, the contribution is much higher at 29, 38, 23, and 38 percent, respectively. The contribution of cattle in non-tsetse areas is even more important, ranging from around 40 percent in the northern and southern provinces, to 52 percent in the central western, to 32 percent in the central eastern provinces.

Among determinants of crop income, use of improved technologies, especially fertilizer, significantly affects income. Although constraints exist, Mozambique possesses the fundamentals to realize its considerable agricultural potential. The country is endowed with natural resources, including numerous fertile agroecological zones, but only about 10 percent of its 36 million arable hectares are cultivated. Mozambique has 104 river basins, 20 million hectares of forests, and a long coast line with three major ports.
The Government of Mozambique is committed to rural growth and development, however, the potential can only be achieved through public-private partnerships in which the Government provides an enabling environment and the private sector assumes the risks and reaches out to rural areas.

3.3 The Green Revolution in Mozambique

Mozambique aims to increase agricultural productivity and production through green revolution by using science to improve crop varieties, and by boosting innovation. Incorporating science in agriculture in Mozambique is key to the modernization of the economy and to provide jobs in rural and urban areas.

The New Green Revolution Strategy (GRS), approved in 2007, aims to increase the agriculture production and productivity of the smallholder farmers in a competitive and sustainable way. This is done through sustainable use of the natural resources and improving the access of the farmers to new technologies, market, information, training and financial services. There is also a need to promote the development of local agriculture and forestry based processing industries.

Subsistence agriculture has significant growth potential in Mozambique. To ensure household food security, most cultivated land is used to grow low value maize and cassava (more than 50 percent of the total). With the remaining area, smallholder farmers diversify with a wide variety of other food crops, and further diversify risk by planting in both low lying and higher elevation areas.

4. CONCLUSIONS

Agriculture plays an important role for economic development of Mozambique, Constraints to agricultural growth are numerous and risks and uncertainties are still a barrier to funding of agriculture. Mozambique suffered the 17-year war which destroyed the basic infrastructure and institutions. Rebuilding roads and bridges is now a priority and a necessary condition for any growth in the agriculture sector.

The vast terrain and scattered and sparse population makes it all the more critical to ensure rural connectivity, but per capita investment costs are considerable and would have to be borne by the Government. The structural adjustment programs which dismantled state owned organizations that provided agricultural inputs and bought and marketed production has created a vacuum.
In its infancy, the private sector has yet to find it cost effective and profitable to reach out to rural areas.

Poor roads and markets and unexploited irrigation potential are key constraints to agricultural development. Despite recent investments in roads, the density of the road network is the lowest in Mozambique which to some extent is due the size of the country and difficulty in building and maintaining roads. With a sparse population, the unit costs of serving rural areas are high. Other key infrastructure such as power and telecommunications are also very poorly developed, especially in rural areas, as is irrigation, another key factor for agriculture.

Institutions in Mozambique are weak, lack capacity, and were largely shaped by its history. The war, colonialism, and socialism dictated the types of institutions and their thinking — during the socialist era, colonial farms became state farms, parastatals were established to supply inputs and market outputs, and smallholders were considered constraints to modernizing agriculture. Today, the Ministry of Agriculture formulates policies and regulations, and the private sector supplies inputs and markets. A major issue for many public sector entities is the lack of trained personnel.

Colonial Mozambique did not train an adequate number of people and after the war many who were trained left the country. Today this deficit is a major constraint so that the country continues to rely on outside technical assistance. Additionally, low salaries in government departments do not attract and retain skilled and qualified staff.

One necessary condition is that the overall macroeconomic framework and other sectoral investments must remain stable, including reducing the fiscal deficit and controlling inflation. Greater accountability and transparency to reduce corruption are critical to improving the business environment. Education is crucial for adoption of new technologies become. Similarly, the health system must respond to the needs of poor smallholders, especially in dealing with HIV/AIDS.

As the Government embarks on a medium-term financial framework, one critical aspect is to include all expenditures in rural areas within the budgeting framework. This requires that all off-budget expenditures be identified and brought into the budget system.

Promotion of good business environment in rural areas can accelerate agricultural commercialization. Such promotion requires:

(i) reducing corruption;
(ii) reducing the cost to register a business;
(iii) facilitating dispute settlement mechanisms;
(iv) easing the application of regulations;
(v) expediting payment of refunds by the Government;
(vi) maintaining flexible labor regulations, and
(vii) facilitating access to land.

Reducing vulnerability and risks requires diversifying income sources from primary agriculture to wage income in rural non-farm areas. Such diversification includes improving the flexibility of labor markets, developing marketing infrastructure, improving market access, and improving the business environment through good governance. Reducing vulnerability also requires helping to curb the HIV/AIDS epidemic. Households need practical help to deal with labor shortages and nutritional deficiencies. A multisectoral approach to counter this epidemic is urgently needed.

Food security is still a concern for rural households given Mozambique’s vulnerability to the vagaries of climate. The Government should continue to ensure that its food aid policy does not undermine domestic production incentives while instituting monitoring mechanisms that enable it and donors to respond quickly during emergencies.

Given that the country is so large, decentralization becomes an important strategy. The Government should continue to be committed to a decentralization framework at same time that is strengthening government at the provincial and district levels. It is important to empower communities and community-based organizations so they ensure that local governments are accountable and transparent.

To ensure that services are delivered to grassroots smallholders, civil society and NGOs must be closely aligned with agricultural development programs. At the district and provincial levels they should be involved in identifying and planning development programs. Government administration cannot be everywhere and hence in such a large country it is all the more important for these organizations to be involved.

For the agriculture sector, the Ministry of Agriculture must inventory all activities and establish how and in what way donor programs complement its own programs. Additionally, the donor community must play an important role in providing long-term financing to the public sector. The stability of donor support is also an important factor. Donors need to think together, not so much for their own interests as much as for the interests of the country. Programs should be jointly developed with the Government and communities, and should
not compete with other donors. A truly empowered Government is one that can tell donors what it wants financed and where it wants the money to be invested with “government in the driver’s seat.”
REFERENCES


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