Mozambique – Country Proposal
Addressing Global Food Insecurity

Fall 2009 Capstone Workshop
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Source: Africa Agribusiness Platform, http://api.ning.com/files/8eScNpd31uaEoRBOfDc0*EGsveqPhz/M75smyMFNYN6itU3Ikda5qRAJCY4kCAct*yWPZYSyEtXQ13QEtD3eAxqCXL40/TangandaTeaEstateontheZimbabweanSide.JPG
Mozambique Near Final Country Proposal_dg_as 02212010
Executive Summary

Mozambique is a country with a complex landscape of growth and development concurrent with persistent poverty and food insecurity. Despite having exhibited continued growth for over a decade, it maintains a rank of 172 out of 182 on the Human Development Index, one of the lowest in the world.\(^1\) Mozambique faces extreme geographical disparities. Most of the economic and social development projects are currently targeted at the central and northern regions, marginalizing the south. Food insecurity remains rampant and factors that continue to impede increased security include: poor land usage, continued subsistence farming without long-term potential for growth and scale, poor infrastructure, limited access to markets and malnutrition.

Despite high levels of food insecurity, there is vast agricultural potential that remains untapped. Favorable climate, rich culture, fertile soil, and fruit-bearing trees are all conditions conducive to growth in Mozambique that must be brought to bear in its growth strategy. Given that 80% of the economically active population relies on agriculture to make a living, any solution to Mozambique’s food security problems must necessarily deal with agricultural productivity. In a country of small farmers – 99% of farmers are smallholders cultivating fewer than 3 ha of land\(^2\) - with only 12% of arable land being cultivated and small farmers living a hand-to-mouth existence,\(^3\) the success of any Mozambique food security strategy lies in its ability to convert subsistence agriculture into more enterprising endeavors. It must also take into consideration the need for sustainable healthcare systems. With under-nutrition at 24%,\(^4\) HIV/AIDS prevalence at 15% amongst 15-49 year-olds\(^5\), and life expectancy projected to be 36 years by the end of 2010\(^6\), poor nutrition is both a cause and consequence of food insecurity in Mozambique. Improved nutrition must therefore be an integral part of the food security framework.

Based on the overall needs as well as development potential extracted from a comprehensive country assessment, the country proposal presented herein focuses on increasing the food security of Mozambique through a three-pronged approach with the following objectives:

I. Expansion of small farms to medium-size farms and large-scale commercial plantations
II. Development of farmers associations to improve collaboration, access to markets and resources, and sharing of best practices
III. Capacity building of the healthcare system through training, community participation, and development of health services structures

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The country proposal is entitled Mozambique Agricultural Zone-Specific Extension or “MAZE” Program. It has been allotted $100 million covering an implementation period of five years and will be piloted in Maputo Province in three concurrent parts – MAZE I, II, and III.

**MAZE I** will focus on expanding into Maputo Province the Emerging Farmers Program run by the Cooperative League of the U.S.A. (CLUSA). It will select 350 farmers over the course of 5 years to become emergent farmers under the tutelage of CLUSA and USAID technical assistance staff. These farmers will receive support in gaining access to credit, budgetary advice, utilization of technology in agriculture, and access to market linkages. The objective of this program is to increase the number of medium-size farms in this province of Mozambique in order to pave the way for more sustainable agriculture with better access to markets. MAZE I will also lead a Commercial Plantation Program whereby it selects enterprising individuals to manage large-scale estates upon which hundreds of farmers will be employed. Finally, MAZE I will provide improved extension services by encouraging emergent farmers and entrepreneurs to provide mentorship to other local farmers in their communities.

**MAZE II** will establish and develop the capacity of farmers associations in Maputo province. Through a partnership with CLUSA, the program will replicate a successful mobilization program that farmers and cooperatives achieved in the north. The goal of this leading edge part of the program implementation is three-fold: linking farmers to financing, increasing farmer networks to expand market linkages, and provision of skills training.

**MAZE III** will expand the U.S. government’s Health Service Delivery Project by improving the capacity of the health care system in Maputo province, where cases of malaria, tuberculosis and HIV/AIDS are on the rise. Using a coordinated approach and a budget of $35 million over five years, the program will lead a consortium of international partners, NGOs and community-based organizations to strengthen the capacity of local health infrastructure. Specifically, MAZE III will partner with Family Health International and World Vision, along with the Health Ministry, Red Cross, and local community leaders to design and implement a comprehensive short-term health investment plan, build basic health facilities, maintain medical and non-medical equipment and build capacity through training of nurses, midwives and other medical staff.

MAZE will align closely with Mozambique’s Poverty Reduction Strategic Program (PARPA II). Such partnership will create an environment of mutual confidence and commitment to ensure the success of U.S. foreign assistance programs in promoting food security in Mozambique.

The progress of Mozambique’s development towards shared geopolitical interests in the Southern Africa region can strengthen mutual ties with foreign policy interests. Significant development progress and alignment with African and regional commitments such as Comprehensive African Agricultural Development Program (CAADP) can solidify
Mozambique’s role as a dependable ally due to its strategic geographic location, transit corridors, ports and overall importance in world trade.
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Part 1: Country Assessment

I. Food Security Summary

Mozambique remains one of the poorest countries in sub-Saharan Africa despite its steady recovery following two decades of devastating civil war. The country has great development potential as it is well endowed with natural resources and has abundant fertile land and water, a favorable climate, unique cultural and ecologic assets, low-cost labor, and close proximity to neighboring international markets. It also has comparative advantages and value-added in the agricultural, mining, forestry and tourism sectors. Although the country has exhibited strong development potential, experiencing a relatively high average economic growth rate of around 8% per year between 1994 and 2006 and 6% from 2008-2010, its economic infrastructure is neither well-developed nor conducive to competing in the global economy. The country requires substantial private investment and development assistance in the areas of knowledge and technology transfer, human and organizational capacity, and market development for value-added products in order to realize its full potential.

Mozambique’s economic and social progress in the last two decades is significant, but also must be placed in the context of the health and security of its population. It continues to have high levels of poverty that show major disparities across the country’s different regions. In 2008, the national poverty level stood at 54%, but with levels as high as 81% in the southern province of Inhambane and as low as 34% in the central Sofala province (See Table 1). This reflects some of the vast disparities between geographic regions within Mozambique where the north and central regions generally are more prosperous than the south — a significant trend that applies to many sectors. Potential for development is greater in the North and Central regions than in the South where there is greater need. The consequence is that governmental and non-governmental organizations tend to focus aid efforts on the North and Central regions where they see the greatest potential for impact. This raises the persistent question of where to focus future aid efforts. The recognition of these geographic and programmatic aid disparities alongside a rigorous needs analysis of the country as a whole has exposed the explicit lack of development assistance to farmers in the Southern provinces.

II. Justification to Implement This Program in Maputo Province

Farmers continually face social and economic constraints to their expansion of land under effective agricultural cultivation. Some of the specific economic challenges are the limited availability of labor, sustainable and conservation farming options across agro-ecological zones, draught power, and irrigation systems. A social constraint includes rising numbers of chronically ill family members as a result of the HIV/AIDS epidemic. Above all, soaring food prices are

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making inputs increasingly unavailable to farmers resulting in increased food insecurity and vulnerability.\(^8\)

Therefore, a successful food security program must necessarily account for the challenges and opportunities faced by Mozambican farmers, which can be summarized as follows:

- While the country has vast agricultural potential, much of it remains untapped.
- Although Mozambique has potential to become a competitor in international trade and exports, the country is comprised of small farms that cannot produce at economies of scale. Additionally, small scale farmers lack the training, skills and information (through knowledge transfer) to participate effectively in the market.
- Poor communication infrastructure and extension services means that farmers are unable to share best practices or make market linkages appropriately.
- Poor water management and infrastructure means that farmers are unable to fully realize their crop potential.
- With the HIV/AIDS epidemic and poor health infrastructures compromising the lives of Mozambicans, their ability to effectively participate in the market economy is continuously undermined.

Part 1 of this report examines these vulnerabilities in detail in order to provide a targeted, country-wide needs assessment for Mozambique. Part 2, the program proposal, suggests ways by which MAZE can address these vulnerabilities in its pilot program.

The MAZE program’s service area is located in the Southern province of Maputo. With the exception of Maputo city, Maputo province is characterized as rural and agricultural, similar to the rest of the country. However, since the North is considered to be the breadbasket of Mozambique, the trend is that most development programs and government interventions are focused in the north. This has resulted in a significant deficit in development aid and food security in the rural areas of the South. A comprehensive vulnerability and needs assessment of the country has reinforced this conclusion. For these reasons, the MAZE program is proposed to launch in Maputo province. The feasibility of the proposed program in Maputo province was determined to be relatively high after taking into account regional issues related to the presence of stable transportation routes, functional community and social centers, and the close proximity to both local and international markets. Additionally, many of the central offices for international aid organizations and service organizations such as banks, agribusinesses and farmers associations are located conveniently in Maputo city. The MAZE partnership between USAID and CLUSA and implementing partners such as TechnoServe, ACDI/VOCA, Family Health

\(^8\) Mozambique Biodiversity and Tropical Forests 118/119 Assessment, USAID, Editor. 2008.
International, World Vision International, Gapi, etc., will greatly benefit from the close proximity of the program service area to their functional and administrative hubs.

III. Agricultural Productivity – Challenges and Opportunities

In Mozambique, almost 80% of its 21 million people are engaged in rural agriculture, largely at the subsistence level. It is widely recognized that the most effective and sustainable way to reduce poverty and food insecurity is to raise the productivity of resources that the rural poor, small-scale and subsistence farmers depend upon for their livelihoods. In Mozambique, these resources are agricultural land and inputs, machinery/tools, and labor.

Land Usage

Large areas of land in the country are currently unutilized. Out of the 36 million hectares of cultivatable land throughout the country, one-tenth of it is currently suitable for crop production of which only 12% is being used. Of all the land being cultivated in Mozambique, 99% is accomplished by smallholder farmers. Smallholder farmers and most of the agricultural economy remain largely dependent upon Mozambique’s natural resource base. Food security programs must help to address low and variable agricultural production by improving and expanding access to technical assistance, knowledge transfer and market information.

Although land is in abundance, threats to the integrity of the land and natural resources available to farmers include “habitat fragmentation and deforestation, soil depletion and erosion, pollution and waste disposal, and overexploitation of coastal and marine resources.” Additionally, regular natural disasters such as frequent flooding and droughts continue to threaten the livelihoods of the rural poor and smallholder households. Although Mozambique’s food production systems are extensive, productivity is subpar, only allowing for production of basic subsistence foods rather than providing necessary dietary diversity or other conditions for household food security.

Domestic Market Linkages

In Mozambique, the majority of farmers access markets informally by selling their harvest to traders who act as middlemen and visit various small farms to purchase and amass produce. These traders, subsequently, sell the produce they have gathered to large agribusiness companies. Although this gives smallholder farmers business and direct income, they are often compelled to sell their produce to traders below the market rate, because they are unable to store their produce, possess limited skills to negotiate with legitimate buyers directly, and carry insufficient knowledge on export procedures. The statistics from survey research demonstrate that farmers

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possess limited knowledge of market prices, inputs, and effective measures for increased productivity. Only 30% of farmers possess knowledge about price information, 4% understand use of fertilizers, 4% know how to effectively use irrigation, and 5% understand pesticide-use (See Table 2).16 As such, extension services aimed at expanding the explicit and tacit knowledge of farmers through technical and financial assistance will be integral to the MAZE program proposal.

It follows that Mozambique’s potential for agricultural productivity continues to be compromised by the vulnerability of small farms. Small farms are unable to produce in large volumes or practice economies of scale. Thus, they are beholden to informal traders and are unable to link directly to the markets, which require larger volumes. Recent studies cite the importance of considering the effects of farm-size.17 Economies of size become relevant when considering the transaction costs of acquiring information on new farming techniques. The transaction costs are largely the same for small and large farms but the net returns are greater for larger farms. Transaction costs will decrease if the knowledge and use of techniques are expanded. However, small farmers will be less likely to implement new farming practices due to the transaction costs. Additionally, small farms are less likely to experiment with new farming techniques as it is more difficult for them to sustain the potential consequences of these risks than it is for larger farms. They also suffer the disadvantage of being unable to obtain quantity-based discounts or access to credit and inputs, often more likely to be granted to large farms.

Current Programs

The importance of increasing land usage, scaling up production of small farms to medium-sized farms, and improving market linkages for rural farmers has been recognized by the donor and development community in Mozambique. Most of the current programs help farmers to realize their market potential through identifying and introducing new products, gaining access to and utilizing information about market needs (e.g. demand for variety, quality and packaging), facilitating linkages with potential buyers, organizing farmers associations and groups to increase information dissemination and marketing economies of scale, and facilitating more secure business partnerships for farmers such as contract farming. Several notable programs have shown impressive results, and such programs promoting market-driven activities could be scaled up and intensified on a local level.18

In particular, CLUSA, working with the support of the Provincial Department of Agriculture, has shown tremendous success in developing The Emerging Farmers Program in the Northern and Central provinces of Nampula, Zambezia, and Tete. CLUSA selected 20 “emergent farmers” in each of these provinces to come under the organization’s support in scaling up production to

become medium-scale farmers. Note that although there is variability in how agricultural land holdings are measured, in this report, small, medium, and large scale farms are classified as holdings covering fewer than 10 ha, 10-60 ha, and greater than 60, respectively. CLUSA assists emergent farmers by helping them gain access to production bank loans and providing mentorship on “budgets, production technology, forecasting, yield estimates, crop input supply planning, and labor planning.” CLUSA has also utilized farmers associations in helping emergent farmers gain access to market linkages. The impact of this program is enormous with the 20 farmers selected in Nampula alone farming a total of 400 ha, gaining thousands of dollars (USD) in credit, and selling thousands of dollars worth of produce. Such improvements allowed these farmers to send their children to school, pay for health services when needed, and increased knowledge sharing and agricultural productivity within entire communities due to the mentorship provided by these emergent farmers.

TechnoServe, an organization dedicated to helping entrepreneurs in developing countries start businesses, is also working to scale-up production in Maputo, only it is doing so by converting large plots of uncultivated land into large commercial plantations. Based on TechnoServe’s analyses of the horticulture sector, it found that Mozambique can lead in counter-seasonal export of high-quality fruits to Europe and the Middle East if it takes advantage of a 3 to 4 week production window in which it is able to produce more high-quality fruits than its African competitors. Utilizing funding from USAID, TechnoServe selected two entrepreneurial leaders in Maputo Province to rehabilitate large citrus estates left unattended by the Mozambican government for over two years. By helping them raise private equity and negotiate market linkages with EU fruit importers and distributors, TechnoServe has successfully helped these entrepreneurs revive the plantation approach, through a business they entitled “Citrum”, as well as build up their exports base and employ almost 300 permanent and contract staff on the plantation. TechnoServe notes that Maputo Province’s favorable growth conditions and infrastructure conducive to shipping large volumes through its well-run port provided an enabling environment for Citrum’s growth. TechnoServe cites that scaling up its activities within the horticulture sector holds the potential to generate up to $2.75 billion per year.

As such, these combined efforts represent a tremendous opportunity for country growth and increased food security that MAZE will propose to expand and perpetuate.

Domestic Food Networks

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19 Emerging Farmers Program, NCBA CLUSA. <http://www.ncba.coop/pdf/MozambProfiles_Emerging%20Farmers_LoRes.pdf>
There is high potential for agricultural development in Mozambique. Since the civil war, the political and macroeconomic conditions of the country have stabilized. The agro-ecological conditions for the production of a variety of agricultural products, with the added advantage of counter-seasonality, are highly favorable across the country. Although the internal markets are still greatly dependent on imports, there is wide access to preferential markets for Mozambican products overseas and within Africa.

The rural town of Chókwè, with its 20,000 ha of irrigated land, occupies optimal conditions for growing horticultural products (tomato, potatoes, etc). It also located nearby to the biggest national and regional markets (Maputo and the Gauteng region of SA).

Mozambique’s agro-climatic conditions are ideal for growing tropical crops with high market potential worldwide (banana, mango, chili pepper, papaya, pineapple, litchi) and high-value intermediate crops (paprika, flowers, oranges, tangerine, lemon, grapefruit, kiwi). While many regions are most suitable for rice production, the country does not yet even supply its domestic market needs. Mozambique still imports large quantities of agricultural and food products that may be produced locally, including cereals, tropical fruits, horticulture, meat, eggs and dairy products.

Food availability across Mozambique is disparate due to wide regional variations in levels of household and regional agricultural production, stockpiles and net imports, and food aid. As a whole, Mozambique experiences a deficit of 1 million tons of various food products (including rice, wheat, maize, Irish potatoes, chicken, fish and cooking oil) according to the government. Although the Northern regions of Cabo Delgado, Niassa and Nampula and parts of Central Mozambique generally produce grain surpluses, it is not transported to the South where there is a deficit, but instead to the more proximal neighboring countries like Malawi where the demand is high. As a result, the Southern provinces of Inhambane, Gaza, and Maputo import food and grain from neighboring countries such as South Africa.

Transportation infrastructure and market links between the North and the South are not well developed. Although the North produces surpluses, the high costs of transporting food and grains to the South make it unprofitable and impractical. Not only is distance a factor for domestic, north-south trade but also the poor quality of road and rail infrastructure connecting the two regions add to the challenge (only one-fifth of the nations highways are paved). In the rainy season, more than two-thirds of all roads are virtually impassable.

These factors serve to further justify the MAZE proposal, with its focus in the southern part of the country and Maputo Province in particular to increase agricultural productivity and self-sufficiency.

IV. Agribusiness
While programs in Mozambique are making a shift towards farming as a business rather than for subsistence, there remain key challenges as well as areas of opportunities that must be considered in understanding the country’s potential for agribusiness and its role in increasing food security.

Financial Services

Development of both small and larger scale agricultural enterprises depends on financial access. Yet, the financial system in Mozambique remains rudimentary. Bank credit in many remote areas of the country remains nonexistent. Because many smallholder farmers cannot even afford cash outlays as little as $20-$60\textsuperscript{38} to commercialize their crops and otherwise lack access to loans, they have limited capacity to increase their capital and bolster their production. In many cases, these smallholder farmers neither own the land nor keep track of their production and harvest rates over time. Thus, they often have no collateral or harvest records to show to lending banks.

Recognizing this problem, the Mozambican government ran a pilot program that subsidized financing through the state-owned People’s Development Bank. However, the pilot program failed. In the 1990s, the government introduced a microfinance system, hoping that it would alleviate the banking system’s problems. However, most of the microfinance operations still remain centralized in urban areas, particularly in the Central and Northern regions of the country. Fortunately, some farmers have found a solution in the formation of associations, whereby their participation in these larger organizations enables them to receive wholesale loans from lending organizations. Still, these types of loans are rare and farmers are often unable to access small enough loans. Thus, financing schemes for smallholder farmers usually involve input credit and temporary crop advances.

Inability to gain access to credit has typically remained a persistent problem for farmers who are unable to put up sufficient collateral and do not have the organizational capacity to collaborate. Under the Emerging Farmers Program launched by CLUSA and supported by USAID, however, farmers began to be empowered as they were assisted in attaining credit and accessing farmers associations. According to Eric Johnson, an agribusiness senior consultant for USAID in Mozambique, the program essentially created a “risk-guarantee system.” USAID made agreements with three banks and guaranteed 50 percent of the risk. Thus, a small farmer who wanted to borrow $250 but had limited or no collateral to post, could gain assistance from the program, which would go directly to the bank and guarantee 50 percent of the risk. “The whole idea is to get more money out to the rural areas,” said Johnson.\textsuperscript{30}

\textsuperscript{38} Mozambique: Access to Credit through Small Farmers Associations, W.B. CLUSA, Editor. 2009.
While the risk-guarantee system may work in some areas, research shows that farmers who lack access to USAID and other international organizations are not likely to benefit from such a system. Thus, the creation of farmers’ associations within provinces, from north to south, is crucial to providing farmers with proper representation and a stronger voice not only in credit unions and other lending institutions, but also in donor collaborations with organizations like USAID and the World Bank Group.

Given this high agro-climatic potential and proximity to the major markets of the region, Mozambique has potential to become a major producer and exporter in Southern Africa. However, despite its huge potential for economic growth, Mozambique still has very limited credit opportunities offered to farmers. As of 2006, the access to credit and loans for farmers who had no financial support from foreign investors was recorded at 4% (See Table 2). Thus, a food security program meant to support farmers and their agricultural productivity must also support their access to finance.

**International Trade and Investment**

Mozambique has sustained strong economic growth with exports growing at rates as high as 15% in FY 2005, but when exports from mega-projects (aluminum smelting, hydroelectric power plants, and natural gas) are excluded, growth in exports is reduced to approximately 3%. This offers evidence of a poorly diversified export base. Maize is one of the most important staple foods in the African region and is the most traded commodity, representing 82% of Mozambique’s informal trade captured in the 2009 marketing year. Informal trade between Mozambique and Malawi remains strong, as higher food prices in Malawi drive it to import maize.

Mozambique has access to many regional and international markets with high demand for food varieties resulting in the potential for agricultural diversification and higher income for farmers.

The economy is graded by the International Monetary Fund (IMF) to be very open to foreign trade and investment. Some of the major international investment projects have brought in much needed money, employment and opportunity in the different economic sectors. In agriculture, agro-processing and agricultural production investments by companies such as Chiquita and Dole not only employ thousands, but also help secure buyers for smallholder farmers and households. Other benefits that farmers can accrue include access to company-sponsored project trainings in farm development, best practices, marketing and distribution.

High trade costs for transporting goods, especially across borders, however, continue to have a negative impact on prospects for expanding African trade, making producers less competitive.

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While reducing tariffs and other trade barriers remains important, and must continue as part of the liberalization process, Mozambicans will not be able to benefit from reform unless trade costs are reduced.34

Bottlenecks in the form of regulatory and administrative constraints to transport and transit must also be reduced. Customs procedures, duty drawback schemes, and other requirements push up the cost of trade. Improving the trade-related business climate is a measure that will attract firms into the export market and boost industrial productivity.35 Farmers associations, by bringing farmers organizational capacity, collaboration, and clout could be very effective in reducing trade costs and making trade more feasible for Mozambican farmers.

Current Programs

Programs in establishing and coordinating farmer associations have been very successful in parts of Mozambique. However they have largely been established by aid and development organizations in the north of the country. The Southern provinces have not yet become integrated in such programs that have the potential to expand on a national level.

Another main constraint in the process of sustainable development in Mozambique is the low capacity of its civil society. Some gradual progress has been made in the areas of civil service training systems and local participatory community planning, for example with the help of CLUSA in the domestic market; however, much more could be done to help farmers in leveraging and maximizing their market potential.36

The model for farmer associations is the Farmer Owned Company called Ikuru, Sarl. In 2003, a group of farmer’s unions in collaboration with two domestic and international social investment organizations (a small domestic Investment Company called GAPI and Oxfam Novib) and with the institutional support of CLUSA, established Ikuru – an innovative farmer-owned trading company. Ikuru is the leading farmer-owned business in the country and in 2006 marketed 1,332 tons of products. Dividends accruing to the farmer associations are converted to shareholdings for its farmer members. It became a Fair Trade certified company and in that same year exported over 100 tons of Fair Trade products to European markets. The prices paid by Fair Trade to smallholders for their products are on average 25% higher than local market prices and additionally, producers receive a $110 premium for every metric ton sold.37 Ikuru is a sustainable model providing farmers with market and production services, accurate market information, and better negotiation capacity.

Many development organizations such as CLUSA and USAID have invested substantial resources and efforts into building the organizational capacity of small farmers and improving their access to both domestic and international markets. Early efforts on promoting these farmers’ organizations and businesses found that farmers working collectively returned benefits that normally they would not have received on their own, such as being able to gain forward contracts and obtaining improved bargaining power in the market.\(^{38}\)

Studies show that providing marketing training to farmers and building communication networks between them is fundamental in helping producers identify reliable buyers and command fair prices. Presently, CLUSA has helped link small farmers in a number of developing countries with sources of agribusiness and financial institutions by bringing together existing associations as well as unaffiliated farmers.

CLUSA trains farmers to work together as intermediary bodies to identify likely crop surpluses in their areas, control quality, collect and weigh harvests, arrange temporary storage, organize market days, coordinate the transportation of products to buyers, and pay farmers’ salaries. With CLUSA’s guidance, farmers associations approach new buyers and agribusinesses and negotiate contracts. CLUSA also began disseminating market information, including regional and international price and trend data, via newsletters and community radio broadcasts. CLUSA then fostered the alliance of groups of associations, or “forums,” to help them coordinate agricultural marketing on a broader scale and register with the government as legal rural enterprises.\(^{39}\)

V. Water Management and Irrigation Development

Given that almost 80% of the economically active population works in agriculture,\(^ {40}\) effective water management that improves agricultural productivity can have tremendous implications for the food security situation in Mozambique. Irrigation development in Mozambique must be understood in the context of its climate and the irrigation potential of the land. The climate of Mozambique varies from tropical and subtropical in the North and Central regions to dry semiarid desert in the South. Mozambique’s 104 river basins suggest that there is potential for increased water management and irrigation systems. Most of the rivers exhibit seasonal flow patterns that translate into the wet and dry seasons of high waters for 3-4 months and low waters for the rest of the year.\(^ {41}\)

Irrigation development must take into account the two main types of producers, the smallholder “family,” comprising most of the area being used for production and the small and medium private companies. Most of the smallholders practice rain-fed agriculture. Some are beginning to make the transition into commercial agriculture but cite the need for irrigation systems in making

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\(^{38}\) Mozambique - Establishing a Production Services Operation and Building Trade Programs in Mozambique. 2007, CLUSA.

\(^{39}\) Mozambique: Access to Credit through Small Farmers Associations, W.B. CLUSA, Editor. 2009.

\(^{40}\) Water Profile of Mozambique, The Encyclopedia of Earth. 2007.

\(^{41}\) Water Profile of Mozambique, The Encyclopedia of Earth. 2007.
this transition and adequately connecting to local markets. While USAID supports entrepreneurial farmers in Mozambique to begin businesses, they have not yet linked these efforts to irrigation development and thus there may be untapped potential in linking the Emerging Farmers Program to structural development of irrigation and water supply. The small and medium private companies supply directly to national markets, have access to irrigation, and serve as a source of local employment. Efforts to further develop water management may be utilized both in expanding local agriculture to national markets and in creating successful irrigation systems that can be used as models for continued and cost-effective expansion of Mozambique’s irrigation system.

Irrigation development holds potential for immediate and long-term, lasting impact on food security in Mozambique. This is reflected by the prioritization of agricultural development and irrigation subsectors in the Government’s growth and poverty reduction strategy, the second Action Plan for the Reduction of Poverty (PARPA II). Even as the country urbanizes, Mozambicans continue to rely heavily on access to water and other natural resources for subsistence. Much of the basic infrastructure services in water remain in disarray despite some progress since the end of the civil war. These problems trace back to the fact that following independence, new owners took control of irrigated lands but lacked the expertise to operate and maintain irrigation systems. The civil war took its own toll by destroying some infrastructures and leading to the abandonment of others. Moreover, during this time, public funding for infrastructure and building of technical assistance was lackluster. Since the war, the Mozambican government began to prioritize water management and funding towards this purpose but the state of disrepair of existing infrastructure systems is widespread and recent natural disasters as well as impending ones continue to be a threat.

The irrigation potential of Mozambique has been estimated at between 3,072,000 ha to 3,300,000 ha, most of which is found in Central and Northern Mozambique. The south exhibits the most need for irrigation but has little irrigable land. The natural disasters that Mozambique has seen in recent years adversely affected its agricultural productivity and part of the restoration process must include improved irrigation systems.

Irrigated crops primarily include sugar cane, rice, citrus fruits, and vegetables. Currently, much of the irrigation in the country is rain-fed or surface irrigation. The costs of developing irrigation systems have been pegged at USD 1,000 to 1,500/ha for surface integration and USD 1,500 to 2,000/ha for sprinkler irrigation. Maintaining these systems is estimated to cost approximately

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45 Mozambique Biodiversity and Forest Assessment, USAID.
USD 500/ha per year while costs of repairs for existing systems may range from USD 500 to 1,500/ha\textsuperscript{48}.

**Current Programs**

Currently, much effort is being placed on development of irrigation and other infrastructure. These programs are large-scale in nature and are receiving large sums of funding both internationally and from the Mozambican government itself for their development in the near future. Some such efforts are described below.

The International Development Association (IDA) of the World Bank has taken keen interest in rebuilding the urban infrastructure for water supply in Mozambique. Its efforts have centered on the Mozambican government’s policy to utilize public-private partnerships in developing infrastructure through government ownership of assets and private sector management of operations. The focus of the project has been in five major urban hubs, Maputo (the capital), Beira, Quelimane, Nampula and Pemba and has seen significant progress, both in improved production and supply and more effective participation of the government in water management. The National Directorate of Water was reformed and its staff trained in order to facilitate more efficient delivery of water in response to the IDA’s development efforts.\textsuperscript{49} This implies that building up of irrigation structures locally has the potential to influence policymaking, government behavior, and has great potential for extension and expansion (in that irrigation efforts in the South can be made to influence the development of those in the North).

In November 2009, Mitsui & Co., Ltd. offered to build solar power generation facilities and built-in irrigation pumps free of cost in Mozambique. In doing so, the Japanese company is following through on its commitment to the Business Call to Action, BCTA, an initiative created by UK Prime Minister Gordon Brown and the UNDP to invite business leaders to sign onto a declaration to use business in advancing forward Millennium Development Goals. Currently, over 60 multinational corporations have signed on. The government of Mozambique chose model villages to run a pilot of implementation measures towards reaching the MDGs and these villages will participate in this initiative. The program will provide infrastructure on a small scale that harbors improvements in energy and water availability.\textsuperscript{50} It has great potential to be scaled to other parts of the country and could hold possibilities for collaboration or linkages with local agribusiness models.

While food security is dependent upon effective water management and effective infrastructure to support agricultural productivity and proper nutrition, the program proposal presented in this report will not use its funding to support large-scale infrastructure. Given the allotted $100

\textsuperscript{48} Water Profile of Mozambique, The Encyclopedia of Earth. 2007.
million budget, the program would be unable to support large-scale structures. Moreover, much effort is already being placed on large-scale infrastructure by the local government and foreign aid agencies, as described above. It is believed that the continued development of this infrastructure will vastly improve Mozambique’s prospects for food security. Until then, MAZE will support the development and distribution of small-scale irrigation equipment and structures in order to bolster its main programs on local agricultural productivity.

VI. Health & Nutrition

Poor nutrition is both a cause and consequence of food insecurity in Mozambique. In a country where the incidence of stunting is 44% and under-nutrition 24%, improved nutrition must be an integral part of the food security framework.\(^{51}\) While Mozambique has made much progress in reducing the child mortality rate, that rate still remains high and thus, maintains priority in nutritional development programs. Wide variation in nutritional and mortality levels exists between provinces, with mortality being highest in Northern provinces.\(^{52}\)

An estimated 70% of Mozambicans lack access to safe drinking water. Water-borne illnesses and deaths remain highly prevalent with approximately 10% of deaths of children under age 5 linked to diarrhea.\(^{53}\) Therefore, water management will necessarily impact health of Mozambicans.

The most common micronutrient deficiencies and therefore the focus of many nutritional improvement programs are Vitamin A, Iron and Iodine with prevalence rates of 68.8%, 74.7% and 42% (children ages 6-12), respectively. These deficiencies and other measures of malnutrition have many sources. Most commonly cited sources include: inadequate diet, inadequate feeding practices and poor access to clean water and sanitation. Improved nutrition will therefore require expanded access to highly nutritious foods, micronutrient supplementation programs, education on nutrition, improved pre- and postnatal health and nutrition services, and improved water supply management.\(^{54}\)

The needs assessment of Mozambique demonstrates that even though foreign aid donors provide medical equipment and supplies, they are mostly accessible in the Central and Northern provinces of Mozambique. Millions of Mozambicans — especially those from far-flung rural areas — do not have access to these health services because of their remote locations. Moreover, it seems that Mozambicans suffer from malnutrition not because of food and water shortage per se, but the lack of nutritional and health-related education.

The central problem in Southern provinces is lack of access to health care facilities. Even though vaccines, free testing and drug therapy treatment for HIV/AIDS, malaria and tuberculosis are available, the majority of people in rural villages of the South still lack access to these services.

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\(^{52}\) Child and adolescent health/nutrition, World Health Organization. 2009.


Data from 2004 shows that there were “about 1.5 million people living with HIV/AIDS in Mozambique, of whom 60 percent were women and 40 percent men.” The epidemic is worse in the more populated Southern and Central regions of the country and especially around the capital city of Maputo.

Mozambique also experiences dire circumstances regarding health personnel shortages. According to the World Health Report in 2006 on the Millennium Development Goals (MDGs), countries should have at least 2.3 health workers per 1,000 people. Notably, Mozambique has only 3 doctors and 21 nurses per 100,000 people. In the rural areas, the situation is worse, where people must walk up to 15 kilometers to reach the nearest health centers – approximately 80% of which lack water or electricity. The World Health Organization estimates that 31% of Mozambicans can access improved sanitation and that the country has one of the lowest levels of per capita water consumption in the world.

**Part 2: Program Proposal**

Mozambique, the darling of donor organizations, continues to be infused with development funding on all fronts, from infrastructure to agricultural extension, since the end of the civil war in 1992. Yet, the country continues to rank as one of the lowest on the human development index and exhibits patterns of chronic and acute food insecurity across the nation. Thus, innovation in developing a food security program for the country lies in the ability to make initiatives community-owned and community sustained.

The focus of MAZE is not to attempt to redouble large scale efforts to ramp up irrigation or energy infrastructure or governmental reform. Instead, with the $100 million it has been provided over the implementation timeframe of five years, it takes the cue of burgeoning attempts to pilot more comprehensive but small-scale food security programs, such as those piloted by the World Bank Group as “cesta basica.” MAZE proposes to expand already existing and successful programs that flourish in the other provinces of Mozambique and will tailor them geographically and culturally into one comprehensive program to fit the Maputo region, the focus area for this proposal. Most of the exemplary programs that MAZE will adopt are modeled after programs in the North and Central regions. By bringing these programs together in one province through a pilot program, MAZE proposes that the interplay between these tried and tested programs in scattered regions across Mozambique will prove to be a most effective approach to reducing food insecurity. Maputo has been identified as a needy and development-deficient area of Mozambique and thus, MAZE will focus on improving access, availability, and utilization of infrastructure, agribusiness and financial services, regional and international markets, and health services for smallholder farmers. By launching the pilot in a concentrated

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region and within a select population, program administrators will be able to monitor and evaluate the success of merging these programs into one comprehensive food security framework.

MAZE I – Support for Emerging Farmers

1. **Part I – Expand the Emerging Farmers Program implemented in Northern provinces to 350 farmers in Maputo province.**
   - **Allocation of Resources:** $30 million over five years, $5 million of which will be set aside for provision of and support for small-scale irrigation equipment/infrastructure.

2. **Part II – Support establishment of large commercial plantations.**
   - **Allocation of Resources:** $5 million over five years, $1 million of which will be set aside for improved access to irrigation equipment/infrastructure.

2. **Implementing Partners:** CLUSA, TechnoServe, Food for the Hungry International, Food and Agriculture Organization

**Target population**

MAZE I will select 350 emerging farmers in Maputo province. The program will begin with 30 farmers in the first year and scale up to an additional 80 farmers each year.

An audit of farms in Maputo province will be performed to pinpoint those which are performing best. Interviews will also be conducted as a way to gather data on highest performers at the end of which, 30 farmers will be selected based on their performance as well as reviews made by other farmers.

Key traits that will be sought after in these assessments include:

- Ability to manage finances
- Potential to expand arable area being utilized
- Success in farming techniques that can be used to mentor other farmers
- Potential to absorb a concentrated transfer of explicit and tacit knowledge

Another group of farmers will be shortlisted for having potential in the future years of the program if they are able to improve some of their practices. As such, they will be brought into the program to come under extension training of the selected farmers and may be selected as emergent farmers in subsequent years.

**Program Rationale/Objectives**

Mozambique is a country dependent on small-scale agriculture. Almost 80% of the economically active population works in agriculture and approximately 99% of the country’s holdings are
small-scale farms. Thus, medium-scale farms are rare, with the number of farms larger than 3 ha actually having decreased since 2002.55

Leading organizations in Mozambique are starting to help farmers make the shift from subsistence farming to agribusiness. This trend must be continued and expanded to the South in order to make agriculture more lucrative for Mozambican farmers. The future lies in the creation of medium-size farms. These farms have greater ability to connect to the markets by producing larger outputs.

This program recognizes that building larger farms will pave the way for increased agricultural productivity. Small farms must often go through informal traders to sell their output because it is produced in too small a quantity for them to sell directly to larger agribusinesses and trading companies. Thus, they are often constrained to sell at below market prices and are left to farming at subsistence levels. Moreover, this program acknowledges that not all small farmers are successful farmers so it recognizes those who have consistently shown high performance and supports them in becoming medium-size farmers who can more actively engage with the market.

The second part of this program, establishment of a large commercial plantation, recognizes the untapped agricultural potential of Mozambique. Studies show that the country has enormous potential to become a major net food exporter, especially if it begins to take advantage of its arable land, currently – only 12% of which is under cultivation.56

Part I – Emerging Farmers Program (EFP)

Thirty farmers will be selected in the first year and then eighty farmers in each subsequent year to become emerging farmers. MAZE I will support these farmers in increasing their production to become medium-scale farmers. As access to credit and finance remains the biggest barrier to increasing the scale and size of farms in Mozambique, MAZE I will help these farmers gain access to local bank accounts and loans, and assist them in financial management and budgeting. On the technical assistance front, MAZE I will assist these farmers through the learning curve with a focus on how to utilize production technology properly, forecasting, yield estimates, crop input supply planning, and labor planning, again under the direction of CLUSA and USAID technical assistance staff. These emergent farmers will also become trainers of local farmers, thus enabling an extension services arm of the Emerging Farmers Program and increasing the impact of the programs beyond those farmers that have been selected by the program.

This program will be managed by CLUSA and TechnoServe, organizations that have already launched and tested the Emerging Farmers Program in the northern provinces of Mozambique.

Food for the Hungry International and the Food and Agriculture Organization will work to support this program by assisting with the introduction of small-scale irrigation techniques. Thus, the program will support the growth of these farms through provision of equipment, including drip kits and treadle pumps, and also training in the efficient management of water and small-scale irrigation.

**EFP – Impact and Evaluation**

This program is expected to cause a direct increase in the productivity levels and income of the 350 emergent farmers enrolled into the program. It will also indirectly impact farmers through mentorship provided by the emergent farmers’ extension trainings, their ability to connect their local communities to the markets, and their participation in farmers associations (see MAZE II). The number of farmers projected to be indirectly impacted by this program is 10,360. This number is extrapolated from CLUSA projections on how many collaborating farmers would be impacted by being under mentorship of 400 emergent farmers over a five-year period. They projected that this number would be 11,840 farmers.

It is expected that this program will raise the average income of rural farmers in Maputo province, increase their access to markets, improve their utilization of technological practices and sharing of best practices, increase the productivity of farmers, and allow more of them to emerge from poverty. Together, these outcomes should serve to increase the food security of these farmers.

To measure the success of this program, it is essential to keep track of the growth in production output and market linkages. Therefore, the number of local farmers working under the supervision of selected emergent farmers will be tracked. The agricultural output of the medium-sized farms also must be measured on a quarterly basis. The success of the program will also be measured in the level of participation of women. Increased participation of women as emergent farmers will be essential and must be actively encouraged.

**Part II – Commercial Plantation Program (CPP)**

The second part of this program supports the establishment of multiple (5) large commercial plantations. TechnoServe, an organization dedicated to assisting entrepreneurs in developing countries build sustainable businesses, has identified enormous potential within the horticulture industry in Mozambique. Its analyses of the sector show that Mozambique has the ability to lead in counter-seasonal export of fruits that are high in quality.

**Target population**

Approximately 10 entrepreneurs will be selected based on their business best practice abilities. These entrepreneurs will be paired such that each pair will manage 1 of 5 commercial
plantations. It is estimated that approximately 300 staff members will be employed by each of the five plantations.\textsuperscript{57} Thus, approximately 1,500 additional farmers are expected to be positively impacted by the five plantations of this program. These employees will be recruited from the farmers associations brought together by the program outlined in MAZE II.

Program

Using TechnoServe as the primary implementer and utilizing the organization’s analytical surveys of horticulture in Maputo, MAZE I will increase the land being cultivated as commercial plantations in Maputo. As such, MAZE I proposes an expansion of TechnoServe’s efforts in Maputo. MAZE I will identify five high-value crops to be cultivated on five separate large commercial estates. The crops being grown will be decided based upon extensive and ongoing analyses of the horticulture sector (such as those administered by TechnoServe) and other cash crops, analysis of market demand and opportunity to calendarize crops.

After identifying these crops, MAZE I will select approximately 10 entrepreneurs who exhibit extraordinary business sense and management abilities, and have the potential to grow under the tutelage of TechnoServe and USAID staff. These entrepreneurs will be broken into pairs with each of the pairs managing one of the five plantations. Each of these plantations will employ permanent staff. This program must work in conjunction with the farmers associations brought together by MAZE II (described below) to identify and recruit employees for the large-scale commercial plantation.

Those crops identified by the TechnoServe horticulture analyses in Maputo included fruit, vegetables and flowers. Other crops will also be selected through extensive analyses conducted throughout the region.

Future expansion crops

High value crops such as paprika and sesame have been promoted by many NGOs in the last decade due to the minimal resources they require for production and their high profitability. Generally, producers are subject to buyer agreements or out-grower schemes with private agribusinesses. V&M and Export Marketing are the main sesame buyers in the region while Pimenta de Mozambique is the primary buyer of paprika.\textsuperscript{58}

Sesame is highly profitable for smallholders with a large scope for expansion. MAZE will consider future support of extension and training for relay-intercropping schemes with maize, which requires limited additional labor from farmers.\textsuperscript{59}

MAZE will consider future support and expansion of existing restocking programs in goat, cattle, pig and poultry. Support programs for existing livestock tend to focus on two key areas: 1) improving market opportunities for livestock and 2) addressing vulnerability and sustainability.

\textsuperscript{57} Note that this number is extrapolated from Citrum’s roster. Citrum, under the assistance of TechnoServe, currently employs 300 permanent staff.


In the first area, programs promote smallholder competitiveness in markets helping them to improve quality and standards, and supply chain inputs for breeding, feeding and health. The second area helps farmers to identify and utilize cost-effective risk management options to cope with climate shocks and enhance resilience to disease\(^\text{60}\).

Poultry is an especially key opportunity for the poorest smallholder farmers. The project will concentrate on low cost technologies for scaling up poultry production and will concentrate on areas with the largest demand.\(^\text{61}\)

Managing the program

The Commercial Plantation Program (CPP) will be implemented by TechnoServe and each of the five plantations will be managed by a pair of entrepreneurs. TechnoServe, working with CLUSA as a secondary partner, will provide technical assistance, equipment/machinery support, financial assistance in raising private equity and gaining access to credit, increased access to local infrastructure and water management equipment.

CPP – Impact and Evaluation

CPP will directly support the 10 entrepreneurs and the 1,500 farmers expected to be employed by the five plantations. As such, these farmers and their families are expected to see their incomes rise over the long-term. The indirect impact of this program on local farmers will be enormous. Not only will it increase knowledge sharing and best practices through the mentorship under these entrepreneurs, but it also opens up the potential for collaboration between small and medium-size farms and these large plantations. CPP will also positively impact the communities surrounding the plantations by bringing higher productivity, prosperity, and visibility in the international markets to these communities.

The program impact will continue to be evaluated by measuring its effects on local production, economic growth and GDP. Income levels, consumption indices, and other measures of food security, including dietary diversity and nutrition, will be monitored throughout the development of the program. The necessary discipline and rigor to sustain the collection of raw data for these metrics will be imparted to the program participants by CPP.

MAZE II – Support establishment of farmers associations with sustainable functionality and market access in the region

1. Expand CLUSA and USAID initiative to build the organizational capacity of 5,000 farmers in the southern province of Maputo in Mozambique.
   
   **Allocation of Resources:** $30 million over 5 years.

2. Implementation Partners: IKURU, the Hunger Project, Twin Trading, Ltd.

3. Secondary Partners: TechnoServe

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\(^{60}\) International Livestock Research Institute in Mozambique, Siboniso Moyo. May 2009.

\(^{61}\) Environment, Rural and Social Development Unit, AFTS 1 Country Department 2, Mozambique Africa Region., World Bank. May 23, 2006.
MAZE II will invest resources and effort into building the organizational capacity of farmers in Maputo, thus impacting a population that has not benefited as extensively from cooperative programs as farmers in the North. The focus has three main components: linking farmers to financing, increasing farmer networks to expand market linkages, and skills training.

**Target population**

Farmers in Maputo province are the target of this program. Identification of the target 5,000 farmers in Maputo province will involve the cooperation and assistance of local, regional and international development organizations. In particular, MAZE II hopes to coordinate farmers that might already be involved in formal or informal community-based or agricultural associations and even in large-scale farming concessions. MAZE will also partner with IKURU, Sarl, an innovative farmer-owned trading company that primarily works in the Northern provinces at present, but that has the capacity and insight to expand on a national level. Since 99% of farmers in Mozambique are smallholders, the program will tailor recruiting efforts accordingly and utilize rural social and livelihood networks.  

**Program**

Farmers’ success in food and especially cash cropping depends on their ability to obtain the necessary inputs, but also to predict what crops will be in demand for the season, connect with potential buyers and negotiate competitive market prices, and set contracts for harvest sales. MAZE II service sectors will address these vital areas by helping farmers to access financing, link with buyers, and receive training in the many important aspects of marketing.

CLUSA and USAID have invested substantial funds and efforts into building the market and organizational capacity of farmers in the northern regions of Mozambique. The Rural Group Enterprise Development Program, launched in the mid-1990s by CLUSA, has focused its efforts on improving the livelihoods of small farmers and agricultural businesses. Since its inception, the program has helped to create IKURU, the largest, most sustainable, farmer-owned trading company in Mozambique, and currently assists 71,500 farmers and over 1,000 farmer associations. CLUSA is most well known for its access to credit programs through small farmer associations. CLUSA identifies and partners with local agribusinesses interested in providing farmers with input credit and short-term crop advances. It also brokers partnerships with local or regional NGOs to provide agricultural group loans to farmers associations. Due to CLUSA’s widely recognized regional success in the North and lasting program sustainability, MAZE II will cooperate to pilot and expand the initiative in Maputo. The expansion of the program to adapt to the southern regions does not pose many evident critical issues for sustainability or

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63 CLUSA, Mozambique: Access to Credit through Small Farmer Associations, CGAP Agricultural Microfinance Case Study.
64 CLUSA, Mozambique, NCBA. CLUSA International Program. June 2009.
65 CLUSA, Mozambique: Access to Credit through Small Farmer Associations, CGAP Agricultural Microfinance Case Study.
transplantation success. When CLUSA first began work in 1995, the Northern regions were still plagued by conflict and were much less developed agriculturally and developmentally. The South at present has better infrastructure and access to markets in Maputo city and in the surrounding countries, such as South Africa. However, to ensure success, MAZE II must continue to cultivate implementing partnerships with established organizations, the regional government bodies, and implementing partners.

Coordination and implementation

The implementing partners that MAZE II has identified for resources, coordination, and implementation are TechnoServe (management and coordination), ACDI/VOCA (agribusiness development), GAPI (financial services), IKURU Sarl (marketing and agro-processing), and V&M Grain Co. (input credit and crop-advances). Additionally, MAZE II has identified the Hunger Program’s Chokwe Epicenter as an important resource because it is a community center where training, resources, health services, and market information exist. CLUSA has partnered previously with the majority of these organizations and has had long-term successes in cultivating and modernizing the delivery of services to small farmers through farmers associations.

Because widespread financing and bank credit is scarce in most rural areas in Mozambique, input credit and short term crop advances from traders or agribusiness companies are a more common business model. The business cooperation that CLUSA helped to broker between the Dutch owned V&M Grain Co. and small farmers associations in the North is a prime example for MAZE II. V&M’s agro-marketing subsidiary dealing primarily in maize provides short-term, interest-free crop advances to the farmers associations during harvest time. Loans are made without collateral but under contracts specifying amount, quality, price per kilo and total value of crops to be delivered at harvest. V&M then sells the products on the international market. Expanding and multiplying this type of partnership in Maputo province will involve identification of local and regional trading and agro-marketing companies that have interest in exporting the goods harvested in the Southern provinces. The expansion of V&M into Maputo and strengthening the integration of such businesses in the regional market economy is a key to long-term sustainability.66 CLUSA will also be involved in training farmers in organizational development, crop management, contracting, quality control and agricultural extension in order for associations of farmers to effectively participate in such partnerships. ACDI/VOCA has been identified as a potential partner in providing services for the development of agribusiness associations and farmer training because of its experience in the Beira Corridor of Mozambique alongside CLUSA in the Empowering Private Enterprise in the Development of Agriculture in

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66 CLUSA, Mozambique: Access to Credit through Small Farmer Associations, CGAP Agricultural Microfinance Case Study.
Mozambique’s Beira and Nacala Corridors (EMPRENDA) from 2005-2008. This alliance was led by TechnoServe.67

GAPI (Gabinete de Consultoria a Apoio a Pequena Industria) or the United Consultancy and Assistance to Small Industries is a regulated, non-bank financial institution – one of the first in Mozambique. Gapi provides small loans, venture capital and technical assistance to cooperatives and individuals throughout Mozambique. Gapi has already been identified by CLUSA as a potential partner to provide credit to farmers and associations in Maputo province. Gapi is based in Maputo city and thus, MAZE II and CLUSA will support and mobilize this regional institution in Maputo province. MAZE II and CLUSA will also support the organization of umbrella unions or farmers association committees to solicit business plans from small farmers associations and liaise with Gapi to apply for group loans. The association union or committee will then receive and distribute group loans based on the plans submitted by the associations.68

The mobilization and support of local, Mozambican organizations and agribusinesses is a primary goal for MAZE II in order to reduce dependency on foreign aid and organizations and to shift economic sustainability into the hands of national partnerships.

International expertise in management, organization and agribusiness marketing alongside regional expertise and knowledge of rural farmers and associations are both crucial components of MAZE II. Thus, TechnoServe and IKURU are organizations that will help to identify, recruit and manage farmers associations and the partnerships that are established by MAZE II.

Impact and Evaluation

In order to evaluate the impact of MAZE II, aggressive measures will be taken to collect data on its efforts and success. Pre-intervention, mid-term and post-intervention (years 0, 2.5, and 5) data collection will be scheduled and built into the program which will utilize web-based databases for the management of program statistics, regional statistics, survey research data, and farmer information. Tracking of statistics will be carried out by locally hired statisticians and evaluators from Mozambique’s Eduardo Mondlane University in partnership with students from the Fulbright program that sends international students to study in Maputo. Government scholarships will be sought for education of students from the local rural farming areas in Maputo province affiliated and recommended through the farmers associations.

MAZE III – Improve the capacity of the health care system in Maputo province

1. Component 1 – Integration of healthful and nutritious farming practices into extension services program administered by MAZE I’s emergent farmers and commercial plantation program and in MAZE II’s farmers associations

68 CLUSA, Mozambique: Access to Credit through Small Farmer Associations, CGAP Agricultural Microfinance Case Study.
2. **Component 2** – Development of clinics and medical storage to enhance access to health services of 75,000 individuals in Maputo province. Within this program, special emphasis is placed on expansion of PCMT services to provide counseling to at least 1,000 women.

**Component 3** – Improvement of skills and competencies of medical practitioners – 5 doctors, 3 nurses, 3 midwives and 2 nutritionists -- serving the target population, and enhancement of community participation.

**Allocation of Resources:** Component 1 – $2.5 million and Components 2 & 3 – $32.5 million over five years.

3. **Implementation partners:** Family Health International, World Vision International, Health Ministry of Mozambique, Save the Children

4. **Secondary partners:** Red Cross, CLUSA, TechnoServe, Food and Agriculture Organization

**Target population**

Component 1 - The population of emergent farmers (350), commercial farmers (1,510), and members of farmers associations (5,000) from MAZE I and MAZE II will be targeted to undergo agricultural business training on utilizing healthful farming practices.

Components 2 & 3 - Approximately 75,000 individuals in rural areas of Maputo province will be the target beneficiaries of MAZE III. Note that this number is extrapolated from the World Bank Health Service Delivery Project for Mozambique, whereby one clinic serves 15,000 per year. These population groups are the most vulnerable to malnutrition and communicable diseases such as HIV/AIDS, tuberculosis and malaria, but have no direct access to health care services due to their isolation in remote villages, where clinics and qualified medical practitioners are largely absent. Special emphasis within this program will be placed on bringing at least 1,000 women under the care and counsel of PMTCT sites. At least 60 healthcare workers will be trained on PMTCT. The program proposes to increase the number of medical attendants to 5 doctors, 3 nurses, 3 midwives and 2 nutritionists in rural villages. This will achieve the goal of servicing 75,000 people over five years.

**Program**

Component 1 – As part of the training and mentorship provided by CLUSA and TechnoServe for those farmers enrolled in MAZE I and II – emergent farmers, entrepreneurs and farmers on large plantations, and members of farmers associations – workshops will be conducted to teach farming techniques aimed at enhancing nutrition and in some cases, fortification of foods throughout various parts of the value chain.

**Implementation**

Save the Children has already begun to run agricultural business trainings in healthful practices in parts of Mozambique and therefore would be the implementing partner selected to work with
CLUSA and TechnoServe within MAZE I and II, to provide farmers with training on healthful farming practices. This initiative will ensure that all three MAZE initiatives are working in conjunction with one another to produce the best possible outcomes in terms of increased agricultural productivity, improved health, and increased food security. In order to help these farmers gain access to nutritious seed inputs or fortification inputs, MAZE will work with the Ministry of Health and the Food and Agriculture Organization on gaining access (and in some cases, subsidies) to specific high-nutrition seed varieties and fertilizer inputs.

Components 2 & 3 – MAZE III aims to improve the accessibility of health care services; create a more sustainable health management system; improve the skills of local medical practitioners; and increase employment opportunities for local community members.

Using a coordinated approach, the proposed program will lead a consortium of international partners, NGOs and community-based organizations to strengthen the capacity of the local government to provide access to quality health services as well as combat communicable diseases and malnutrition in Maputo province. Through education and mobilization, MAZE III will promote community participation to ensure sustainability and success of health programs.

In recent years, billions of dollars in aid money were poured into fighting HIV/AIDS, tuberculosis and malaria in Mozambique. International organizations and donors, including the U.S. government initiatives under the President’s Emergency Plan for AIDS Relief (PEPFAR) and the Presidential Malaria Initiative (PMI), provided enormous amounts of medical equipment and supplies, vaccines and drug therapy treatment to ameliorate Mozambique’s dire health situation. The assumption is that these aid organizations will continue to provide significant resources in the coming years and will be able to sustain these initiatives.

Therefore, MAZE III will shift away from merely providing vaccines, medical supplies and nutritional supplements. Instead, the program will concentrate mainly on improving access to health services by building rural community capacity and ensuring long-term sustainability. The program will increase the number and quality of local trained nurses, technicians, midwives, nutritionists and others health workers; strengthen vital management systems of local government through the Health Ministry; and improve health infrastructure in targeted areas.

Special emphasis will be placed on the development of Prevention of Mother-to-Child Transmission (PMTCT) of HIV sites in Maputo working towards providing testing, safe delivery, counseling, treatment, and nutrition. In addition, prevention strategies will involve educational programs, counseling, and testing and health services geared towards youth.

Implementation

MAZE III will collaborate with Family Health International (FHI) and World Vision International (WVI), with assistance from Mozambique’s Ministry of Health, the Red Cross, and
local community leaders of Maputo province, to design and implement a comprehensive short-term health investment plan, focused on building basic health facilities administering preventative healthcare education practices, maintaining medical and non-medical equipment and building health capacity through the training of nurses, midwives and other medical staff members.

Since FHI and WVI have already implemented similar operations under the USAID’s Strengthening Community Integrated Programming (SCIP) project in the rural Central provinces of Nampula and Zambezia and amassed experience as well as trust within Mozambican communities as well as regional and local grassroots organizations, MAZE III proposes expansion of these programs into Maputo.

The implementation of components 2 and 3 involves the following measures. Firstly, it will focus on building basic health facilities and safe storage for medical and non-medical equipment, as well as staff houses for doctors, nurses and other medical practitioners. With direct access to health clinics and medical storage within the community, the local villagers will not need to traverse long distances to access basic health services in nearby towns. Additionally, building of staff houses will encourage qualified doctors, nurses and midwives to settle in rural areas for a long period of time. Secondly, MAZE III will train medical practitioners to provide quality health care to the target populations, again using the experience amassed by FHI an WVI in increasing the capacity of healthcare providers in other parts of Mozambique.

Because corruption is rampant throughout the Mozambican government, MAZE III will help build the management and financial capacity of the Ministry of Health to ensure better use of donor funding. The allocation of budgetary resources will also be administered by FHI and WHI, in close partnership with the Ministry of Health, “to reduce commodity shortages, improve transparency, and ensure that basic quality health services are increasingly available and accessible to the targeted population”.

Once the programs for components 2 and 3 are operating smoothly, MAZE III will increase community participation by training community-based health workers in behavior change communication to prevent common illnesses, provide care for common health issues, and increase demand for health services through community mobilization and education. An important component of community participation is nutritional education to improve the overall health of the population.

Family Health International (FHI), which already has offices based in Maputo has begun to spread the availability and usage of PMTCT sites across Mozambique and therefore, has already demonstrated its ability to be effective in PMTCT. MAZE III proposes to collaborate further with FHI on expansion of PMTCT sites as well in order bolster these services with special focus.

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on their educational components. FHI will continue to work with the local provincial health
directorate to expand these services and provide PMTCT training for health care providers.

Impact and Evaluation

The impact of MAZE III program will be measured by the percentage increase in farmers
utilizing farming techniques to accommodate more healthful practices. It will also be measured
by the percentage of individuals who begin receiving health services every year following
implementation of the program. The number of women utilizing PMTCT sites and number of
healthcare providers having received training will also be evaluative measures that must be
recorded regularly. The successes of the program will also be gauged by the retention rate of
trained nurses, doctors and medical practitioners over the implementation timeframe and
subsequent years. Lastly, the success of the program will be reflected by qualitative changes in
the behavioral and nutritional health of targeted individuals in Maputo, registered through
disciplined surveys.

Integration of healthful farming techniques into extension training, improved health services and
education, and improved PMTCT access will all serve to improve the health of the population in
Maputo, thereby raising the probability of success for the MAZE program. With improved
health, these individuals can more effectively participate in the economy, will enjoy longer, more
productive and happier lives, and are more likely to engage in practices that are integral to their
increased food security.

Conclusion

MAZE represents one of the many possibilities for a food security program for Mozambique. In
creating this program, a choice was made between impacting a larger number of people by
focusing on only one facet of the food security issue or reaching fewer individuals through a
more comprehensive pilot program with the intent of using this as a model for future scaling-up
and enhancing long-term development. MAZE takes the latter approach with a multi-pronged
program that depends on cooperative and community-based development in which Mozambicans
take charge and ownership of their development and food-security initiative.

Given a budget of $100 million over a 5-year timeframe, MAZE launches its pilot program in
Maputo province, where a well-managed port and favorable climate are conducive to increased
agricultural productivity. MAZE works with implementing partners already based in
Mozambique and familiar with its culture, climate, and policy environment to help small farmers
scale-up production, form cooperative networks for knowledge sharing, and form community-
based solutions and preventative measures to healthcare challenges. Given the continued infusion
of funding to increased large-scale transportation, communication, and irrigation infrastructure in
Mozambique, MAZE will have the potential to continue to scale-up to other provinces and
appropriately utilize their improved infrastructure facilities. In the meantime, the extension
services and technical assistance provided by MAZE will continue to support small-scale infrastructure projects to bolster the increased productivity of small-scale farms growing into medium-scale farms or uncultivated land being transformed into large-scale commercial farming. Creation of this pilot thus produces a sustainable and scalable model that targets various components of food security value chain.

The outcomes will be multifaceted in their ability to improve the livelihoods of Mozambicans. The program has the potential for immediate impact by reaching smallholders and addressing their immediate needs. It will also have potential for wider scale impact as this comprehensive pilot is used iteratively throughout the country and begins to gain buy-in from international companies and donors for increased public-private partnerships and investment for global market access. In this regard, the vision of MAZE is expansionary. The program is designed to produce increased food security in a way that is sustainable by tackling the root challenges of improved agricultural productivity and weaknesses in the healthcare system through a participatory framework. By reaching some of the most vulnerable in Mozambique and addressing various components of the food security value chain through innovative collaboration, MAZE gives support to individuals without sacrificing their ownership over their livelihoods and their food security.
Appendix 1: Tables Referenced in Report

Table 1

Table 1. Food Security and Nutrition, Poverty and HIV/AIDS Prevalence by Province

<table>
<thead>
<tr>
<th>Provinces</th>
<th>Percentage of Livelihood Groups (LG) 1 and 9 as a total of all households per province</th>
<th>Poverty, Nutrition and HIV/AIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low Income Laborer Group 1 (%)</td>
<td>Marginal Livelihood Group 9 (%)</td>
</tr>
<tr>
<td>Niassa</td>
<td>5.97</td>
<td>3.48</td>
</tr>
<tr>
<td>C.Delgado</td>
<td>2.44</td>
<td>21.95</td>
</tr>
<tr>
<td>Nampula</td>
<td>5.79</td>
<td>1.25</td>
</tr>
<tr>
<td>Zambezia</td>
<td>9.34</td>
<td>6.90</td>
</tr>
<tr>
<td>Tete</td>
<td>17.19</td>
<td>4.44</td>
</tr>
<tr>
<td>Manica</td>
<td>6.34</td>
<td>1.38</td>
</tr>
<tr>
<td>Sofala</td>
<td>4.70</td>
<td>0.22</td>
</tr>
<tr>
<td>Inhambane</td>
<td>13.64</td>
<td>14.16</td>
</tr>
<tr>
<td>Gaza</td>
<td>7.31</td>
<td>2.34</td>
</tr>
<tr>
<td>Maputo</td>
<td>6.86</td>
<td>0.98</td>
</tr>
<tr>
<td>Maputo City</td>
<td>53.2</td>
<td>21.9</td>
</tr>
<tr>
<td>Average</td>
<td>54.1</td>
<td>33.9</td>
</tr>
</tbody>
</table>

Legend:
+ : above national average, and - : below national average
* : high percentage of households with vulnerable livelihoods

Group 1: households that rely principally on informal labor supplemented by low production subsistence farming
Group 9: households that perpetually live on the edge

Table 2

**MOZAMBIQUE’S ACCESS TO SERVICES AND USE OF INPUTS (2005-2008)**

<table>
<thead>
<tr>
<th>Service</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Access to credit</td>
<td>4%</td>
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<tr>
<td>Access to price information</td>
<td>30%</td>
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<tr>
<td>Access to extension services</td>
<td>15%</td>
</tr>
<tr>
<td>Use of fertilizer</td>
<td>4%</td>
</tr>
<tr>
<td>Use of irrigation</td>
<td>4%</td>
</tr>
<tr>
<td>Use of pesticides</td>
<td>5%</td>
</tr>
<tr>
<td>Use of animal traction</td>
<td>10%</td>
</tr>
<tr>
<td>Use of vaccination services for cattle</td>
<td>62%</td>
</tr>
</tbody>
</table>

Source: Agribusiness: Opportunities and Challenges, Agriculture Promotion Center (CEPAGRI), November 2006.

**Appendix 2: Budget**

<table>
<thead>
<tr>
<th>Program</th>
<th>Target Population</th>
<th>Budget Allocation (in USD Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAZE I, II, &amp; III</td>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>MAZE I – EFP (extension services, financial assistance, management supervision, recruitment)</td>
<td>350 farmers (30 in first yr, 80 each yr after)</td>
<td>3</td>
</tr>
<tr>
<td>MAZE I – EFP (small-scale irrigation equipment and support)</td>
<td>.5</td>
<td>1.5</td>
</tr>
<tr>
<td>MAZE I - CPP</td>
<td>10 entrepreneurs, 1,500 plantation employees</td>
<td>1</td>
</tr>
<tr>
<td>MAZE I – CPP (provisions for increased access to irrigation infrastructure)</td>
<td>.4</td>
<td>.3</td>
</tr>
<tr>
<td>MAZE II</td>
<td>5,000 farmers</td>
<td>7</td>
</tr>
<tr>
<td>MAZE III – Component 1</td>
<td>6,860 farmers (from above programs, MAZE I &amp; 2)</td>
<td>.5</td>
</tr>
<tr>
<td>MAZE III – Components 2 &amp; 3</td>
<td>75,000 individuals</td>
<td>8</td>
</tr>
</tbody>
</table>
Appendix 3: Programs on the Ground
<table>
<thead>
<tr>
<th>Program</th>
<th>Total Investments</th>
<th>Partnerships/Coalition</th>
<th>Target Area</th>
<th>Agricultural Productivity</th>
<th>Markets &amp; Private Sector</th>
<th>Agricultural Trade</th>
<th>Nutrition</th>
<th>Underserved Populations</th>
<th>Humanitarian Assistance</th>
</tr>
</thead>
</table>
| **Improve farmers' incomes through training in better farming technologies, production, storage, marketing** | * Households trained in production, storage, marketing and agricultural activities | * Beneficiary training includes: (a) field production extension: quality seed selection and preparation, early land preparation, optimum plant population, soil fertility improvement, timely weeding, disease and pest control, timely planting and controlled burning; (b) environmental conservation related practices: construction of cut-off drains, contour planting, contour plowing, terrace, trash lines, grass strips and stone lines. Most of the conservation activities were done in Gorongosa where the topography is hilly; (c) storage and pest control practices: raised stores/granaries (rat proof), application of smoke where appropriate, aeration to ensure proper drying, root cover for granaries and storage pest control (treatment with organic materials such as ash). | * Alternative income beekeeping (not as successful with little demand for low quality local honey) | * Help train farmers to better market their products | * Child survival 
* Nutrition training for women leaders and beneficiaries [2] | * "Mother and Baby" Farmer Field Trials experimented with maize varieties, soybean, bean, pigeon pea, sorghum, and sesame. |

<p>| <strong>Sofala Province</strong> | | | | | | | | | |
| <strong>Targets households with children under two or pregnant women</strong> | * Care Group Model used | * Module I: Sanitation &amp; Hygiene and Module II: Prevention of Diarrhea | * Vitamin and dietary supplements access and training | * Targets households with children under two or pregnant women | * Care Group Model used | * Year 2 Workshops: - KPCI, LQAS, Verbal Autopsies, Health Facility Assessment, Motivational Interviewing, and How to Work Effectively with Community Development Committees | * Targets households with children under two or pregnant women | * Care Group Model used | * Year 2 Workshops: - KPCI, LQAS, Verbal Autopsies, Health Facility Assessment, Motivational Interviewing, and How to Work Effectively with Community Development Committees |
| <strong>193,500 families received agricultural technical advice (2006)</strong> | * 10.4% production increase (2005-2006) | | | | | | | | |
| PARPA II (2006-2009) [10,15] | * G-19 budget support through donors | * Management of forest and fishery resources * Improve agricultural productivity, smallholder commercial farming, agrarian services | * Fiscal codes for mineral industry * Removing entrenched approaches to business licensing and building physical and electronic infrastructure to support industry * Road Sector Plan (African Bank, WB, EC, other bilateral orgs) | * Provide women with bed nets and insecticide to prevent malaria * Increase girls in school and teachers * Distribute condoms, expand vertical transmission prevention services * Promote gender inequality and women’s empowerment |
| Action Plan for the Reduction of Absolute Poverty (PARPA II) | * Disseminate agri technology * Construct and rehabilitate water collecting infrastructure * Stocktaking, map land occupation, use, utilization (natural resource management) (equitable community access to natural resources) * Rehab and maintenance of national roads | * Simplify procedures for starting business * Flexible Labor Law to create employment | * Diagnose and treat AIDS, increase pediatric ART availability * Construction of water points | * Educate women on infant and young child feeding |
| USAID (2006-2009) [9] | [5,126,192.785 (2006)] | 1.5 million for Lake Niassa ($600,000 Coke, $600,000 USAID 2007 FY, $300,000 WWF) | 1.5 million for Lake Niassa ($600,000 Coke, $600,000 USAID 2007 FY, $300,000 WWF) | * 5.3 million |</p>
<table>
<thead>
<tr>
<th>Organization</th>
<th>Grants</th>
<th>Projects/Initiatives</th>
</tr>
</thead>
</table>
* Set up public-private partnership for Pemba Bay Conservancy (zoning laws, management plans)  
* Recommends investment in infrastructure (roads, rail, ports)  
* USAID’s Northern Mozambique Tourism Project in Cabo Delgado, Nampula, Niassa to promote tourism, increase investment into tourism industry, preserve key environmental assets |
|                                  | Strategic Plan      | * Enhance human capabilities, livelihood capacity, community resiliency and capacity |
| **USAID (2008-2012)** [8]         |                      | * Bureau for Democracy, Conflict and Humanitarian Assistance (DCHA) Office of Food for Peace (FFP), the Office of Health, Infectious Disease, and Nutrition, Bureau for Global Health, United States Agency for International Development (USAID), under terms of Cooperative Agreement No. HHS-A-00-98-00046-00, through the FANTA Project, operated by the Academy for Educational Development (AED) |
|                                  |                      | * Provides funding  
* International Relief and Development (IRD) for agriculture in Inhambane  
* Bed nets |
| USAID/Office of Foreign Disaster Assistance (OFDA) | Inhambane, Manica, Sofala, Zambezia | * Water resource and environmental management capacity strengthened  
* Implement capacity-building programs for civil society organizations  
* Community capacity building and improve collaboration between local governments and private-sector services  
* Support the development of supply of private sector business development and financial services (deliver economic services)  
* Strengthen national trade-policy capacity  
* Pro-poor/inclusive trade strategies and implementation plans developed  
* Provides assistance to small and medium enterprises in accessing information and business development services that will improve trade |
* Support women in the community (involvement in community development)  
* Support women in government planning, budgeting, and monitoring  
* Support women in government planning, budgeting, and monitoring |
|                                  |                      | * Support women in government planning, budgeting, and monitoring |

**Note:** USAID (United States Agency for International Development)
<table>
<thead>
<tr>
<th>Country/Programme</th>
<th>Funding</th>
<th>Goals and Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DFID (2008-2012)</strong> [9,10]</td>
<td>£240 million (5 year (2008-2012))</td>
<td>* 30% increase in percentage of rural population living within 2km of a road (goal) * 3,000 new rural water points to be built and maintained (access to increase to 93%) * To achieve 90% of children immunized with full package, 56% of mothers a year giving birth in an institution * Reduce incidence of HIV/AIDS in youth to 10% * To double number of vulnerable people benefiting from social protection to 300,000&lt;br&gt;<em><strong>PARPA target goals</strong></em>&lt;br&gt; * Access/rights to land&lt;br&gt; * Road and infrastructure development&lt;br&gt; * Support of bio-fuels development (w/ UK, South Africa, Brazil, Moz, 2006)&lt;br&gt; * Access to health services&lt;br&gt; * Rural water&lt;br&gt; * Education (goal to double rate of girls completing upper primary education), social protection for women</td>
</tr>
<tr>
<td><strong>Millennium Challenge Corporation (USAID) (2007-2012)</strong> [9]</td>
<td>$506.9 million (5 year budget)</td>
<td>* USAID, USG&lt;br&gt; * Cabo Delgado, Nampula, Zambezia&lt;br&gt; * Water supply management improvement&lt;br&gt; * Rehabilitation of roads access&lt;br&gt; * Establish efficient and secure access to land - improve political framework, upgrade land information systems and services, help beneficiaries meet immediate needs for registered land rights and better access to land for investment&lt;br&gt; * Reduce spread of coconut lethal yellowing disease, improve productivity of coconut products, encourage diversification into other cash crops&lt;br&gt; * Nacala Dam environmental impact assessment proposal to raise dam height, increase water storage capacity, expand distribution of water&lt;br&gt; * Land and forest mapping, treatment of lethal yellowing disease of coconut palms&lt;br&gt; * Water supply management improvement</td>
</tr>
</tbody>
</table>

* Support and assist business models that benefit the poor - that have the potential for scale-up and replication * Acts as a facilitator between business and potential support sources * Provide capacity-building to microfinance providers (through specialist training institutions)
<table>
<thead>
<tr>
<th>Private Sector [9]</th>
<th>$1 million (USAID), $40 million during 30 years + $5 million (Carr Foundation)</th>
<th>* Oil, gas, uranium, heavy sands, coal mining, alumnum, energy * ARCO, BHP, Mozambique Aluminum, Moma and Chibuto Heavy Sands, Gas Pipeline, Cabora Bassa Hydroelectric, Mpanda Kua, Vale do Rio Doce</th>
<th>* Forestry projects (major) in Niassa Province * Biofuels with intensive agriculture projects in almost all provinces * Carr Foundation donor private funds for national park development (Gorongosa National Park and Mount Gorongosa) * Coca cola has a public private partnership with community in conserving watersheds * Planned oil refinery and cement kiln in Nacala * Tourism through Dubai Resorts and Rani Corp in Cabo Delgado, Quirimbas, Vilankulos, Maputo * Consulting firms focus on environmental management, training, social impact, community resettlement, development of private sector initiatives * Impacto dominates for oil and gas * CONWI-Austral for hotels and tourism * Smaller technical firms: Consutec, Sal Consultoria, Rural Consult, Verde Azul Consult</th>
</tr>
</thead>
<tbody>
<tr>
<td>WFP (2007-2009) [12,13]</td>
<td>$41.9 million over 3 years 381,400 beneficiaries</td>
<td>* Local Procurement and Purchase for Progress (P4P): 2007 - 46,000 tons of local food for $13 million, 2008 - 33,000 tons at $14 million * &quot;Delivering as One* WFP, FAO, IFAD, Ministry of Ag and Industry and Trade</td>
<td>* 250,000 children reached in food assistance through national school system * WFP, UNICEF, MISAU nutrition rehab for 7,500 moderately malnourished children under 5 * 43,000 orphans, 62,000 AIDS affected in home-based care programs * 60,000 mothers in PMTCT and other chronically ill in food support (mostly urban south along Beira and Tete to Malawi corridor) * Provides daily school meals and take-home rations for girls and orphans * Incentives for children from vulnerable families to come and stay in school * Provides fortified food commodities to needy children through health centers * Assists Ministry of Women and Social Action (MMAS) providing home-based care * Nutrition assistance to 60,000 mothers in PMTCT programs and chronically ill (following ART) - food support is an incentive for regular attendance and participation in treatment</td>
</tr>
<tr>
<td>WFP (2008-2011) [14]</td>
<td>$110 million (36 months, total cost)</td>
<td>&quot;Delivering as One* UN joint programs * WFP leads national logistics, emergency telecom, food security, FAO co-chairs food-security cluster</td>
<td>* &quot;Delivering as One* UN joint programs * WFP leads national logistics, emergency telecom, food security, FAO co-chairs food-security cluster * 2 million beneficiaries (54% women) * Supplemental feeding in partnership with Ministry of Health and UNICEF</td>
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<tr>
<td><strong>World Vision</strong></td>
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<tr>
<td><strong>US Embassy PAO</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Small scale irrigation projects (Nampula, Tete, Manica, Inhambane) (2004-2010)</td>
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<tr>
<td></td>
<td>* Small scale dams project (Nampula, Tete, Manica, Sofala, Inhambane, Gaza (2004-2009)</td>
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<tr>
<td></td>
<td>* Fisheries development, marketing, aquaculture production, private sector support services, fish farmer organizations (2004-2017)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>* Livestock development program, improve inputs, marketing infrastructure, extension services, production systems (southern Mozambique)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Disaster Preventio n and Attenuatio n Master Plan (INGC)</td>
<td>* Maputo, Gaza, Inhambane, Tete, Sofala, Manica, Nampula, Cabo Delgado</td>
<td>* Water reservoirs, irrigation systems</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>* Agroforestry management</td>
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<td></td>
<td></td>
<td>* Processing and storage</td>
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<td></td>
<td></td>
<td>* Drought resistant crops and permaculture</td>
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<td></td>
<td></td>
<td>* Agricultural insurance</td>
<td></td>
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<td></td>
<td></td>
<td>* Small business management</td>
<td></td>
</tr>
<tr>
<td>Initiative to End Hunger in Africa (IEHA)</td>
<td></td>
<td>* Develop and disseminate cassava varieties and reducing disease</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>* Enhance local seed production</td>
<td></td>
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<td></td>
<td></td>
<td>* Expand markets for exports</td>
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<td></td>
<td></td>
<td>* Farm farmer's associations</td>
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<td></td>
<td></td>
<td>* Research and extension in cashew production, processing and marketing</td>
<td></td>
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<td></td>
<td></td>
<td>* Research extension in rice production, processing, marketing (Zambézia and Sofala)</td>
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<td></td>
<td></td>
<td>* Enhance biotechnology applications</td>
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<td></td>
<td>* Post harvest research and food technology</td>
<td></td>
</tr>
<tr>
<td>Global Developm ent Alliance (GDA)</td>
<td>CLUSA, AWF</td>
<td>* Biodiversity conservation</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>* Build community assets</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>* State and private sector partnerships</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Business linkages and long term partnerships between Mozambican, US, and South African businesses to increase trade and investment (TechnoServe)</td>
<td></td>
</tr>
</tbody>
</table>