Republic of Mozambique
Ministry of Agriculture

Data Collection and Analysis of Agricultural Loans for Agricultural Development in the Nacala Corridor in the Republic of Mozambique

Final Report

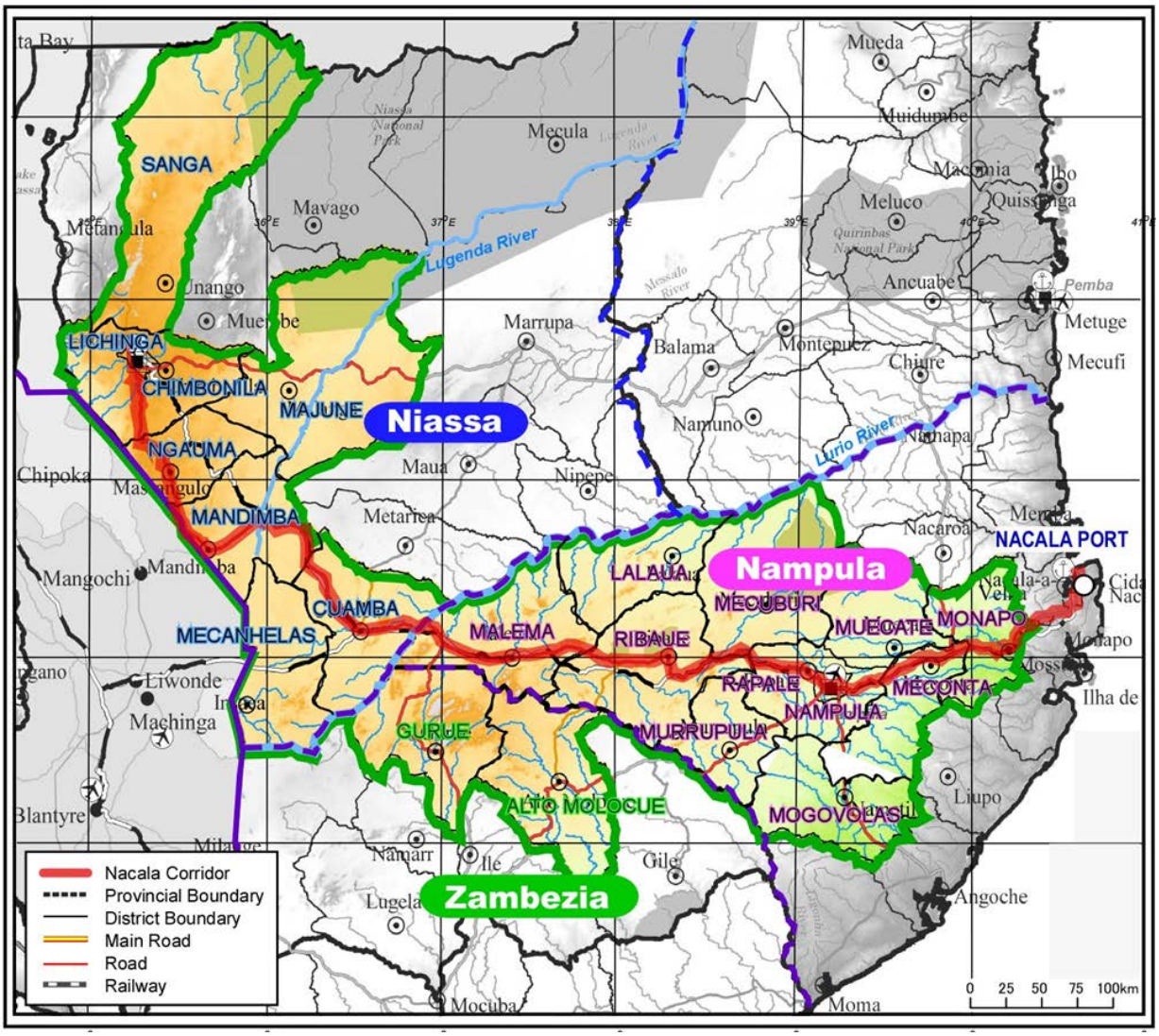
July 2013

JAPAN INTERNATIONAL COOPERATION AGENCY

IMG Inc.

6R
CR (1)
13-018

Map



Source: Support for Agriculture Development Master Plan for the Nacala Corridor in Mozambique

Exchange Rate (July 2013)
1 US Dollar = 98.07 Japanese Yen
1 US Dollar = 29.60 MZN

Table of Contents

List of Tables

Abbreviations

AfDB	African Development Bank
AGRA	Alliance Green Revolution in Africa
A.M.A	Mozambique National Poultry Association
AMPU	Autonomous Mobile Cassava Processing Units
ARA	Regional Water Administration
ASCs	Agribusiness Service Clusters
ASSP	Agriculture Sector Support Program
AfDB	African Development Bank
BAGC	Beira Agricultural Growth Corridor
BCI	Banco Comercial e de Investimentos (Commercial and Investment Bank)
BIM	ıternacional de Moçambique (International Bank of Mozambique)
BMI	Banco Mercantil e de Investimentos (Business and Investment Bank)
BOM	portunidade de Moçambique (Opportunity Bank of Mozambique)
CDM	de Moçambique (Beer of Mozambique)
CEPAGRI	Agriculture Promotion Center
CLUSA	Cooperative League of the USA
CLYD	Coconut Lethal Yellowing Disease
CSR	Corporate Social Responsibility
DADTCO	Dutch Agricultural Development & Trading Company
DNEA	National Directorate of Agricultural Extension
DNTF	National Land and Forests Directorate
DPA	Provincial Directorate of Agriculture
DPCA	Provincial Directorate for the Coordination of Environmental Action
DPEC	Provincial Directorate of Education and Culture
DUAT	right to use and profit from the land
EIA	Environment Impact Assessment
EPA	Economic Partnership Agreements
EU	European Union
EUR	Euro
FAO	Food and Agriculture Organization
FDA	Agricultural Development Fund
FDD	District Development Fund
FEF	Friedrich Ebert Foundation
GAPI	Gabinete de Consultoria e Apoio à Pequena Industria (Unit for Consultancy and Assistance to Small Industries)
GAZEDA	Office for Economic Zones of Accelerated Development
HIV/AIDS	Human immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IAM	Mozambican Cotton Institute
ICB	International Commercial Bank
IFC	International Finance Corporation

IFDC	International Fertilizer Development Center
IIAM	Agricultural Research Institute of Mozambique
INCAJU	Cashew Promotion Institute
INE	National Institute of Statistics
INOVAGRO	Innovation for Agribusiness, Private Sector-Led Agriculture Growth Project
JICA	Japan International Cooperation Agency
JPY	Japanese Yen
KPIs	Key Performance Indicators
M4P	Making Markets Work for the Poor
MCB	Mauritius Commercial Bank Moçambique
MCC	Millennium Challenge Corporation (US Foreign Aid Agency)
MDA	(Brazilian) Ministry of Agrarian Development
MEC	Ministry of Education and Culture
MICOA	Ministry for the Coordination for Environmental Affairs
MINAG	Ministry of Agriculture, Republic of Mozambique
MITUR	Ministry of Tourism
MOPH	Ministry of Public Works and Housing
MZN	Mozambican Metical
NGO	Non-Governmental Organization
PEDSA	Plano Estratégico Para o Desenvolvimento do Sector Agrário (Strategic Plan for the Agricultural Sector Development)
PRODECER	Programa de Coorperação Nipo-Brasileiro para o Desenvolvimento Agrícola dos Cerrados (Japanese and Brazilian Cooperation Program for Cerrado Agricultural Development)
PRONEA	National Agricultural Extension Program
ProSAVANA	Triangular Cooperation for Tropical Savannah Agricultural Development in Mozambique
R&D	Research and Development
SDAE	District Service for Economic Activities
SDC	Swiss Agency for Development and Cooperation
SER	Simplified Environmental Report
SISNE	National Extension System
SNV	Netherlands Development Organization
SOCREMO	Sociedade de Crédito de Moçambique (Society for Credit of Mozambique)
SPGCs	Provincial Services of Geography and Registry
SUE	Unified Extension Services
TIA	Trabalho Inquérito Agrícola (agricultural census)
USAID	US Agency for International Development
WFP	World Food Programme

Introduction

1 Background and Outline of the Study

The agricultural sector is the cornerstone of national development in Mozambique. The Government of Mozambique has adopted the *Strategic Plan for the Agricultural Sector Development (PEDSA) 2011-2020* with the aims of reducing poverty and improving food security by strengthening the sustainability and competitiveness of the agricultural sector, and it identifies the Nacala Corridor as one of the regions with high development potential. The corridor connects Nacala City, which falls within the northern tropical savanna area and is home to natural deep-water harbor of the Nacala Port, across Lichinga City, which is the provincial capital of Niassa Province located in the north-western region. As a member of the *New Alliance for Food Security and Nutrition*, the Government of Mozambique has worked to achieve agricultural development through cooperation with the private sector and donors.

Against this backdrop, the Japan International Cooperation Agency (JICA), the Brazilian Cooperation Agency (ABC), and the Ministry of Agriculture (MINAG) signed a basic framework for the *Triangular Cooperation for Tropical Savannah Agricultural Development in Mozambique* (ProSAVANA) in September 2011. By effectively utilizing private investment for agricultural development in the Nacala Corridor, the ProSAVANA-JBM aims to contribute to poverty reduction among small-scale farmers, improvements in food security, and economic development in the region. In this framework, two technical cooperation projects by JICA, the *Project of Research for Agriculture Development and Improvement of Technology Transfer Capacity in the Nacala Corridor* (ProSavana-PI) , the *Support for Agriculture Development Master Plan for the Nacala Corridor in Mozambique* (ProSAVANA-PD), and the *Project for Establishment of Development Model at Communities' Level with Improvement of Rural Extension Service under the Nacala Corridor Agricultural Development in Mozambique* (ProSAVANA-PEM) began in May 2011, March 2012, and May 2013 respectively. Furthermore, a government-private sector joint mission comprised of stakeholders from three countries (Japan, Brazil, and Mozambique) for the promotion of agricultural investment in the Nacala Corridor visited the area in April 2012. As a result of that mission, the different roles to be played each nation in implementing ProSAVANA-JBM were outlined.

It is planned that priority agricultural development projects for the development of the Nacala Corridor will be proposed in the ProSAVANA-PD. Since agricultural loans are not easily accessible for farmers and private companies under the current financial regime, it is imperative to design and promote "agricultural loan models workable in Mozambique" in order to ensure successful realization of the proposed investments.

In this context, JICA decided to conduct a study on agricultural loans in the Nacala Corridor and commissioned IMG Inc. to implement the Study for "*Data Collection and Analysis of Agricultural Loans for Agricultural Development in the Nacala Corridor, Mozambique.*"

2 Study Area

The Study covers the region along the Nacala Corridor, which stretches from Nacala City at the eastern end to Lusaka, Zambia at the western end, through Malawi. The study area consists of the following 19 districts within the three provinces of Nampula, Niassa, and Zambézia that have been covered by the ProSAVANA-PD.[1]

Province	Districts
Nampula	Malema, Ribáuè, Murrupula, Nampula, Meconta, Mogovolas, Muecate, Monapo, Mecubri , Lalaua
Niassa	Cuamba, Mandimba, N'gauma, Lichinga, Majune, Sanga, Mecanhelas
Zambézia	Gurué, Alto Molocue

3 Study Team Members

Responsibilities	Name	Company
Team leader, agricultural finance, analysis of the financial sector	Shinichi MORI	IMG Inc.
Fund planning	Masaki TSUMAGARI	Tsumagari & Company Limited.
Agricultural development	Setsuko KANUKA	IMG Inc.
Analysis of enterprises	Kazuhiko AMAGAI / Mio TAKAGI	IMG Inc.

4 Study Methodology

This Study was conducted based on a literature review and information collected through field surveys on agricultural development in the Nacala Corridor of Mozambique, as well as through interviews with people related to agricultural loans in Brazil.

In Mozambique, the Study Team visited the following relevant agencies and collected information on the agricultural and financial sectors in Mozambique:

- Relevant government agencies: MINAG, the Provincial Directorates of Agriculture (DPAs) in Nampula and Niassa, the District Economic Activities Services (SDAE) in most target districts, the Fund for Agricultural Development (FDA), the Agriculture Promotion Center of MINAG (CEPAGRI), the Office for Economic Zones of Accelerated Development (GAZEDA), and the Unit for Consultancy and Assistance to Small Industries (GAPI);

[1] The Study Team could not conduct the sampling survey in Mecubri and Lalaua Districts in Nampula Province and Sanga District in Niassa Province due to time constraint and heavy rains that made these locations inaccessible.

- Banco Mozambique and commercial banks that are providing or plan to provide agricultural loans (e.g. Banco International de Mozambique, Barclay Bank, Standard Bank, and Banco Comercial e de Investimentos);
- Agribusinesses, farmers' associations, and farmers operating in the target districts as suggested by DPAs, SDAE, and/or the ProSAVANA-PD Team;
- Agricultural Universities in Lichinga and Cuamba; and
- Other relevant organizations (e.g. CLUSA, TechnoServe, and Malonda Foundation).

The Study Team also visited the Ministry of Agrarian Development (MDA), the Central Bank, people concerned with PRODECER (Japanese and Brazilian Cooperation Program for Cerrado Agricultural Development), and Banco de Nordeste with a view to understanding the specific features of agricultural loans in Brazil and showing their difference from the JICA's Two Step Loan (TSL) designed by the Study Team for Mozambique (shown in Appendix 2). Based on the findings from the literature review and field surveys in Mozambique and Brazil, the Study Tem conceptualized the implementation framework for the agricultural development loan models, including TSL.

Chapter 1 Key Issues in the Agricultural Development in Mozambique and the Nacala Corridor

1.1 Supply Chains of Major Agricultural Products

1.1.1 Staple Food Crops

In the Nacala Corridor, various food crops, such as maize, cassava, sorghum, rice, wheat, haricot bean, millet, cowpea, groundnut and bean, are grown for daily consumption. Maize, cassava, sorghum and millet are the major traditional food crops cultivated by subsistence farmers, while rice is mostly grown by commercial farmers. The per capita supply of cereals, composed of primarily maize and to a lesser extent wheat, rice and sorghum, has increased over the last decade, while trends over the last four decades show a slight decrease in the per capita supply of starchy roots concurrent with an increase in cereals.[2] Mozambican consumers, both urban and rural, tend to shift their consumption based on the relative prices of the main staples.[3] As such, when rice prices are lower than maize flour prices in urban areas, many households shift from maize to rice consumption. While in the north, when maize prices are low, producers seem to prefer to eat their own maize rather than sell it.

(1) Maize

Maize is the most important staple food crop in Mozambique, as well as an important material for animal feed. Its production has been almost equal to the domestic food consumption though it does not meet total domestic demand.[4] According to the ProSAVANA-PD's estimation, maize surplus in the Nacala Corridor will reach 817,000 tonnes per annum, while the demand for maize for chicken feed for meat production at the national level is estimated to reach 480,000 tons by 2030. In terms of calorie intake, maize accounts for 29% of the Mozambican total diet and 66% of the cereals of that diet.[5] The per capita consumption of maize has been decreasing since 2000 probably due to the increased consumption of wheat and rice, leading to a constant consumption amount of maize despite an increased population.[6]

The maize yields in Mozambique are among the lowest in the Southern Africa region though the production has steadily increased since 2006 due largely to expansions in cultivated land. On the other hand, the commercialization of maize has largely not been achieved. While

[2] FAO, 2011. "Nutrition Country Profile, Republic of Mozambique".
[3] Donovan, Cynthia and Tostao, Emilio. 2011. "Staple Food Prices in Mozambique". Prepared for the COMESA policy seminar on "Variation in Staple Food Prices: Causes, Consequence, and Policy Options", Maputo, Mozambique, 25-26 January 2010 under the COMESA-MSU-IFPRI African Agricultural Marketing Project (AAMP).
[4] Consumption of maize can be divided into four main categories: direct human consumption, animal feed consumption, maize processed for industrial uses, and bio-fuels. Human and animal feed consumption are the biggest uses of maize, with maize allocated to milling for processed goods and oil as the third largest uses (SAGIS, 2010. cited in Grant et. al, 2012).
[5] Monitoring the Food Security Situation in SADC (2006). cited in Grant, William.,Wolfaardt, Andre., Louw, Andre., 2012. "Maize Value Chain in the SADC (Southern African Development Community) Region". Technical Report submitted by AECOM International Development. Southern African Trade Hub.
[6] ProSAVANA-PD. Interim Report (1)

approximately 78% of all rural households grew maize in 2008, only 18% of maize was sold on the open market.[7]

The maize cultivation and production in the Study Area comprised 262.7 thousand ha and 366.4 thousand tonnes, respectively, with an average yield of 1.39 tonnes/ha.[8] Mozambique's maize is produced through rain-fed farming with minimal inputs with the introduction of draft animals, agricultural machinery, fertilizer and pesticide being possibly able to bring about significant growth in production. Efficient storage could also bring higher profits to farmers by reducing post-harvest losses. Most maize is sold to households as grain or milled in small lots on a custom-hire basis at small, local hammer mills in both small and large towns while some larger poultry farms have their own mills and feed-mixing equipment. Industrial processing leading to value addition is not prevalent. The processing industry is therefore still in its early stages of development.[9] According to World Bank estimates, 13.2% (about half for human consumption and half for chicken feed) of the total estimated maize crop plus net imports of maize was processed in 2009/10.

(2) Cassava

Cassava is the second most important staple food crop next to maize and it is an important rice or maize substitute especially for poor consumers in northern Mozambique and some parts of southern Mozambique, with total cassava production in Mozambique being 6,267,160 tonnes in 2011.[10] The main cassava producers are Nampula Province comprising 37% of national production, Zambézia 31% and Cabo Delgado 19%.[11] Cassava is commonly intercropped with beans and other crops. In north Mozambique, many households harvest a portion of the cassava for dry cassava sale in the early months of the year (January-February), and the rest is harvested for fresh cassava sale in March-April.[12] Farmers produce more cassava than is required for domestic consumption, but the surplus has not previously been used due to logistical challenges in collecting the roots from smallholder farmers who are widely dispersed.[13]

According to the research by Chitundu, et al. (2011), 96% of cassava in Mozambique is consumed as a subsistence food either fresh or manually processed into *rale*, a fermented, precooked convenience food similar to West African *gari*. 2% of production is sold as fresh cassava, 2% is sold as dried cassava, and less than 1% is used for livestock feed and industrial products.[14] In a new effort to commercialize and market cassava, the Dutch Agricultural

[7] Hélder R. Gêmo., 2011. "Moving Towards the Implementation of the CAADP Framework in the Agriculture Sector: The Case of Mozambique".
[8] ProSAVANA-PD, Interim Report (1)
[9] World bank,2011. "Agribusiness Indicators: Mozambique", Economic and sector work. Report.
[10] FAOSTAT, 2011. <http://faostat3.fao.org/home/index.html#SEARCH_DATA>
[11] Arlindo, Pedroand Keyser, C. John.,2007. "Mozambique Country Case Study". Competitive Commercial Agriculture in Africa Study (CCAA). World Bank and FAO.
[12] Donovan and Tostao.,2011
[13] DADTCO, 2013.: <http://www.dadtco.nl/?page=867>.
[14] Chitundu, Maureen., Donovan, Cynthia., Haggblade, Steven., Kambewa, Emma., Machel, Josina ., Salegua, Venancio.,2011. "Contrasting Experiences in Cassava Commercialization in Malawi, Mozambique and Zambia". AAMP Seminar on "Smallholder-led Agricultural Commercialization"20-22 April 2011, Kigali, Rwanda

Development and Trading Company (DADTCO) is operating Autonomous Mobile cassava Processing Units (AMPU) in Nampula and Inhambane Provinces. The company's processing units produce cassava cake, which can be stored for a longer period than raw cassava and can be further processed into cassava flour and cassava starch.[15] Different from raw cassava, these variations of processed cassava have a potentially huge domestic, as well as international, market. Cassava starch is mainly consumed as food, but it is also readily converted chemically, physically, and biologically into many useful products such as sugar, paper, textiles, adhesives, beverages, confectioneries, pharmaceuticals, and building materials.

The demand for cassava is expected to continue to increase for its use as a staple food and materials for flour, chips, brewery, breads, animal feed, biofuel and starch. The increasing demand for processed cassava is benefiting not only the processing industries but also the local economy and farmers. For instance, DADTCO has partnered with SABMiller, one of the world's largest brewers to produce the first ever commercial-scale cassava-based beer. The beer "Impala" is brewed in Mozambique by the SABMiller's local subsidiary, Cervejas de Moçambique (CDM) with 2,000 tonnes of cassava cake (processed cassava by DADTCO) currently being used at CDM's plant every month. According to DADTCO, CDM is using approximately 40,000 tonnes of cassava cake annually in the production of Impala, creating new employment for over 1,500 smallholder farmers. [16]

Sub-Saharan Africa produces more than 50% of the world's cassava, and there is a large demand for cassava (especially starch) as it is consumed by close to 500 million Africans every day.[17] Yet, Mozambique is not profiting from this demand due to a number of factors such as the lack of an organized collection system that enables timely delivery to processing plants. Possible solutions to this problem are seasonal storage of dried cassava (which is currently being done by large traders in northern Mozambique) or mobile processing units (e.g. DADTCO's AMPUs). New market opportunities for processed cassava could open a range of possibilities for transforming the current subsistence farming method followed by a large number of smallholder framers into one that could generate income.

(3) Sorghum

Sorghum is a major cereal grain in Mozambique with a cultivated area of 2.7 million hectares.[18] It is considered to be a food security crop for most of the Study Area, especially in the regions where rainfall is a limiting factor on maize and rice production. It is also a highly versatile crop with many uses, including for human consumption of animal feed, and from brewing to

[15] Cassava is an excellent source of starch, but starts to degrade almost immediately after harvest, which, together with its high water content, makes it unsuitable for transporting over long distances. Since fresh cassava is perishable and cannot be stored for long periods, it is necessary for it to be dried before long-term storage.

[16] DADTCO, 2013. [Online] Available at: <http://www.dadtco.nl/?page=867>.

[17] Xiao Ye, 2012. "Cassava as an Income-Earning Crop for Small Farmers". Blogs. World Bank.Org. <http://blogs.worldbank.org/africacan/cassava-as-an-income-earning-crop-for-small-farmers>

[18] IIAM, 2012. "INTSORMIL and IIAM collaborate to Promote Sorghum Production in Mozambique". <http://intsormil.org/smimpacts/IIAM.pdf>

bio-fuels. However, due to the poor distribution of improved sorghum seed, farmers continue to use local varieties that have low productivity potentials (0.2 - 0.6 tonnes/ha). While Sorghum production doubled from 187,265 tonnes in 2008 to 384,000 tonnes in 2009,[19] as is the same in the case of maize, per capita sorghum consumption has been decreasing in all likelihood due to the increased consumption of wheat and rice, leading to a constant consumption amount despite an increased population.[20]

(4) Rice

Mozambique is the third largest consumer of rice among Southern African countries. Rice is produced by more than 630,000 households in several regions from north to south. More than half of rice production takes place in Zambézia Province. At a national level, 16.5% of rice growers sell their rice;[21] however, like wheat, per capita rice consumption is increasing in Mozambique and production is not meeting the increasing demand. In 2007, the quantity of imported rice (425,600 tonnes) was four times that of domestically produced rice (101,914 tonnes).

Investment in rice production is increasing in Zambézia, Sofala, and Gaza Provinces, providing good opportunities for import substitution. Like most staple food crops in Mozambique, rice production is mainly rain fed, and as such, investment in irrigation would likely significantly increase production and productivity.

(5) Wheat

Mozambique is a major importer of wheat, mainly for urban consumption. More than 99% of the wheat consumed in the country is imported (2,300-2,600 tonnes per year from 2005 to 2010). Per capita wheat consumption has been growing since the early 2000s, while wheat production has remained relatively low.

1.1.2 Cash Crops

Major cash crops produced in Mozambique are sesame, cotton, tobacco, cashew nut, soybean, potatoe, vegetables, sugarcane, citrus fruits, banana, and pulses. According to the agricultural census (TIA) 2005, sesame was the most common cash crop, cultivated by 8% of farmers followed by cotton, 7%.[22] Cotton and tobacco are grown by out-growers of private companies to which the government has given an exclusive right to buy cotton within their concession areas.[23]

---

[19] FAO STAT, 2012
[20] ProSAVANA-PD, Interim Report (1)
[21] TIA (Ministry of Agriculture)., 2006. "Trabalho Inquérito Agrícola 2005". CD-Rom. cited in Arlindo and Keyser, 2007
[22] FAO Emergency and Rehabilitation Programme in Mozambique, 2007. < http://www.fao.org/fileadmin/templates/tc/tce/pdf/Mozambique_factsheet.pdf>
[23] ProSAVANA-PD, Interim Report (1)

(1) Cotton

Mozambique's cotton lint has a long history on important international markets, traditionally in Europe and more recently in Asia.[24] The entry of new concessionaires and investments in areas outside of the Mozambique's traditional cotton belt (Nampula and Cabo Delgado Provinces9 has brought change to the cotton sector's geographic focus. In 2000 new private companies either initiated activities in provinces other than those for traditional cotton production or took over areas previously developed by others. Those companies that started operation in Sofala, Manica, Tete, and Zambézia Provinces have steadily increased their productivity and production levels. As a result, by 2004, Nampula's share of national production had fallen to below 40%.[25]

Rising international prices have increased cotton production profitability. Cotton lint production in Mozambique has shown an upward trend with an average growth rate of 33% from 2000 to 2009 though with some fluctuations. In terms of exports, after reaching a peak in 2007 export quantities of both cotton lint and cottonseed decreased over 2008 and 2009.[26] Approximately one third of cotton lint and 17% of cottonseed were exported in 2009. There are opportunities for the ginning of cotton for export and processing of cottonseed into oil and cake. Additional opportunities may exist in the form of investment in industrial processes requiring cotton as a raw material (textiles, etc.).[27]

(2) Tobacco

The number of tobacco farmers (registered and unregistered) in Mozambique is estimated at 112,000 with more than half a million people in Mozambique being employed on small-scale tobacco farms, about 5,000 in processing and manufacturing facilities, and 26,000 in the retail sector.[28] Mozambique currently has three green leaf threshing, processing, and cigarette manufacturing facilities.

Tobacco production has increased continuously since 2000 with an average annual growth rate of 29% from 2000 (9,470 tonnes) to 2010 (63,000 tonnes).[29] The country began exporting tobacco in 2002,[30] with exports of tobacco and related products from Mozambique totaling USD 204.1 million in 2011 of which the vast majority was classified as unmanufactured leaf and tobacco refuse.[31]

[24] CEPAGRI(Center for Promotion of Agriculture), 2012. "Agribusiness Investment Opportunities in Mozambique". Ministry of Agriculture, Republic of Mozambique.
[25] Tschirley, Ofiço and Boughton, 2005, p.41. cited in Arlindo and Keyser, 2007
[26] FAO STAT, 2012
[27] CEPAGRI, 2012.
[28] NKC, 2012. "COMESA/SACD/SACU Tobacco Value Chain".
[29] FAO STAT, 2012.
[30] ProSAVANA-PD, Interim Report (1)
[31] NKC, 2012.

(3) Cashew Nut

The major stages of the cashew nut value chain in Mozambique include the supply of inputs, production (dominated by smallholder farmers), and the industrial processing that has been re-built over the past decade through a number of donor-funded initiatives. The supply of inputs, which consists primarily of the supplying of cashew nut seedlings, is dominated by a government agency (Cashew Promotion Institute: INCAJU) that produces seedlings and distributes them to farmers free of charge. The market for cashew nut seedlings is underdeveloped with the agency's limited production capacity and the absence of alternative seedling suppliers. There is no incentive in the market to produce and supply seedlings since all seedlings have been provided to farmers for free. Moreover, although most of the existing trees are aged and of low yield, there is no organization capable of imparting technical knowledge to farmers on the maintenance and replanting of trees.[32]

Mozambique has the capacity for processing approximately 40,000 tonnes of raw cashew nut annually.[33] According to the interviews conducted by GIZ in 2008, there were approximately 22-25 cashew processing factories in Mozambique of which approximately 14 were located in Nampula Province.[34] The main constraint for the management of cashew factories is the lack of stable access to quality raw cashew nut. The cashew nut value chain extends across the border with the processing stage that takes place within Mozambique being primary processing only, referred to as 'shelling' (roasting, cutting, drying, and peeling), while international buyers of the cashew nut engage in the second stage of processing (e.g. roasting and adding flavor and consumer packaging). It appears that cashew processing is a fairly profitable (but not excessively profitable) business, with a margin being between 15-20%.[35] In terms of export volume, the cashew nut exports (raw cashew nut equivalent) have only increased from 24,000 tonnes in 1993/94 to 44,000 tonnes in 2007/08, in tandem with a decline in its share of world exports from 2.1 to 1.6%.

Recent analyses have shown that the vast majority of cashew nut production is being undertaken by small farmers typically owning around 20 trees.[36] Almost 42% of farmers (approximately one million producers) in Mozambique own cashew trees. The average productivity is low at about 2-4 kg per tree while 8-10kg per tree is attainable. Better-off farmers owning between 100-300 trees constitute between 10-15% of all farmers, while middle-income farmers owning between 40-90 cashew trees constitute 25-35% of all farmers, and poorer farmers with 5-25 trees constitute 50-65% of all farmers. Better-off farmers are able to spray the trees with

[32] Mennonite Economic Development Associates, 2011."Value Chain Finance Assessment of the Cashew Nuts Sector in the Province of Nampula, Mozambique". Final Report. Prepared for GIZ, African Cashew Initiatives (ACi).
[33] ProSAVANA-PD, Interim Report (2)
[34] Mennonite Economic Development Associates, 2011.
[35] Ibid.
[36] TechnoServe 2009. cited in Ataman, M. Aksoy and Fehrettin, Yagci.,2012. "Mozambique Cashew Reforms Revisited". Policy Research Working Paper, 5939. The World Bank Poverty Reduction and Economic Management Network. International Trade Department.

fertilizer, which increases the yield and improves the quality of the cashew nut leading to better prices on the market. The poorer farmers' net income per tree per harvest is estimated at about USD 1.20, in contrast to USD 3.42 earned by better-off farmers.[37]

(4) Sesame (Oil Seed)

Within the Study Area, sesame attains the highest margin for producers. The sesame's farm gate price is as high as MZN 23/kg. Exports of sesame for the confectionary and organic produce market have been increasing,[38] with total exports reaching approximately 40,000 tonnes in 2009 with global demand estimated at 2.8 million tonnes according to AgriFUTURO. The world consumption of sesame is growing 6% annually as its largest consumers (China and India) are increasing their consumption while EU's imports of sesame oil doubled between 2002 and 2005. Large exporting firms like Export Marketing Company LDA[39] and OLAM[40] mainly purchase sesame from farmers' associations and medium-sized farmers. These companies are facing a shortfall in the supply of sesame as a result of low yields, the unavailability of improved seed for confectionary use, and sesame flea beetle epidemics.[41]

(5) Soybean

Soybean is a fairly new crop to Mozambique, but agricultural and market scenarios suggest a high potential for the crop in northern Zambézia and southern Niassa Provinces as well as in Manica and Tete Provinces. In both areas soybean production can strongly benefit from increasing local demand for soybean cake (as chicken feed), investment in new industrial units mentioned below, and the existing roads and railway linking production sites to the important consumer markets of Beira in the center of the country, and Nampula and Nacala in the north.[42]

Mozambique is in the first stages of soybean production with combined efforts for investment driven by: 1) strong interest among NGOs and donors to promote domestic soybean production in the Gurué/Cuamba area of northern Zambézia/Southern Niassa; 2) interest in the use of soybean in Mozambique's feed (poultry) and oil sectors; 3) the Mozambican government's commitment to introducing alternative crops for the diversification of smallholders' farming

[37] Ibid.
[38] ProSAVANA-PD, Interim Report (2)
[39] Export Marketing Company LDA is a subsidiary of the Export Trading Group, a multi-national trading company engaged in procurement, processing, warehousing, transportation, and merchandising of grains. With its headquarters in Singapore, the company is operating in 42 countries in the world, out of which 26 countries are in Africa. Source: Export Trading Group Marketing Brochure 2012-13, "Enhancing Africa's Potential" < http://www.etgworld.com/wp-content/files_mf/etgmarketingbrochure2012_english_final_lowres_v2b.pdf>
[40] With its headquarters in Singapore, OLAM is operating in 65 countries in the world, out of which 18 countries are in Africa. Its operation in Mozambique started in 1999. The company is handling agricultural produce such as cotton, cashew nuts, and peanuts. Source: "Olam Mozambique: Growth through Partnership in Mozambique" February 2013. OLAM's website < http://olamonline.com/locations/worldwide/east-africa/mozambique
[41] USAID, 2013. <http://agrifuturoproject.com/index.php?option=com_content&view=featured&Itemid=435>
[42] Arlindo and Keyser, 2007

since farm-gate real prices for important food staples, including maize, have been declining over the past years; and 4) emerging trade opportunities in Europe.[43]

Mozambique imported 36,000 tonnes of soybean oil and 7,200 tonnes of soybean cake in 2009. These product import volumes tend to increase year on year mainly as a result of the domestic chicken meat industry, which requires soybean cake as the main feed, rapidly growing due to strong domestic demand.

The importation of high-priced soybean cake is driving up costs for domestic poultry, making competition with imported chickens difficult since the leading component of domestic poultry costs is feed (74%).[44] Local production of soybean cake will reduce costs for the poultry sector, resulting in the improved competitiveness of the domestic poultry industry. Therefore, the government is encouraging the growth of the domestic soybean industry to substitute for imported soybean cake.

In Mozambique people do not cook and eat soybean. Soybean is purchased by chicken farms, oil processors or exporters. These consumers purchase soybean directly from producers or through traders. Many of the chicken farms in Nampula engaged in contract farming buy soybean from producers. The farm gate price is as high as MZN 15-16/kg while the traders' margin is usually MZN 2/kg.[45]

(6) Peanut and Haricot Bean

Peanut and haricot bean are sold to both domestic and international markets with farm gate prices for these products able to be as high as MZN 22/kg and MZN 19/kg, respectively, providing a relatively high margin to producers.[46] Since the international market price for peanut went up in 2006, the amount of peanut exports has continued to rise.[47] There is a strong demand for haricot bean on the Maputo market as well as on the export market. Storage loss and damage from insect, fungus, and rodent infestations are the main problems.[48]

(7) Pulses (beans)[49]

Pulse production increased from 108,000 tonnes in 2004 to 210,000 tonnes in 2007. Mozambique began exporting pulses in 2002 with the export volume reaching approximately 9,000 tonnes in 2009 (the value was USD 6.5million).[50] Export Marketing exported 7,000 tonnes of mung bean and 23,000 tonnes of pigeon pea in 2011. The company uses intermediate buyers to collect bean from producers, and export the produce to India.

[43] Ibid.
[44] CEPAGRI, 2012.
[45] ProSAVANA-PD, Interim Report (1)
[46] Ibid.
[47] ProSAVANA-PD, Interim Report (1)
[48] ProSAVANA-PD, Interim Report (2)
[49] Pulses include haricot beans, cowpeas, mung beans, and pigeon peas.
[50] Ibid.

(8) Vegetables

The production of tomato, onion, cabbage, carrot and garlic is prevalent along the main roads in the Study Area with 45.0 thousand tonnes of vegetables produced on 5.6 thousand ha of land in the Study Area with an average yield of 8.06 tonnes/ha.[51] The demand for vegetables is high in densely populated areas, including Nampula City and the eastern part of Nampula Province. Malawi is another possible market for the producers in Niassa Province. Households and the food industries (catering services and restaurants) are major consumers of the vegetables. Demand for vegetables by catering services in the industrial area near the Nacala Port and in other urban centers is expected to grow in the near future. One example of the sources of this demand is the newly established fertilizer factory in Monapo, which plans to employ 2,000 workers, generating a large demand for food. Import substitution for vegetables also has large growth potential; tomatoes produced in Malawi are sold at markets near the western border, while South African potatoes are sold at markets in Nampula.[52]

(9) Fruits

As a tropical country, Mozambique has high production potential for a variety of fruits such as pineapple and mango. Mozambique's favorable agro-ecological conditions and potential for year-round production constitute a comparative advantage for certain fruits, creating huge investment opportunities.[53] The counter-seasonal demand in Middle-Eastern, Asian and European markets could be targeted for export.

According to USAID's estimation, pineapples of Mozambique have an export potential of USD 1 million annually.[54] There is an immediate opportunity for the exporting of pineapples to the South Africa since the domestic demand for pineapples in South Africa is growing 9% annually while the country's production is not catching up with the demand.[55] Middle-Eastern markets could also be targeted and markets for value-added pineapple products (e.g. sliced/cut, canned, etc.) could also be explored in Europe.

Mango is grown throughout Mozambique with slightly superior growing conditions in the central and northern regions of Mozambique, acknowledged to be superior to those of South Africa.[56] According to FAOSTAT, mango production in Mozambique peaked at 36,000 tonnes in 2000 and then followed a downward trend, remaining at 18,000 to 19,000 tonnes from 2007 to 2011. The export potential for mango is estimated at USD 2 million annually with the possibility of off-shore and regional markets being targeted. Although it is currently only exported to regional markets, more profitable opportunities could be explored in

[51] Ibid.
[52] ProSAVANA-PD., 2012 (2)
[53] CEPAGRI, 2012.
[54] USAID, 2010. AgriFUTURO Programme. <http://pdf.usaid.gov/pdf_docs/PDACR115.pdf>
[55] USAID/AgriFUTURO, 2012.
<http://agrifuturoproject.com/index.php?option=com_content&view=category&layout=blog&id=55&Itemid=573>
[56] TechnoServe, 2002. "Briefing Document The Mozambican Fruit Industry".

counter-seasonal markets of large mango consuming countries, such as India as well as Middle East and South Asian countries.[57]

The production of other fruits, such as citrus fruits and banana, is also growing. The domestic production of citrus fruits remained steady at around 30,000 tonnes from 2003 to 2007, afterwards experiencing steady growth to reach 49,000 tonnes in 2011.[58] Banana is a year-round, high-yield crop with the potential in Mozambique for providing additional export opportunities and improved profit margins. While the domestic production volume of banana remained constant at around 100,000 tonnes from 2003 to 2009, it reached 359,000 tonnes in 2011.[59] In the Nacala Corridor, South Africa funded an agribusiness company, Matanuska, in alliance with the USA funded Chiquita Banana in order to export banana to the European market through the Nacala Port.[60]

(10) Sugarcane

The domestic production of sugarcane has almost doubled over the last five years and is expected to keep growing in terms of both yield and area with the optimal weather conditions and abundant land suitable for sugarcane production benefiting the sector's expansion.[61] Recently, many donors are conducting training for local farmers. This has enhanced the quality of the sugarcane harvests, which has led to increased sugar yields per tonne crushed.

Mozambique exports sugar to basically only two markets; the EU under the new Economic Partnership Agreements (EPA) introduced in 2009 and the United States under the Tariff Rate Quota, with both agreements allowing access on preferential terms. Of the 107,989 tonnes of sugar exported in 2010, 82,989 tonnes was exported to EU markets and 24,989 tonnes to the United States. In 2011 sugar exports were expected to increase to 140,000 reflecting a 20% increase in production.

1.1.3 Livestock

While the number of livestock in Mozambique has grown significantly over the past decade, livestock sector productivity has been undermined by diseases, high mortality, and inadequate feed. About two-thirds of livestock production is concentrated in the northern and east-central

[57] USAID,2010. "AgriFUTURO Programme. Mozambique Agribusiness Competiveness, Work Plan May 1 , 2010 through September 30, 2010" <http://pdf.usaid.gov/pdf_docs/PDACR115.pdf>

[58] All Africa Global Media, 2012. "Fruit And Vegetable Production Statistics In Mozambique: Government Claims Food Security Improvement" <http://www.reportlinker-news.com/n053861609/Government-Claims-Food-Security-Improvement.html?utm_source=distribution>

[59] All Africa Global Media, 2012.

[60] ProSAVANA-PD, Interim Report (1)

[61] CEPAGRI, 2012.

provinces.[62] Major livestock products in Mozambique are chicken meat, eggs, beef, pork, and chevron.

(1) Chicken (Poultry)

The demand for chicken meat in the Study Area shows a very positive trend, and the local production is still insufficient to meet that demand. According to the TechnoServe's projection, the chicken meat's domestic demand will increase from 42,000 tonnes in 2010 to 137,000 tonnes in 2020. A considerable part of the chicken consumption in the Study Area is supplemented by imported chickens.

The chicken meat production in Mozambique remained steady at around 22,000 tonnes from 2006 to 2009. Chicken meat imports, on the other hand, grew at an average rate of 36% per year from 2000 to 2009.[63] The feed (soybean and maize) costs correspond to up to 75% of the total costs of chicken.[64] Since the domestic supply of chicken feed is not stable throughout the year, poultry farms have to rely on import for these material products. It is expected that the projected growth in the domestic soybean cake will increase the competitiveness of the poultry farming, reducing the production costs.

(2) Egg

The production volume of chicken eggs has maintained approximately 12,000 - 14,000 tonnes per year since 2000. In 2009, 1,397 tonnes of eggs were imported, equivalent to approximately 10% of the domestic production volume, with the import value of eggs more than doubling from 2008 to 2009.[65]

(3) Cattle Meat (Beef)

The demand for quality meat products is growing among the increasing middle-class households within Mozambique. The market has been constantly growing, especially in Maputo and tourist areas. Most of the beef consumed in Mozambique is domestically produced. The beef production volume has been increasing since 2001, with some minor fluctuations, reaching 18,900 tonnes in 2010. The import volume has remained below 1,000 tonnes since 2001 except for a temporary spike at 1,471 tonnes in 2006.[66]

[62] World Bank. 2006. "Mozambique Agricultural Development Strategy – Stimulating smallholder agricultural growth. Report No. 32416-MZ".
[63] FAO STAT, 2012.
[64] CEPAGRI, 2012.
[65] FAO STAT, 2012
[66] Ibid.

(4) Pig and Goat Meat

The pig and goat meat production is also considered to have growth potential for both local consumption and export opportunities.[67] The market for meat created by mining operations in the northern Mozambique is currently filled by imports.

1.2 Current Situation of Land Use and Land Issues

Mozambique has roughly 36 million hectares of arable land. The country has a wide diversity of soil types and climatic conditions, which are suitable for a large variety of crops. Despite its tremendous potential for agricultural development, only 12.5% (4.5 million hectares) of total arable land is being cultivated.[68] With major river systems remaining largely unexploited (e.g. the Zambezi, Save, and Limpopo systems), the country has considerable untapped opportunities for irrigation with only 14% of the potential 3.3 million hectares irrigated.[69]

While agriculture in Mozambique is currently dominated by 3.2 million small-scale farms with an average farm size of 1.4 hectares, the average farm household could theoretically have a farm size of 12 or 13 hectares given the current rural population density of 16 persons per square kilometer.

Key Figures for Land Use

- **Total land area:** 801,590 square kilometers
- **Arable land:** 36 million hectares (46% of total land area)
- **Arable land in use:** 4.5 million hectares (12.5% of total arable land)
- **Land with irrigation potential:** 3.3 million hectares
- **Area of land under irrigation:** 460,000 hectares
- **Average size of small scale farm:** 1.1 hectares

Source: World Bank (2006), FAO (2009), IISD (2009)

All land in Mozambique is state-owned. The major provisions of the Land Law of 1997 are outlined in the box of the next page.

The following are major issues that have been observed with regard to the Land Law:[70]

- The law has not resolved recurring conflicts between smallholder farmers and commercial farmers;
- It has not encouraged partnerships between smallholder farmers and commercial farmers;

[67] CEPAGRI, 2012
[68] Gilbert Biacuana, "Agriculture: Future Scenarios for Southern Africa – Food Production in Mozambique and Rising Global Food Prices" International Institute for Sustainable Development, 2009
[69] World Bank, "Mozambique Agricultural Development Strategy Stimulating Smallholder Agricultural Growth"February 23, 2006 Report No. 32416-MZ, p.3
[70] Biacuana, IISD (2009), p.8

- The procedure for securing a land lease is cumbersome and costly, and can delay investments;
- The process by which leases are granted is not transparent and is prone to corruption; and
- Land still does not serve as collateral for loans.

Basic provisions of the Land Law of 1997

All land remains the property of the state, but land leases can be granted for up to 50 years. These leases are renewable, inheritable and transferable; subject to administrative authorization. One condition for the award of a land lease is the presentation of a development plan. If the farmer fails to comply with the stipulations of the approved plan, the lease can be cancelled. Investments in land, including infrastructure, can be bought and sold; however, administrative authorization is still required for the transaction to be effective. Traditional land use rights are recognized and formalized in a system of community land management, implemented through the co-titling of community lands. Existing users of the land are protected, provided they can demonstrate "good faith" occupation of the land. This demonstration need not be documentarily evidenced, and verbal evidence from members of the community can be recognized as valid. There is a right to local participation and consultation in the management of natural resources, and in procedures leading to the award of land leases, in order to both protect traditional community rights and take into account the future needs of the communities.

Source: World Bank (2006).

According to the Land Law Regulation, investors can acquire DUAT (the right to use and profit from the land), which is issued by the National Land and Forests Directorate (DNTF) and the Provincial Services of Geography and Registry (SPGCs). Article 12 of the Land Law states that a "DUAT is acquired by: a) occupation by individuals and by local communities, according to customary norms and practices that do not contradict the Constitution; b) occupation by nationals that have used the land for at least 10 years in good faith; or c) an authorization of requests presented by individuals or groups as established in the current Law." Community members who have fulfilled (a) or (b) are not required to acquire DUAT in securing a land lease.[71]

The process for acquiring DUAT is time-consuming and complex, requiring a series of community consultations, a topographical demarcation, and relevant documents from different government offices. The process for acquiring a DUAT is shown in Figure 1-1.

[71] LanDac, "Mozambique: Food Security and Land Governance Factsheet" 2012 ＜http://www.landgovernance.org/system/files/Mozambique%20Factsheet%20-%202012.pdf＞

Figure 1-1 DUAT Application Process Flow

Source: ProSAVANA-PD, Interim Report (1)

When the process for acquiring a DUAT is conducted without due diligence, even the most well-intended investment projects can create bitter resentment towards the investing companies from local communities. The following are examples of situations that have led to conflicts: [72]

- Community consultation without the involvement of all affected groups: Most investors respect Article 13 of the Land Law No. 19/97, which states that the "process of DUAT titling includes feedback from local administrative authorities, preceded by consultations with the respective communities for the purpose of confirming that the area is free and has no occupants." However, women's voices are rarely heard in the process of public consultation due to a lack of female representatives among community leaders even though their lives are the most impacted by the project. In rural areas, women play a fundamental role in subsistence agriculture, and collecting water and firewood is a social role assigned to women. The lack of women's voices in public consultation can undermine the women's needs such as easy access to water. There are cases reported in which communities have to travel great distances in search of water for consumption after the arrival of investment projects. It should be noted that, according to one study conducted by Justiça Ambiental and União Nacional de Camponeses on land grabbing, in the Northern zone (i.e. Nampula, Cabo Delgado, and Niassa Provinces) only 43% of the survey respondents reported that the chief defends the interests of the community in the DUAT tilting process.

- Unfulfilled promises made during community consultation: Many conflicts that exist between communities are a result of unfulfilled promises made during the process of public consultation, particularly promises pertaining to areas designated for resettlement and the implementation of social projects like constructing schools, clinics, and boreholes.

- Resettlement in improper locations (i.e. infertile land, long distance to water sources, and long distance between farms and homesteads): There are cases in which communities were resettled in areas that were not as fertile as where communities used to cultivate and are far from water sources, thus these resettlements have resulted in productivity losses and an increase in workloads from water collection.

In addition to the above, ill-business practices, such as not respecting of concession boundary, failure of the company to pay workers, and unlawful dismissal of workers can also lead to conflicts between companies and local communities. According to the aforementioned study on land grabbing, additional factors that could lead to conflicts are: the use and abuse of power by the local authorities, communities' poor knowledge of the law and poor understanding of the importance of their active involvement in the consultation process, a lack of transparency (e.g. community members do not have access to the minutes of the public consultation meetings),

[72] Nilza Matavel, Sílvia Dolores e Vanessa Cabanelas, "Lords of the Land - Preliminary Analysis of the Phenomenon of Land Grabbing in Mozambique" Justiça Ambiental & UNAC, 2011

and insufficient information provided on land demarcation. The following table provides the number of land conflicts reported, mitigated and resolved by province.

Table 1-1 Number of Land Conflicts for Reported, Mitigated and Resolved Cases by Province

	Reported Cases			Mitigated Cases			Resolved Cases		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Nampula	1	9	3	1	4	2	N/A	5	1
Niassa	3	9	3	3	0	3	M/A	9	0
Zambézia	19	19	14	16	17	13	N/A	2	1

Note: the above table includes the family disputes on inherited land.
Source: Relatório de Balanço Anual de Terras, Florestas e Fauna Bravia 2009, 2010 and 2011, DNTF

1.3 Agricultural Extension Services and Research Institutes

1.3.1 Historical Background

Mozambique's agricultural extension services for most crops are new, and its system for service provision is pluralistic, involving a diversity of service providers (i.e. public sector, NGOs, and rivate sector). Before the country's independence in 1975, agricultural extension activities in Mozambique had been focused mainly on commercial and export crops, such as cotton, tobacco, and sugarcane. The civil strife that occurred following independence prevented the government from establishing comprehensive public extension services until 1987. Against this backdrop, the government has commissioned some extension services to private companies engaged in crop production and NGOs to increase outreach. According to the Mid-term Review Report of the National Agricultural Extension Program (PRONEA), there were 2,238 extension workers in 2010 of which 770 were government extension workers, 817 were from NGOs and 651 from the private sector.[73] In 2009 it was reported that 378,043 households (38.4% of the total served), 203,683 households (23.4%), and 375,351 households (38.1%) are served by the government, NGOs/donors, and the private companies respectively.[74] The interplay of these various actors in extension services has evolved over time to a pluralistic extension system in Mozambique.

The Extension Master Plan (2007-2016), developed by the National Directorate of Agricultural Extension (DNEA), MINAG in 2007 and currently implemented within PRONEA framework, aims to improve efficiency in extension service delivery. The master plan has two main pillars for organizing agricultural extension services in Mozambique: 1) the National Extension System (SISNE), which is a functional partnership between public and private extension services; and 2) the Unified Extension Services (SUE), which is an effective and efficient cooperation mechanism between various directorates of MINAG in which famers can obtain all agricultural

[73] MINAG, "Extension Master Plan: 2007-2016" 2007
[74] Alage, A and Nhancala I T "An Overview of Public Extension Services in Mozambique" (2010) compiled in "Toward Improving Agricultural Extension Service Delivery in the SADC Region"

services related to crop production, livestock and natural resource management from single extension officers.

1.3.2 Main Actors in Extension Services

(1) Public Sector

PRONEA promotes de-concentration, multiple service provision, and private-public partnership in providing extension services. The Extension Master Plan envisages the public agencies that provide extension services and their different roles in respective levels as follows:

Table 1-2 Public Agencies for Extension Services

Level	Agency	Expected Main Roles
Central	National Directorate of Agricultural Extension (DNEA), MINAG	The central level is responsible for formulating and regularly updating national policy issues. DNEA also conducts monitoring and evaluation for the quality control of extension service delivery.
Province	Provincial Services of Rural Extension, DPA	The provincial level is responsible for coordinating and consolidating activities that cover more than one district, such as contracts and training and research linkages.
District	District Service for Economic Activities (SDAE)	The district level is responsible for implementing extension services. Extension activities by NGOs, farmers' organizations, and private companies are monitored and coordinated at the district level by SDAE officials.

Source: Extension Master Plan (2007-2016), National Directorate of Agricultural Extension (p.34)

(2) NGOs

The number of NGOs active in extension activities has increased from 42 in 1999 to 83 in 2009.[75] There are about 40 national NGOs, deploying 300 extension staff, and about 30 international NGOs, deploying 430 extension staff.[76] As contractors or collaborators in government or donor interventions, they provide agricultural extension services as well as assistance for the formation of farmers' organizations. While their activities are mainly funded by donors, charitable organizations, or own resources, there are quite a few cases where they charge farmers for some extension services, such as cashew spraying and poultry vaccination (see Section 1-4 "Agricultural Projects Supported by Donors").

(3) Private Firms

Private agricultural companies, notably those engaged in tobacco, cotton, sugar, cashew, and soybean production and processing, are also key actors in extension services and are probably the most important providers of advisory and credit services. They often provide contracted producers with agricultural inputs and tractor services on credit as well as extension services; in some cases, they even provide general technical advice to other farmers in the area. Some private companies have their own extension personnel while others benefit from the extension

[75] Ibid.
[76] PRONEA (2007-2016)

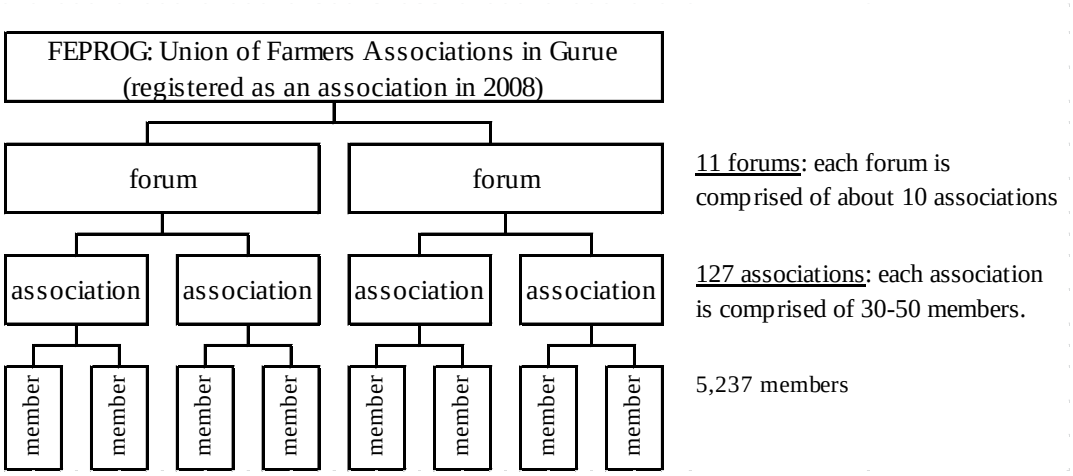
services of NGOs/donors and/or government. Some NGOs provide equipment (e.g. tractors and motorcycles for extension workers) to private companies' out-grower programs, and/or even fully or partially cover operation costs. There are also some seed companies that conduct demonstrations in improved certified seed and the use of fertilizer on demonstration plots.

(4) Farmers' Organizations

A large number of farmers' organizations have been formed over the last two decades with almost all having, at least during part of their history, connections to the funding entities of either NGOs or donors. The majority of them are farmers' associations, which are principally non-profit organizations; they are not legally able to sign commercial contracts. Among the farmers' organizations, there are a small number of cooperatives. In 2009, a new Cooperative Law (Law 23/2009) was adopted to promote and develop modern cooperatives in Mozambique as a sustainable form of wealth generation.

Farmers' organizations have been formed to fulfill one or more functions in the following areas: 1) to conduct collective purchasing of inputs (i.e. seed, fertilizer, and chemicals) or receive them from MINAG, NGOs or the private sector and distribute them to members; 2) to receive agricultural extension services; 3) to conduct collective bargaining (i.e. to represent association members and negotiate with buyers to pay fair prices for members' produce; 4) to operate and maintain communal property (e.g. irrigation, storage and processing facilities, and tractors); 5) to access financial resources (microcredit); and 6) to facilitate community development through the implementation of social programs (i.e. awareness-raising of HIV/AIDS, empowerment of women, and literacy education).[77]

The organizational structure of a farmers' organization is in many cases comprised of several levels as show in the graph below.



Source: Study Team (based on the interview with FERPROG in February 2013)

Figure 1-2 Example of an Association Organizational Structure (FEPROG's Case)

[77] ProSAVANA-PD, Interim Report (1)

1.3.3 Main Types of Extension Services

The public sector and NGOs in most cases provide extension services through farmers' organizations. In 2009 85% of public extension services were provided to farmers' organized in groups or associations, or through Farmer Field Schools.[78]

Table 1-3 Types of Extension Services Provided by Different Actors

Item	Government	NGOs	Private Sector (incl. Seed Suppliers)	Farmers' Organizations
Input distribution	XX (seed)	XX	XX (contract farming)	XX
Technology transfer	X (demo-plots at each SDAE and IIAM)	XX	XX (demonstration on improved seed and fertilizer)	X
Collective bargaining/ marketing	-	X	XX (contract farming)	X
Institutional development	X	XX	-	XX (support given by a union /forum to associations)
Access to loans	X (FDD)	X	X (contract farming)	X (as borrowers)
Business planning	X	X	-	-
Legal advice	X (land issues)	X (land issues)	-	-

* The "X" indicates the degree of specific services provided (X: to a limited extent, XX: to a large extent).
Source: Study Team (based on interviews and literature review)

1.3.4 Agricultural Research

The Agricultural Research Institute of Mozambique (IIAM) is the country's main agricultural research and development agency. It aims to generate knowledge and technological solutions for the sustainable development of agribusiness as well as for the country's food and nutritional security. In common with DNEA, IIAM is mandated to generate, package, and disseminate information on improved agricultural technologies, services, and products to enhance farmers' productivity and access to markets.

In addition to IIAM, two autonomous public institutions are conducting research and development activities: IAM (Mozambican Cotton Institute) and INCAJU (Cashew Promotion Institute). IAM and INCAJU support the production of cotton and cashew nut, respectively, through research and monitoring of production as well as the implementation of relevant policies.

1.3.5 Issues with Agricultural Extension Services and Research

Major issues with extension services in Mozambique are the low quality of services provided, the limited number of extension workers, and uneven geographical coverage of extension

[78] Alage, A and Nhancale, I.T

workers placed. Despite the combined actions of Government extension services and those of other partners, only 8.3% of farmers had access to extension services in 2008, which is below the average of around 13% from 2003 to 2007.[79] According to a World Bank's study, there are on average 1.3 extension workers per 10,000 rural inhabitants in the country, varying from 0.8 in Zambézia to 2.7 in Niassa. Only 6% of rural population lives in a village with an extension office. 24% of rural population has an extension office within 50 km of their farm, which means that three-fourths of households have to travel more than 50 km to reach an office.[80]

Table 1-4 Distribution of Extension Workers in the Nacala Corridor (2004)

Province	Population (1,000)	Extension Workers			Extension workers per 10,000 people
		Government	NGO	Private	
Nampula	3,563	91	291	0	1.2
Niassa	967	58	135	68	2.7
Zambézia	3,645	55	213	19	0.8

Source: "Impact of Extension Services in Rural Mozambique" World Bank 2005

A contributing factor to the insufficient number of extension workers in the field is a large gap in salaries and other benefits between public extension workers hired by the government and those contracted by international NGOs. International NGOs offer their own extension workers salaries and benefits that are double or triple those offered to Government workers, indirectly demotivating public extension workers. The loss of public extension workers to NGOs also affects the morale, turnover, and performance of those extension workers remaining within the Government.[81]

Other issues with agricultural extension services in Mozambique are the lack of cost-benefit studies of various technologies for small-scale farmers, and poor linkages between extension and research services. While a strong R&D body with an efficient and effective information delivery system is crucial for a country's agricultural development, IIAM has many organizational challenges, such as a shortage of qualified/experienced management and scientific staff, and inadequate quality and quantity of research equipment and facilities.

1.4 Agricultural Projects Supported by Donors

A number of international donor agencies and NGOs have been supporting agricultural development in the Study Area. Their areas of intervention include extension services and technological renovations, distribution of inputs, improvement in access to markets, financing and leasing support, facilitation of farmers' organizations, and other similar activities. Major agricultural development programs / projects relevant to this Study are summarized in this section, while support in agricultural financing will be presented in Chapter 2 "Banking Sector and Agricultural Credit in Mozambique".

[79] Strategic Plan for Agricultural Development (PEDSA) 2010-2019 (2010)
[80] "Impact of Extension Services in Rural Mozambique" World Bank 2005
[81] Carl K. Eicher "Building African Models of Agricultural Extension: A Case Study of Mozambique" 2002

1.4.1 Establishment and Strengthening of Value Chains

(1) Innovation for Agribusiness, Private Sector-Led Agriculture Growth Project by SDC

The Swiss Agency for Development and Cooperation (SDC) finances a program called "Innovation for Agribusiness, Private Sector-Led Agriculture Growth Project" (INOVAGRO) in northern Mozambique. INOVAGRO is an eight-year program starting in 2011, which is aimed at developing small-scale farmers through the development of the private sector. Based on the principle of "making markets work for the poor" (M4P), this project facilitates the creation of linkages between farmers, agribusinesses and banks in two product value chains: soybean and pigeon pea.

INOVAGRO is working in partnership with one of the Mozambique's largest integrated poultry operations, GETT Limitada. INOVAGRO has facilitated the structuring of relationships between GETT and emerging small-scale farmers in the Gurué District of the Zambézia Province, including the development of an extension services program managed by GETT. INOVAGRO also cooperates with Export Marketing in the implementation of contract farming for pigeon pea in Gurué, and with Moz Seed and Lozane Farms for seed production and distribution.

(2) AgriFUTURO by USAID

The Mozambique Trade and Competitiveness Program (AgriFUTURO) is a USAID-funded project aimed at strengthening the capacity of selected private agribusiness companies/farms in the Beira and Nacala Corridors in the skills of marketing and business management by providing advisory support and a series of training activities. This project began in 2009 for a period of five years (USD 20 million) with American NGOs (Cooperative League of the USA [CLUSA], TechnoServe, and Abt Associates) being the implementing organizations.[82] The project focuses on developing an enabling environment for agribusinesses while strengthening business development services, linkages between agribusiness enterprises and financial institutions, and public and private partnerships. The project supports four product value chains; oilseed (sesame, peanut and soybean), cashew nut, fruits (banana, mango and pineapple), and pulses (bean, cowpea, pigeon pea).[83] The project also provides a matching grant of up to USD 75,000 to facilitate agribusiness investors' access to commercial loans. AgriFUTURO also initiated a grant program in January 2010, which includes three types of grant funding mechanisms:

- Agribusiness Service Clusters (ASCs) Establishment Grants: ASCs are geographic concentrations (the Nacala and Beira Corridors) of interconnected and specialized suppliers of products and services and associated institutions in a particular product

[82] USAID, 2009. <http://transition.usaid.gov/mz/news_2009-10-08_agrifuturo.htm>
[83] USAID, 2013. <http://www.usaid.gov/>

value chain. This grant aims to fund a portion of an ASC's start-up costs, such as registration and basic equipment purchases. The envisaged amount of funding is approximately USD 75,000 per grant. Two ASC grants were provided in 2010;

- Seed Capital for Investment Grants (with cost sharing): This grant is made available to applicants who demonstrate a viable investment opportunity and have been able to leverage matched grant funding, either from other donors, investors or private credit providers or from in-kind contributions. Applicants have to identify match funding (at least 50% of the total grant funding) by the time of submitting the applications; and
- Discretionary Grants: This grant enables a rapid response to a small-scale initiative that serves the broader objectives of the project. These grants will not exceed USD 5,000.

The project also provides technical assistance and training to grant recipients in the areas of organizational, managerial and financial management. In Nampula Province, AgriFUTURO is planning to promote a contract farming model with interested commercial agribusiness partners through technical support in extension services and the provision of machinery.

(3) FINAGRO by USAID[84]

FINAGRO is an investment support program for agribusinesses operating in the Mozambican private sector, financed by USAID and the Government of Mozambique, and implemented by TechnoServe and the Agência de Desenvolvimento do Vale do Zambeze. FINAGRO's specific program objective is to increase the competitiveness of the Mozambican private sector in the value chains of selected cash crops (e.g. tropical fruits [mangoes, bananas and pineapples], oilseeds [peanuts, soybeans and sesame], pulses [common beans, cowpeas and pigeon peas] and cashew nuts) and food crops (e.g. maize, rice, potatoes and cassava).

With initial funds of MZN 170 million, FINAGRO grants are expected to leverage additional private capital from investors and financial institutions. The private sector will be able to apply for grants of up to MZN 2.6 million per beneficiary, while requiring a minimum 30% match of the value of the grant from the applicant. The program will focus on supporting Mozambican small and medium size enterprises and farmers' associations/cooperatives operating in farming, agro-processing, marketing and exporting activities.

(4) GATEs program supported by CLUSA

The GATEs program (2010-2014), a Mozambican Government project, aims to add value for soybean in Gurué and Angonia. Under this program the District Development Fund (FDD) channels funds to farmers through CLUSA so that farmers can conduct collective purchasing of inputs (seed and fertilizer) from suppliers while CLUSA provides farmers with technical

[84] Brochure of FINAGRO <http://www.finagro.org.mz>

training in the effective utilization of these inputs. At the end of the season, CLUSA receives repayments from farmers on behalf of the government. GATEs contributed to an increase in the total soybean production in these areas from 4,000 tonnes in 2010 to 30,000 tonnes in 2012.

(5) Food for Progress Poultry Program supported by TechnoServe

In the framework of the Food for Progress Poultry Program (from 2005 to 2012) funded by the US Department of Agriculture, TechnoServe supported local producers to form a national poultry association; A.M.A (Mozambique National Poultry Association). TechnoServe provided training to poultry farmers to improve the industry's efficiently. TechnoServe's advisors worked with poultry companies like Novos Horizontes[85] to help them upgrade their processing machinery, expand their production capacity, and improve the quality of their chickens. As part of this effort, TechnoServe helped connect companies to smallholder farmers through a credit system in which the farmers received chicks, feed and vaccinations up front.[86] The costs are recovered when the farmers sell the full-grown chickens to the processors.

(6) Strengthening of Sesame and Honey Value Chains by SNV

The Netherlands Development Organization (SNV) has supported the development of the value chain of sesame, soybean, pigeon pea, and honey.[87] SNV promotes sesame exports by facilitating Export Marketing, an agro-industry processing company exporting sesame, to engage in contract farming with farmers (i.e. providing agronomic training and business training to farmers, and facilitating mechanized land preparation and input provision). The number of beneficiaries as of 2011 was 180 with their average annual income having increased from 42,000 MZN in 2010 to 192,000 MZN in 2011.[88]

SNV successfully brokered a USD 380,000 investment in 2012 for the Mozambique Honey Company[89] in Chomoio, Monica Province to expand its operations and processing capacity. Through an out-grower scheme at least 5,000 rural families are expected to increase their income and improve their living standards through the sale of USD 1 million worth of honey.[90]

[85] Established in 2004 by a Zimbabwean entrepreneur, Novos Horizontes LDA is a poultry company located in Nampula District. The company produces chickens, chicks, feeds, and eggs, and purchases chickens from contract poultry farmers. Source: "Survey on Agricultural Companies along the Nacala Corridor, Mozambique" JICA Mozambique Office, 2012

[86] A credit line of MZN 20 million with major commercial banks, through which 7 integrated companies and 44 poultry producers were benefitted with low interest rate (10%/year) loans, according to a presentation by Technoserve "Emergence of the Poultry Industry and the Decline of the Poultry Imports in Mozambique"

[87] Netherlands Development Organization (SNV), 2013. <http://www.snvworld.org/en/countries/mozambique/our-work/agriculture>

[88] SNV, 2012. "Equity and Growth for Small Folders". Report for Agriculture in Africa.

[89] Mozambique Honey Company specializes in production, processing and commercialization of honey and beeswax. 45% of its share is owned by 5,000 small scale beekeepers. Source: Mozambique Honey Company's Website < http://mozambiquehoneycompany.com/>

[90] SNV, 2012. "Equity and Growth for Small Folders". Report for Agriculture in Africa.

(7) Strengthening of Seed Value Chain by SNV and TechnoServe

SNV and TechnoServe currently cooperate to conduct an "Improving the Seed System" program (2011-2013). This USD 5 million project funded by the Netherlands specializes in high-potential crops, beginning with soybean and groundnut, to improve the incomes of small-scale farmers who are underserved by the formal seed system. This project provides seed to small-scale farmers and trains them on how to multiply seed effectively. This project also encourages farmers to form seed grower associations so that the farmers can effectively sell the produced seed and provide seed to other farmers.[91]

(8) Cassava Plus by IFDC

The International Fertilizer Development Center (IFDC)[92] is implementing a program called "Cassava Plus" from 2011 to 2013, a public-private partnership (PPP) program between IFDC and the Dutch Agricultural Development & Trading Company (DADTCO). The program aims to commercialize the cassava production of 1,500 households (6,000 people) in four districts of Nampula Province (Ribáuè, Murrupula, Mecuburi, Meconta) by linking them to a cassava processing plant. IFDC provides technical training to farmers in efficient planting and harvesting of cassava while offering an outlet for cassava sales with mobile processing units.[93]

(9) PROMAR (Rural Market Promotion Programme) supported by IFAD, AGRA and PRO-PARA

PROMAR (2009-2016) is designed to improve the livelihoods of smallholder farmers in 15 districts in 4 northern provinces (Nampula, Niassa, Zambézia, and Cabo Delgado), especially in Malema, Ribáuè, Cuamba, Mandimba, Gurué, Alto Molocue Districts. The program is aimed to: 1) improve small-scale farmers' access to and participation in agricultural markets and value chains; 2) develop more efficient market intermediaries and more effective partnerships to stimulate increased agricultural production and added value; and 3) create a more conducive environment for agricultural market operations. The program's target group includes small-scale semi-subsistence farmers and other poor farmers, most of whom live below the poverty line. Another target group includes small and medium-sized rural traders who play a crucial role in linking poor farmers to markets. The total cost will be USD 40.6 million, covered by an International Fund for Agricultural Development (IFAD)'s loan (USD 31.1 million), and co-financed by Alliance for a Green Revolution in Africa (AGRA) (USD 3.5 million) and PRO-PAPA (EC Food Facility, USD 1.4 million); 20,000 households will benefit from this program.[94]

[91] TechnoServe, 2013. <http://www.technoserve.org/our-work/where-we-work/country/mozambique#_overview>
[92] IFDC is a public international organization in over 100 developing countries through the development and transfer of effective and environmentally sound crop nutrient technology and agribusiness expertise. IFDC focuses on increasing and sustaining food security and agricultural productivity.
[93] IFDC (International Fertilizer Development Center), 2013.<http://www.ifdc.org/Nations/Mozambique>
[94] IFAD, 2012. Rural Market Promotion Programme <http://operations.ifad.org/web/ifad/operations/country/project/tags/mozambique/1423/project_overview>

(10) Technical Assistance to Associations and Agricultural-related SMEs by ADIPSA

The Development Support Initiative in the Private Agricultural Sector (Apoio ao Desenvolvimento de Iniciativas privadas no Sector Agrário: ADIPSA)[95] is one of the components of the DANIDA's Agriculture Sector Support Program (ASSP). The program develops and implements intervention packages that aim at helping business oriented farmers' organizations and Agro-SMEs in Nampula Province overcome identified value chain bottlenecks. These intervention packages include the facilitation of access to quality inputs (improved seed, fertilizer, lime and pesticide, and access to finance), soil preparation facilities (animal and mechanized traction, and implements), best farming practices, access to irrigation facilities, access to transport, processing and marketing (storage, packaging and branding, links to markets and marketing).[96]

ADIPSA created a Guarantee Fund, in partnership with the leading food agricultural bank in Mozambique, Banco Terra, which amounts to USD 1 million in order to enable the providing of credit to associations and SMEs with limited collateral. ADIPSA also provides grant funds for the purchase of inputs and marketing, which was conducted in partnership with the Aga Khan Foundation, IRAM/CCOM, and GAPI, having so far totaled more than MZN 20.3 million. ADIPSA also strengthens financial institution capacity through training, the establishment of offices, and support for the expansion of financial services to rural areas. Through the development of producers' associations, ADIPSA has supported more than 61,200 small-scale farmers in Nampula, Cabo Delgado, Manica, Tete and Maputo Provinces, and promoted the production and marketing of soybean, sesame, peanut, rice, potato and vegetables.[97]

(11) Integrated Growth Poles Project by the World Bank[98]

The World Bank approved the "Integrated Growth Poles Project" in April 2013 (project period: six years), which is aimed at improving the performance of enterprises and smallholders in the Zambezi Valley and Nacala Corridor, focusing on identified high growth potential zones (growth poles). The project has a USD 17 million component for Innovation and Demonstration Catalytic Fund (IDCF) that supports linkages between medium and large firms and smallholders / MSMEs (Micro-, Small- and Medium-sized Enterprises) through targeted investments in public goods and services (e.g. out-grower schemes, packing houses, grading centers, processing, warehouses and cold storage facilities). Funds for IDCF investment managed by public entities are provided on a 100 percent grant basis with the funds ranging between a minimum of 10 percent to a maximum of 90 percent based on the amount of public good derived from the total investment.

[95] Apoio ao Desenvolvimento de Iniciativas privadas no Sector Agrario (Development Support Initiatives in the Private Agricultural Sector). <http://www.financingmozambique.com/?__target__=institution&id=50>
[96] Financing Mozambique,2012."ADIPSA". <http://www.financingmozambique.com/?__target__=institution&id=50>
[97] ADIPSA, 2013. <http://www.adipsa.org.mz/>
[98] World Bank, Project Appraisal Document for an Integrated Growth Poles Project, April 2013

1.4.2 Technical Support /Capacity Building

(1) Farmer Income Support Project by MCC

The Millennium Challenge Corporation (MCC, a US Foreign Aid Agency) supports coconut producers in improving the productivity of coconut farming in Zambézia and Nampula Provinces.[99] This program aims to control the spread of Coconut Lethal Yellowing Disease (CLYD) and encourage diversification into other cash-crop production, and it intends to eliminate biological and technical barriers that hinder the growth of farms. This program's activities include:

- Replacing coconut trees;
- Assisting farmers in adopting new cropping systems and developing alternative sources of cash income during the time required for new coconut trees to reach a productive age; and
- Providing farmers with technical support to introduce better practices that increase crop yields.

(2) Orica Mahi: Rural income increase and diversification through micro-irrigation in northern Mozambique by SDC

SDC is implementing a micro-irrigation program (2011-2017) in all districts of Nampula Province. This program's main objective is to improve more than 4,000 rural farm households' ability to capitalize on the growing demand for agricultural produce in Nampula Province by introducing micro-irrigation technology. It is expected that the adopters of this irrigation technology can increase their income by USD 300 per year on average.[100]

(3) Food Security Program through Nutrition and Agriculture by CLUSA (2012-2013)

CLUSA currently conducts a Food Security Program that links small-scale farmers with markets and processing plants, facilitates out-grower contracts between processors and farmers, and helps farmers organize themselves into clubs, associations, or cooperatives.[101] Starting from November 2012, USD 14 million funded by the Norwegian Ministry of Foreign Affairs will be used in this program to provide support to 54,000 farmers and 50 emerging commercial farmers in proven conservation agriculture techniques and nutrition, benefitting more than 140,000 individuals in Zambézia, Tete, and Manica Provinces.[102] The program is designed to

[99] ODA moz Report, 2013. <http://www.odamoz.org.mz/reports/custom/5017.html>
[100] ODA moz Report, 2013.
[101] Information based on the interview to officer of CLUSA in Nampula.
[102] CLUSA, 2013. <http://www.ncba.coop/ncba-clusa/home>

boost agriculture production by 20% with market-driven agriculture, community-managed nutrition, and disaster preparedness.[103]

(4) Support for Emerging Farmers Program by CLUSA

In the Emerging Farmers Program (2009-2014), CLUSA supports selected small farmers in Nampula, Zambézia and Tete Provinces by providing advice on book-keeping, production technology, yield estimates, crop input supply planning, and labor planning. In 2009 the 20 selected producers in Nampula Province cultivated a total of 400 ha of additional land, received a total of MZN 1,576,940 in loans and sold MZN 2,805,516 worth of produce. CLUSA expanded this model to 15 emerging farmers in Gurué (Zambézia Province) in 2008/09, and to over 90 producers in Nampula, Zambézia and Tete Provinces in 2010. By the end of the five-year project, it intends to support 400 emerging farmers with a total of 11,840 collaborating farmers (those mentored by the emerging farmers).

(5) Support to ALIMI by CLUSA

ALIMI is a Limited Liability Cooperative, established in 2010 in Cuamba, Niassa Province to serve the farmers' association structure of six southern Niassa Districts (Cuamba, Mecanhelas, Mandimba, Maua, Nipepe, and Metarica), encompassing approximately 13,000 farmers organized into 50zonal unions[104] and 417 associations.[105] CLUSA provides technical support to ALIMI to strengthen its business systems, building staff/member/board capacities, securing adequate capitalization and access to available financing, building marketing capacities, and establishing trade linkages. The value of this technical assistance was approximately USD 394,000 for 2010-11.

(6) Cash crop promotion for associations by OIKOS

OIKOS, an International NGO, supported the production and marketing of sesame and pigeon pea among small-scale producers in Mandimba, Niassa Province (2008-2012). The goal of this program was to increase small-scale famers' income through the adoption of production methods that respond to the local and regional market demand for pigeon pea. The demand for pigeon pea had been growing in northern Mozambique and on the international market. This program intended to turn peasant associations into small-scale, but reliable, suppliers of agricultural produce. To this end, OIKOS facilitated a sustainable marketing and transaction process for sesame and pigeon pea between small-scale farmers and buyers, which benefitted

[103] Save the Children Federation Inc., 2009. "United States Agency for International Development Bureau of Democracy, Conflict and Humanitarian Assistance Office of Food for Peace". Fiscal Year 2009 Annual Results Report

[104] An umbrella organization comprising of farmers' associations is called either a forum or a union. A forum and union have same functions. In the case of AlIMI, umbrella organizations of farmers' associations are called zonal unions.

[105] ALIMI, 2013. <http://www.tradekey.com/company/ALIMI-Cooperativa-de-Responsabilidade-Limitada-5639966.html>

6,000 people.[106] The program was undertaken in partnership with CLUSA and the Mandimba District Peasant Union, and co-financed by the European Commission and the Portuguese Institute for Development Support IPAD.[107]

(7) Extension program by Kulima

In Nampula Province, Kulima provides services such as agriculture extension, including the support and development of production techniques, product management, irrigation, micro-finance and commercialization of local produce,[108] through funds provided by various donors including USAID, UNDP, CIDA, and EU.[109] In the micro-finance component, Kulima had about 1,000 clients for loan services and 1,200 clients for saving services as of 2012. For this micro-finance support, Kulima's portfolio value of active loans is MZN 9 million while that of savings is MZN 2.5 million.[110]

(8) Mechanization of Agriculture through the Italian Cooperation

The Italian Cooperation has been supporting the mechanization of agriculture in Mozambique since 1988. In January 2013, the Italian Cooperation donated EUR 7 million to Mozambique to buy 110 tractors and implements, including ploughs, trailers, pumps and water tanks for irrigation, and cashew processing equipment.[111] Purchased equipment will be leased to private companies and farms in all of the provinces in the country at subsidized prices, so that these companies, in turn, can provide agricultural services to small-scale farmers at affordable prices.

(9) Sustainable Irrigation Development Project by the World Bank (PROIRRI)[112]

The Sustainable Irrigation Development Project (PROIRRI, 2011-2017) aims to increase agricultural production and raise farm productivity in irrigation schemes in the Provinces of Sofala, Manica and Zambézia. The primary target groups of PROIRRI are smallholder farmers (groups and associations) and individual emerging farmers. PROIRRI provides support in: (a) efficient use of water for agriculture and minimization of producer dependency on rainfall patterns; (b) improvement and diversification of their farming system; and (c) increase in their yields and production of a surplus that can be marketed to generate income (e.g. rice); (d) adoption of market-led production planning decisions; and (e) sale of their produce in a secured market outlet (e.g. out-grower scheme). PROIRRI will enable targeted producers' groups to

[106] OIKOS, 2013. <http://www.oikos.pt/en/what-we-do/vida-sustentavel/projectos-de-vida-sustentavel/item/259-3b24>

[107] The Portuguese Institute for Development Support (Portuguese: Instituto Português de Apoio ao Desenvolvimento, IPAD) is a development aid agency under the Portuguese Ministry for Foreign Affairs. Since January 2003, the institute is responsible for the coordination, supervision and direction of the Portuguese official development assistance to developing countries.

[108] KULIMA, 2013. <http://www.kulima.org/OLD/Kulima/home_english.html>

[109] KULIMA, 2013. <http://www.kulima.org/OLD/Kulima/home_english.html>

[110] Financing Mozambique, 2013. <http://www.financingmozambique.com/?__target__=institution&id=28>

[111] Macauhub, 2013. <http://www.macauhub.com.mo/en/2013/01/10/mozambique-buys-farming-equipment-with-donation-from-italy/>

[112] World Bank. " Mozambique - Sustainable Irrigation Development Project (PROIRRI)" 2011 <http://documents.worldbank.org/curated/en/2011/02/13800979/mozambique-sustainable-irrigation-development-project-proirri>

evolve towards formalized "bankable" farmers' associations with stronger links to the market and with access to financial services from commercial banks.

(10) Mais Alimentos Africa by the Government of Brazil

The Mais Alimentos Africa Program (More Food Africa Program) is a development aid program by the Brazilian Government, which is being implemented in several African countries, including Ghana, Zimbabwe, Mozambique, Senegal and Kenya. It aims to increase agricultural productivity and food security in Africa by improving access through mechanization.[113] The Program adopts the same approach as that of the Mais Alimentos Program implemented in Brazil, which is part of the National Program for Strengthening Family Farming (PRONAF). The Mais Alimentos Program consists of a credit facility to support the purchase of farming machinery and equipment by small-scale farmers, complemented by specialized technical assistance. Through the program, farming machinery and equipment are purchased at a 15% discount.[114] In April 2012 the Brazilian Government announced to finance USD 100 million to implement the Mais Alimentos Africa Program in Mozambique and an agreement on the technical cooperation to implement the program was signed by both governments.[115]

1.5 Farming Practices in the Nacala Corridor

1.5.1 Cultivated Area

According to the Agriculture Census in 2009-2010 carried out by the National Institute of Statistics (INE), the number of farm-households (agriculture and livestock) in Mozambique was 3,827,797, while their cultivated land area totaled 5,633,850 ha. MINAG defines the scale of farms as follows: small-scale farmers represent those farms with a cultivated land of up to 10 hectares; medium-scale farms up to 50 hectares; and large-scale farms above 50 hectares. Farm-households are pre-dominated by small-scale farmers with their cultivated area being only 1.47 ha on average as shown in Table 1-5. The share of medium-scale and large-scale farmers are relatively high in Tete, Gaza and Maputo Provinces compared to that in the northern provinces, the production center of the country.[116]

[113] Lídia Cabral and Alex Shankland, "Narrative of Brazil-Africa Cooperation for Agricultural Development: New Paradigms?" 2013
[114] Brazilian Ministry of Agrarian Development's website
< http://www.mda.gov.br/portal/saf/programas/maisalimentos>
[115] Embassy of Japan in Mozambique, "Monthly Report of Mozambique," April and August 2012
[116] ProSAVANA-PD., Interim Report (1)

Table 1-5 Number of Farm-households and their Cultivated Land in Mozambique

	Small	Medium	Large	Total
Number of farm-households	3,801,259	25,654	884	3,827,797
(%)	(99.3)	(0.7)	(0.0)	(100.0)
Cultivated land (ha)	5,428,571	130,651	74,628	5,633,850
(%)	(96.4)	(2.3)	(1.3)	(100.0)
Average cultivated land (ha/household)	1.43	5.09	84.4	1.47

Source: Agriculture Census in 2009-2010, INE

According to the Agricultural Census 2009-10, the average cultivated land area of farm-households in Niassa Province was 1.82 ha, while it was 1.25 ha and 1.29 ha for those in Nampula and Zambézia Provinces, respectively, which are below the national average of 1.47 ha.

Table 1-6 Cultivated Area and Farm-households in Concerned Districts

Province	Cultivated area		Farm-households		Average farming size
	(ha)	(%)	(number)	(%)	(ha)
Nampula	1,037,748	18.4	829,642	21.7	1.25
Niassa	409,473	7.3	225,151	5.9	1.82
Zambézia	1,071,170	19.0	828,801	21.7	1.29
National	**5,633,850**	**100.0**	**3,827,797**	**100.0**	**1.47**

Source: Agriculture Census in 2009-2010, INE

1.5.2 Farming Practices

Subsistence farmers are dominant in the Study Area. Most small-scale farmers produce crops only for their own consumption while their cultivation is characterized by low yields and modest returns. Those who cultivate around 1 to 2 ha or less generally produce their own staples, such as maize, cassava, sorghum, groundnut, and several kinds of beans. Mixed cropping is usually applied to the cultivation of these crops. Farmers who cultivate more than around 5 ha (representing less than 6% of total farm-households in Mozambique)[117] grow a diversity of crops in addition to staples. They are sometimes the out-growers of cotton and tobacco companies while at the same time growing vegetables and other cash crops when they have access to water sources for irrigation.

The cropping system of farm-households in the Nacala Corridor is characterized by low technology and inputs use through a traditional system of crop management and land use, such as mixed cropping and shifting cultivation. The majority of farmers in the Nacala Corridor, except those in the eastern region, are still dependent on slash-and-burn, shifting cultivation. Seed used for planting is mostly produced in the previous harvest. Farmers usually shift their cultivated land every 3 to 5 years in order to make use of new fertile land. Shifting cultivation through slash-and-burn is the fundamental cause of the low utilization of inputs since such farming practices do not usually require inputs. Given the present uncertain rainfall conditions,

[117] Agriculture Census in 2009-2010, INE

it is rather reasonable for farmers to choose a steady farming strategy of low-inputs and low-returns but stable production through shifting cultivation as long as the land is available.

The Nacala Corridor has a high population growth rate of 2.5% per year. Growing population on land has started to appear in some areas in the Nacala Corridor, causing conflicts between people, especially in the areas where land is fertile and easy to access from main roads. Faced with the limited availability of land for shifting cultivation, farmers in these areas have begun to change their farming practices towards intensive, settled cultivation.[118]

1.5.3 Inputs

The use of inputs is limited in slash-and-burn shifting cultivation. Seed is harvested from the farmland or obtained from neighbors. According to FAOSTAT (2010), the annual pesticide use in Mozambique was around 900-1,000 tonnes from 2006 to 2010. Since pesticide is not produced within the country, all pesticide used is imported.[119] Most farmers do not buy chemical fertilizer due to a lack of financial resources to purchase or lack of sufficient returns from their use. Overall application of inputs in the Nacala Corridor is practically negligible, as shown in Table1-7.

Table 1-7 Share of Farm-households using Farm Inputs (2007)

Province	Inputs (%)		
	Maize seed	Fertilizer	Pesticide
Nampula	6	2	3
Niassa	5	7	3
Zambézia	11	1	1
National	**10**	**4**	**5**

Source: TIA 2007, MINAG

The situation is different for cash crop cultivation. Since due return is expected from their use, many farmers use inputs, even at a minimum level, for vegetables, cashew nut, and other similar crops. In the case of cotton and tobacco, the concessionaires (buyers) often provide necessary inputs for which the costs are deducted upon harvest.

[118] ProSAVANA-PD., Interim Report
[119] Ibid.

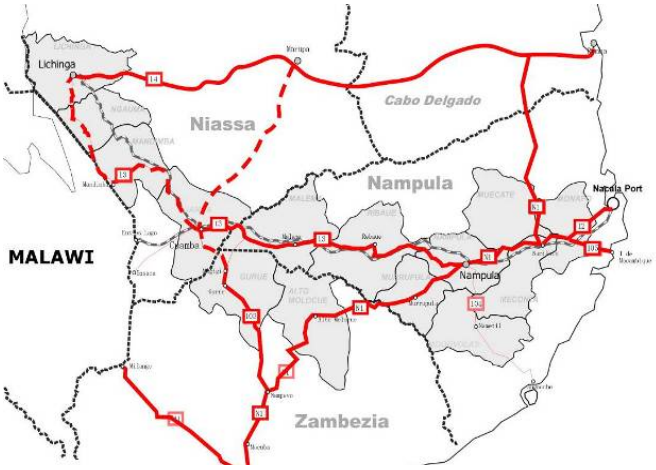
1.6 Agriculture-related Infrastructure in the Nacala Corridor

(1) Road Transportation

Less than a third of the total classified roads in the Nacala Corridor are in good condition.[120] Major sections of the road network are practically impassable during the rainy season, which causes regular vehicle breakdowns, making delivery of inputs and harvests difficult and costly.

Many classified roads in the Nacala Corridor will be upgraded by 2017 with two parallel horizontal paved two lanes roads connecting the Nacala Port to Cuamba, and Pemba to Lichinga. It is planned that the African Development Bank (AfDB) and JICA will implement the rehabilitation and pavement of Road N13 from Cuamba to Lichinga. Road N1 from Quelimane in Zambézia Province to Pemba in Cabo Delgado Province and Road No.103 from Mocuma in Nampula Province at N1 to Magige passing Gurué in Zambézia Province are also going to be rehabilitated by 2014. Once these roads are improved, Cuamba City, located in the southern part of Niassa Province, will become a regional center for the western part of the Nacala Corridor.

Efficient freight services are one of the key factors that determine the viability of agribusinesses with major transportation service providers being based in the Nacala Port for which the routes are for most part in good condition. While small and medium service providers are operating in the Nacala Corridor, their services are often costly due to a lack of competition. Most trucking service providers are owner-operators, typically owning one or two trucks. Freight services tend to be ad hoc and mainly operate without formal contracts; operators usually offer their services on a one-off basis for individual loads.



Source: ProSAVANA-PD

Figure 1-3 Major Road Network in the Nacala Corridor

(2) Railway (Nacala Railway)

The Nacala Railway (Northern Railway Line) connects Nacala, Nampula, Cuamba and finally the Central Africa Railway in Malawi at Entre Lagos. Additionally at Cuamba, one branch line goes north to Lichinga. A passenger train is operating between Nampula and Cuamba everyday,

[120] USAID/AgriFUTORO, 2010. "Nacala Corridor Assessment: Strategy-Based Transport Logistics and Supply Chain Efficiency", Final Report

excluding Monday, and a train goes to Lichinga once a month. While there is no regular service for cargo, the cargo train between Nacala port and Malawi represents 75% of the total operation of the railway.[121] In 2011, the total number of passengers was about 864,000 while the total volume of cargo was 241,000 tonnes.[122] Railway transport is rarely utilized for the transport of agricultural products in the Nacala Corridor; only in the harvest season is maize collected in Cuamba, and transported to Nampula and Nacala by cargo train.

(3) Nacala Port

The Nacala Port consists of a container terminal (south terminal), a general cargo terminal (north terminal) and a liquid bulk terminal. Nacala Port's natural depth allows the operation of large vessels with the Nacala Port's general cargo terminal having a capacity of 2.4 million tonnes of cargo annually.[123] Due to its location close to Asia, regular lines have been operating to India and Singapore since 2011, reaching these countries within 12 days and 13 days respectively.

(4) Power Supply

A major source of the power in Mozambique is the Hydro Power Plant of Cahora Bassa (HCB). All district centers in the Nacala Corridor are connected to the national power network except N'gauma in Niassa Province. HCB is expected to increase its capacity from the present 2,075 MW to 3,320 MW through improvements. A new power grid between Caia to Nacala, for which operation is planned to begin in 2020, will stabilize the power supply to Nacala, Nampula and other eastern regions of the Nacala Corridor up to Ribáuè District.[124]

All district centers in the Nacala Corridor are connected to the national power supply grid except for N'gauma in Niassa Province.[125] 25 of the 34 administration posts in Nampula Province, 3 of the 11 in Niassa Province and 3 of the 5 in Zambézia Province in the Nacala Corridor are connected to the national network. The Government of Mozambique has a policy to expand the power supply service areas along the existing network with the electrification of the administration posts being the first priority.

(5) Irrigation System

Irrigation areas total 6,700 ha in the Nacala Corridor of which only 45% is in use at present due to malfunctioning or abandoned facilities.[126] Areas that have irrigation facilities that are not in use can be considered as potential areas for irrigational development through rehabilitation of the canal network with the re-arranging of irrigation plots.

[121] ProSAVANA-PD, Interim Report (2)
[122] ProSAVANA-PD, Interim Report (1)
[123] USAID/AgriFUTURO, 2010.
[124] ProSAVANA-PD, Interim Report (1)
[125] N'gauma District has a generator but it was broken down in 2010.
[126] ProSAVANA-PD, Interim Report (2)

Land suitable for irrigational development is spread widely over the Nacala Corridor. According to a study done by ARA-CN,[127] Class 1 (high potential) and Class 2 (moderately suitable) areas were estimated at 824,750 ha and 594,550 ha, respectively, which account for 27% of total land area within the Nacala Corridor, excluding the districts of Niassa (except for Cuamba District). Areas highly or moderately suitable for irrigation are distributed throughout the Nacala Corridor with Malema and Monapo showing the highest potential.

(6) Storage Facilities

Two types of storage facilities are widely found in the Nacala Corridor; one is modern multi-purpose warehouses of various capacities, and the other is small-scale traditional storage facilities built on private land. Large-scale grain silos have recently started to be built in maize and soybean production areas by both the private and public sectors. A large number of small-scale traditional-type warehouses (typically less than 100 tonnes, built of bamboo with thatched roof), which are often used as "buying-posts", are found throughout the Nacala Corridor and are locations to which farmers bring their produce to sell, while medium-scale warehouses (100 - 1,000 tonnes) are located at district capitals or other major collection points (e.g. Cuamba, Namialo, Monapo). Large-scale warehouses (more than 1,000 tonnes) are usually built on the fringes of large domestic markets (e.g. Nampula City) or at shipping points for long-distance transportation (e.g. the Nacala Port).[128]

Small-scale warehouses are often subject to considerable storage losses in both quantity and quality from insect, pest, mold and rodent infestations. To avoid quality deterioration, producers fumigate stored produce with wood smoke. Nevertheless, postharvest losses are still high with this type of storage since no insecticide is applied.

Most of these small-scale warehouses are used for short-term storage with a maximum storage period of one week, according to the trade inventory survey conducted by the ProSAVANA-PD Team. The average capacity of warehouses is 374 tonnes and the annual stored amount is 1,730 tonnes on average, meaning that each warehouse is used only for 4.6 weeks on average in a year, assuming that the storage period is one week. It was discovered through the interview survey of this Study that the capacity of these small-scale warehouses is too small to accommodate all harvested produce, thus aggravating the damage to the produce. There is need for both an increase in storage capacity and a better organized collection and sales system for produce.[129]

There are more than one public warehouse in each district of the Nacala Corridor, which was built in the Portuguese colonial era. These warehouses are currently owned by ICM (Institute of Cereal Mozambique). The storage volumes for these warehouses vary from 200 tonnes to 5,000

[127] Present Status Report of Study for the establishment of ARA Centro-Norte, 2006, DNA.
[128] ProSAVANA-PD, Interim Report (1)
[129] ProSAVANA-PD, Interim Report (1)

tonnes. Almost all the storage space is currently rented out to the private sector.[130] The warehouses are in general utilized for all-purpose storage, not specialized for grain or other produce. These warehouses were constructed 50 years ago and are in need of rehabilitation.

Under an initiative of the Ministry of Industry and Trade, by the end of 2014 Mozambique will have an additional silo storage capacity of 39,000 tonnes through the construction of a total of 39 new silos with a capacity of 1,000 tonnes in locations that are considered to be strategic in the provinces of Sofala, Tete, Zambézia, Nampula, Niassa and Cabo Delgado. According to the Ministry of Industry and Trade's announcement, the management of the 39 food storage silos will be handed over to private companies via public tenders.

(7) Rural Market Facility

All district capitals in the Nacala Corridor have a public market, which opens every day for the selling of agricultural products as well as other commodities. In villages along the national road, temporary or semi-permanent markets open mainly on weekends. Products sold at these small-scale markets are supplied by traders or producers operating near each market. Under the Rural Market Program (PROMER)[131] supported by IFAD, market facilities are planned to be developed at the public markets in cities and district capitals, and at open markets in rural areas in northern Mozambique (mainly in Malema, Ribáuè, Cuamba, Mandimba, Gurué, and Alto Molocue).

1.7 Policies and Regulations on the Socio-environmental Impacts of Agribusinesses

1.7.1 Overview

Closely relating to the section on land issues (see Section 1.2 "Current Situation of Land Use and Land Issues"), it is socially, morally and legally obligatory for any investments (private or public) to ensure the protection of the environment and of the people who live on the investment site. The Constitution of the Republic of Mozambique provides the people of Mozambique with the right to live in a balanced natural environment (Article 90) and commits "the State and local authorities, in collaboration with other appropriate partners, to adopt policies for the protection of the environment and care for the rational utilization of all natural resources".

In Mozambique, the National Environment Impact Assessment (EIA) Directorate of the Ministry for the Coordination of Environmental Action (MICOA) is responsible for environmental management. The Environment Law (Law No. 20/97, of October 7, 1997) is the

[130] ProSAVANA-PD, Interim Report (2)

[131] The programme's target group includes small-scale semi-subsistence farmers and other poor farmers, most of whom live below the poverty line. Another target group includes small and medium-sized rural traders who play a crucial role in linking poor farmers to markets. The programme's specific aims are to: (1) improve small-scale farmers' access to and participation in agricultural markets and value chains, (2) develop more efficient market intermediaries and more effective partnerships to stimulate increased agricultural production and added value (3) favor a more conducive environment for agricultural market operations. cited in IFAD, 2013. Rural Market Promotion Programme (PROMAR)
<http://operations.ifad.org/web/ifad/operations/country/project/tags/mozambique/1423/project_overview>

foundation of a whole set of legal instruments for the preservation of the environment. Under Article 1 of the Environment Law, the environment is defined as "the medium in which humans and other beings live and interact among themselves and with the medium itself, including: 1) air, light, land and water; 2) ecosystems, biodiversity and ecological relationships; 3) all organic and inorganic matter; and 4) all socio-cultural and economic conditions that affect the lives of communities."

1.7.2 Basic Principles of Environmental Management

Taking into account the constitutional provision for "an ecologically balanced environment" for all citizens, Article 4 of the Environment Law establishes the following basic principles for environmental management[132];

(1) Rational utilization and management of the environment to promote an improved quality of life for citizens, and the maintenance of biodiversity and ecosystems;

(2) Recognition of traditions and local knowledge that may contribute to the conservation, and preservation of natural resources and the environment;

(3) Precaution, in the sense that activities that might harm the environment must be prevented, especially if there is insufficient scientific certainty about the likelihood of the occurrence of such impacts;

(4) A global, integrated vision of the environment as a grouping of interdependent ecosystems that must be managed in such a way as to maintain their functional equilibrium without exceeding their intrinsic limits;

(5) Public participation;

(6) Equitable access to natural resources by all; and

(7) Commitment to minimizing trans-boundary impacts.

1.7.3 Environmental License and Environmental Impact Assessment

Prior to implementing any projects, an investor is required to obtain an environmental license, which is a pre-requisite to the issuance of any other licenses or permits for an investment project.[133] The implementation of an investment project without obtaining an Environmental License can result in a fine equivalent to double the licensing fee for the project and the immediate suspension of the project (Article 26). Moreover, failure to implement the mitigation measures proposed in the environmental impact study or non-compliance with the terms and conditions of the Environmental License can result in a fine of MZN 24 - 240 million, and failure to update the Environmental License can result in a fine of MZN 10 - 20 million.[134]

[132] "SADC Environmental Legislation Handbook 2012," Development Bank of Southern Africa
[133] Ibid.
[134] Ibid.

The Environment Impact Assessment Regulations, which are applicable to all investment projects, employ three categories to determine the required level of EIA, namely:

(1) Category A: Projects that may have significant impacts on environmentally or socially sensitive areas. A full EIA is required for projects that fall under Category A;

(2) Category B: Projects that may cause negative environmental or social impacts but with a lower duration, intensity, extension, magnitude, and/or significance compared with those projects that fall under Category A. An EIA or a Simplified Environmental Report (SER) is required for projects that fall under Category B; and

(3) Category C: Projects that have low risks of environmental impacts. Neither EIA nor SER is required for a project that falls under Category C.

Table 1-8 provides examples of general environmental and social areas that fall under Category A and Table 1-9 provides a list of agricultural and agro-processing activities that are classified as Categories A, B, and C.

Table 1-8 Areas that Fall under EIA Category A

Aspect	Examples of Areas that Fall under Category A
Environment	Areas and ecosystems recognized as falling under the special statutes of national and international legislation, including: • Indigenous forests; • Zones or areas of conservation or protection; (Note: Along the Nacala Corridor, there are four sites that are designated as protected areas: the Lake Niassa Partial Reserve in Niassa Province and the Mecuburi Forest Reserve, the M'palue Forest Reserve, and the Ribáuè Forest Reserve in Nampula Province.) • Zones containing endangered animal or vegetation species, habitats, or ecosystems; • Zones exposed to desertification; • Marshes; • Zones of unique scenery; • Protection areas around water supply springs and fountains; and • Zones of archaeological, historical and cultural value to be preserved.
Social	• Populated areas that imply the need for resettlement; • Regions subject to high levels of development or regions where there are conflicts over the distribution and use of natural resources; • Areas along rivers or areas used by local communities as domestic water supply sources; and • Zones containing valuable resources such as aquatic resources, minerals, medicinal plants, etc.

Source: "Decree no.45/2004 EIA Regulations"

Table 1-9 EIA Classification of Agricultural and Agro-processing Activities

Category	Activity (only those related to Agriculture/Agro-industry Sector)
A	All activities related to and/or situated in sensitive areas described in the Table above and: • Parceling for agriculture of more than 350ha with irrigation or 1,000ha without irrigation; • Conversion of agricultural land to commercial, urban or industrial purposes; • Conversion of areas more than or equal to 100ha of agricultural land without cultivation for more than 5 years to intensive agriculture; • Introduction of new crops and exotic species;

Category	Activity (only those related to Agriculture/Agro-industry Sector)
	• Irrigation systems for areas of more than 350ha; • Aquaculture or marine fish culture with production more than 100 tonnes/year and area equivalent to or greater than 5ha; • Intensive animal breeding of more than: 100,000 poultry; 3,000 pigs and/or 100 breeding sows; and 500 cattle and an individual or cumulative area of less than 2,000ha (4ha/animal); • Aerial or terrestrial spraying over individual or cumulative area greater than 100ha; • Factory for animal feed with production of 2,000 tonnes/month; • Production of animal oils and fats (production greater than or equal to 75 tonnes/day) and vegetable oils and fats (production greater than or equal to 300 tonnes/month); • Sugar mills, including the cultivation of sugarcane; • Reclamation, parceling and exploration of indigenous vegetative cover with individual or cumulative area greater than 100ha; • Deforestation with more than 50ha, reforestation and forestation of more than 250ha; • Commercial exploitation of natural fauna or flora; • Industrial allotment of more than 15 ha; • All principal roads outside urban zones, construction of new roads; • Water conduits of more than 0.5m diameter and of more than 10km in length; • Dams and weirs with an inundated area equivalent to or greater than 5ha; • Exploration for, and use of, underground water resources, including the production of geothermal energy that imply the extraction of more than 500 m3/h or 12,000 m3/day; • Manufacturing of pesticide; and/or • Production or processing of fertilizer.
B	• All activities that do not appear in the Categories A and C.
C	• Irrigation schemes with individual or cumulative area between 50 and 100ha; • Transformation or removal of indigenous vegetation with areas between 100 and 200ha without irrigation; • Exploration for, and use of, underground water resources including the production of geothermal energy which implies extraction of more than 200 m3/year; • Poultry farming in pavilions with capacity between 1,000 and 1,500 poultry; • Fruit and flower preservation industries with production greater than or equal to 300 tonnes/day; • Animal feed production factories with production less than 1,000 tonnes/month; and/or • Cashew nut processing factories

Source: ProSAVANA-PD Interim Report (1)

1.7.4 Potentially Applicable Sector Legislation

Other legal instruments that are relevant to the agricultural and agro-industry sector are summarized in the table below.

Table 1-10 Legal Framework of Environmental and Social Considerations

Major Legal Instruments (only those related to Agriculture/Agro-industry Sector)	Responsible Organizations (central / provincial)
Environment in general [Environmental Impact Assessment] • Law no.27/90: Environment Law • Decree no.45/2004: Regulations on Environmental Impact Assessment Process; Ministerial Orders no.198/2005, 129/2006,130/2006, 182/2010 • Decree no.11/2006: Regulations on Environmental Inspections • Decree no.25/2011: Regulations on Environmental Audit Process • Decree no.5/2012: Regulations on Simplified License	MICOA/ Provincial Directorate for the Coordination of Environmental Action (DPCA)
Land, Forest and Wildlife; Protected Areas • Law no.19/97: Land Law • Decree no.66/98: Regulations on the Land Law; Decrees no.1/2003, 50/2007, 43/2010, Resolution no.70/2008, and Ministerial Orders no.29-A/2000, 144/2010, 158/2011 • Decree no.60/2006: Regulations on Urban Land • Law no.10/99: Forest and Wildlife Law • Decree no.12/2002: Regulations on Forest and Wildlife Law (plus, Decrees no.11/2003, 30/2012, and Ministerial Orders no.55/2003, 93/2005)	MINAG / DPA Ministry of Tourism (MITUR) (for national parks and reserves)
Territorial Arrangement, Land Expropriation, and Resettlement • Law no.19/2007: Territorial Arrangement Law • Decree no.23/2008: Regulations on the Territorial Arrangement Law; Ministerial Order no.181/2010 • Resolution no.63/2009: Conservation Policy and its Implementation Plan, Annex 4 • Decree no.31/2012: Regulations on Resettlement Process caused by Economic Activities	MICOA / DPCA
Water • Resolution No. 7/95: National Water Policy • Law no.16/91: Water Law • Decree no.43/2007: Regulations on License and Concession of Water • Decree no.47/2009: Regulations on Small Dams • Decree no.18/2012: Regulations on Survey and Exploitation of Groundwater	Ministry of Public Works and Housing (MOPH) / Regional Water Administration (ARA)
Pollution and Waste • Decree no.18/2004: Regulations on Standard of Environmental Quality, Emissions and Effluents; Decree no.67/2010 • Decree no.13/2006: Regulations on Waste Management • Decree no.6/2009: Regulations on Management of Pesticides	MICOA / DPCA MINAG / DPA (for pesticide)
Cultural Heritage • Law no.10/88: Cultural Heritage Protection Law • Decree no.27/94: Regulations on Protection of Archaeological Heritage • Law no.13/2009: National Liberation Heritage Protection Law • Decree no.72/2009: Regulations on the National Liberation Heritage Protection Law	Ministry of Education and Culture (MEC)/ Provincial Directorate of Education and Culture (DPEC)
Note: The hierarchy of legal instruments follows the order of: Constitution and Laws enacted by the Assembly of the Republic (Parliament); Decree-Laws and Decrees enacted by the Council of Ministers; Presidential Decrees enacted by the President of Republic, Ministerial Regulations enacted by a Ministry or jointly by several Ministries; and Mistrial Orders by a Minister.	

Source: ProSAVANA-PD Interim Report (2), SADC Environmental Legislation Handbook 2012

Chapter 2 Overall Demand for Agricultural Loans in the Nacala Corridor

The Study Team visited over 50 agribusinesses, farms, and farmers' organizations to conduct a sample survey on the actual situation, including growth potential and challenges, of the demand side of agricultural loans. The ultimate goal of the survey was to roughly estimate the volume of overall demand for agricultural loans in the Nacala Corridor over the short to medium term, while at the same time clarifying the necessary support measures that would enable the realization of these loans. Towards this end, following the consultations with the Study Area's DPAs and SDAEs as well as the ProSAVANA-PD Team, the Study Team selected for interviewing relatively established agri-businesses, farmers' organizations, and farms that may have loan needs and the potential for meeting necessary loan requirements. The following is the number of agribusinesses, farms, and farmers' organizations visited by the Study Team.

Table 2-1 Number of Agribusiness, Farms, Farmers' Organizations Visited by the Study Team

Type	Activity	No.
Agribusinesses (Medium to large sized companies)	Farming (production) / livestock	17
	Processing[1/]	5
	Trading	1
Farms	Farming (production) / livestock	19
Farmers' Organizations	Various types of member services	11
	Total	**53**

[1/] Many of the companies engaged in processing (e.g. processing of chicken feed and cashew nut processing) are also engaged in farming (soybean production and cashew nut production). These are counted under the "Farming (production)/livestock" section.
Source: Study Team

The Study Team collected the following information from these entities to assess their loan needs:

- Basic profile of the organization (type of business [farming, processing, trading, etc.]; size of land owned and used; main produce/services; year of establishment; legal status; manpower/membership composition, etc.);
- Financial background (revenues and expenditures; assets owned; and credit history [bank, amount, interest rate, borrowing period, and use]);
- Constraints to growth; and
- Future plan and credit needs (amount and use).

2.1 Loan Demand of Agribusinesses Engaged in Production

The Study Team visited 17 agribusinesses engaged in production (farming and livestock breeding); 9 agribusinesses operating in Nampula Province, 3 in Niassa Province, and 5 in Zambézia Province. The following are the general characteristics of the agribusinesses interviewed by the Study Team (see Appendix 3, 4 and 5 for the profiles of businesses).

2.1.1 Basic profile

Of the 17 agribusinesses visited by the Study Team, 9 (53%) were funded and/or owned by foreign investors (hereinafter "foreign companies") and the rest (8 companies; 47%) were companies owned by Mozambican nationals (including those founded by farmers' associations or NGOs) (hereinafter "Mozambican companies").

The size of land on which foreign companies had legal entitlement (either provisional or fully granted DUAT) ranged from 250 ha to 10,000 ha, and the average land amount of a company was 2,689 ha. On the other hand, the size of land on which Mozambican companies had legal entitlement ranged from 150 ha to 2,000 ha with an average land amount of 980 ha. As to the actual utilization of land, the amount of land that foreign companies were using for agricultural activities ranged from 125 ha to 2,000 ha with an average land amount of 717 ha. The amount of land that Mozambican companies were using for agricultural activities ranged from 40 ha to 200 ha with an average amount of 125 ha.

Table 2-2 Amount of Land of the Agribusinesses Visited by the Study Team

Ownership	No.	Land Entitlement		Land Used	
		Range	Average	Range	Average
Foreign Companies	9	250 ha - 10,000 ha	2,689 ha	125 ha - 2,000 ha	717 ha
Mozambican Companies	8	150 ha - 2,000 ha	980 ha	40 ha - 200 ha	125 ha

Source: Study Team

Since ProSAVANA ultimately seeks the livelihood improvement of residents in the region, the Study Team selected agribusinesses that would have direct or indirect impacts for the regional economy and residents' incomes, such as soybean and seed production. The following table lists the main crops grown by the 17 agribusinesses visited by the Study Team. It should be noted that most agribusinesses produced multiple crops.

Table 2-3 Main Crops Produced by the Agribusinesses Visited by the Study Team

Crops	No. of Agribusinesses		
	Foreign companies	Mozambican companies	Total
Soybean	8	3	11
Other pulses (mung bean, pigeon pea, etc.)	3	1	4
Various seeds (maize, soybean, bean, etc.)	2	5	7
Sesame	1	4	5
Edible nut (cashew, ground and macadamia)	2	2	4
Poultry	2	0	2
Others (vegetables, jatropha, maize, livestock, etc.)	3	4	7

Source: Study Team

The foreign companies' employment for permanent workers ranged from 10 to 250 persons with an average of 85 and that for seasonal workers ranged from 30 to 400 with an average of 187.

Mozambican companies' employment was smaller compared with that of foreign companies due to their relatively small size of operations. In contrast, the Mozambican companies' employment for permanent workers ranged from 5 to 50 persons with an average of 15 and that for seasonal workers ranged from 18 to 150 with an average of 61. Most of the interviewed companies had either experience in conducting out-grower schemes or plans to implement one. It should be noted that 2 of the 9 foreign-owned agribusinesses interviewed in this survey began their production only in this 2012/13 season while all 17 agribusinesses had begun operating within the last ten years.

Table 2-4 Employment and Contract Farming of the Agribusinesses Visited by the Study Team

Ownership	No.	Employment				Contract farming	
		Permanent		Seasonal		On-going	Planned
		Range	Average	Range	Average		
Foreign Companies	9	10 - 250	85	30 - 400	187	4	6
Mozambican Companies	8	5 - 50	15	18 - 150	61	7	7

Source: Study Team

2.1.2 Financial Background

Most of the agribusinesses interviewed by the Study Team had substantial assets (e.g. agricultural machinery, trucks, and large warehouses made of concrete) that could be used for collateral. The foreign companies' asset size ranged from MZN 13 million to MZN 72 million with an average size of MZN 50 million. In contrast, the Mozambican companies' asset size ranged from MZN 2 million to MZN 35 million. The above information is extracted from a limited sample size since the Study Team was only able to collect information on the size of assets from less than half of the companies. While many companies did not disclose information on their profits and expenditures, most agribusinesses, especially the ones owned by foreign investors, seemed to have human resources highly experienced in managing commercial farms.

2.1.3 Constraints to Growth

The most common constraint to growth reported by the interviewed companies was difficulties in obtaining loans with reasonable interest rates. Since the interest rates for commercial bank loans range from 23% to 30% with the repayment period for most bank loans being not more than three years in Mozambique, many agribusinesses chose not to apply for loans and thus were obliged to allocate most of their cash to working capital. This made it difficult for companies to invest in expansion or the upgrading of their equipment.

In relation to working capital, many companies claimed that high operation costs were hindering the expanding of their businesses. For example, one company conducting contract farming reported that the high monitoring costs for contract farmers (salaries for extension workers and fuel for their motorcycles) limited the expansion of contract farming. In many cases land owned by contract farmers (out-growers) is scattered and companies have to cover a wide geographical area for monitoring.

Another company noted that the high cost of seed certification by IIAM (MZN 1,500/tonne) was also a constraint to growth.

Logistics was also reported as being a hindering factor to growth, especially for the companies operating around Lichinga. Due to poor road conditions, especially between Cuamba and Lichinga, it is difficult, expensive and time-consuming for companies in Lichinga to procure necessary inputs, such as chemicals and fertilizer. According to one company interviewed, trucks stop coming to Lichinga as soon as the rain starts. It should be noted that as Table 2-5 shows, no Mozambican-owned companies reported logistics as a major constraint to growth. This is most likely due to the fact that most of the Mozambican companies interviewed by the Study team are located in Nampula Province.

Other constraints to growth include:

- Lack of qualified human resources (e.g. farm managers and tractor drivers);
- Difficulty in finding reliable contract farmers who are able to provide a stable supply of crops and seed;
- Inconsistent quality in products produced by contract farmers;
- Poor work ethic of workers (e.g. time management); and
- Intrusion of small-scale farmers who try to use the company's land for shifting cultivation.

Table 2-5 Constraints to Growth (Agribusinesses)

Ownership	No.	Access to loans / insufficient working capital	Work ethic of contract farmers / employees	Logistics	Others (in consistent quality of produce, high expenses and land issue)
Foreign Companies	9	4	2	2	3
Mozambican Companies	8	6	2	0	3

Source: Study Team

2.1.4 Credit Needs

Table 2-6 summarizes the credit needs of the agribusinesses engaged in production visited by the Study Team. More specifically, it summarizes the expected uses of the agricultural loans, the loan amounts that they would like to obtain, their financial capacity, and the scale of expected socio-economic impacts that the loans would bring about for surrounding communities.

Table 2-6 Credit Needs (Agribusinesses)

	District	Purpose of the Loan	Expected Loan Uses	Financial Capacity	Needs	Amount (MZN, mil)	Term	Socio-Economic Impact
Foreign Companies								
B-1	Lichinga	Production of macadamia nut	Warehouse, drying facilities, land expansion	Yes	Yes	45	Long	Medium
B-2	Lichinga	Production of soybean	Contract faming	Yes	Yes	5.2	Medium	Large
B-9	Majune	Production of soybean and bean	Storage, machinery, inputs	Yes	Yes	15	Medium	Small
C-1	Gurué	Production of soybean and soybean seed	2 tractors and inputs for contract farming	Yes	Yes	4.5	Medium	Large
C-3	Gurué	Production of soybean, maize, cotton	Land expansion and contract farming	Yes	Yes	NA	Medium	Large
A-11	Rapale	---	---	---	No	---	---	---
A-18	Nampula	---	---	---	No	---	---	---
C-2	Gurué	---	---	---	No	---	---	---
C-9	Alto Molocue	---	---	---	No	---	---	---
Mozambican Companies								
A-5	Ribáuè, Malema, Mogovolas	Production of crops	Seed processing factory, warehouse, inputs for contract farming	Yes	Yes	6	Medium	Medium
A-6	Ribáuè	Production of soybean and vegetables	Working capital for contract farming	Yes	Yes	2	Medium	Large
A-7	Ribáuè	Production of crops	Cassava plant, warehouse, water pumps	Yes	Yes	5.8	Long	Medium
A-16	Ribáuè	Contract faming of crops, trading of inputs	Shops	Yes	Yes	3	Medium	Small
A-17	Nampula	Production of seed and crops	Land expansion	Yes	Yes	7.5	Medium	Small
A-24	Monapo	Production and processing of cashew nut	Processing facilities, increase of trees	Yes	NA	---	---	---
A-27	Monapo, Mogovolas	Purchase of grains	Working capital for contract farming	Yes	Yes	10.5	Medium	Large
C-8	Alto Molocue	Production of seed and crops	Warehouse, purchase of seed processing machines, tractors and other equipment, land expansion for seed production, and contract farming	Yes	Yes	54	Long	Large

Source: Study Team

2.1.5 Calculation of Credit Demand

There is no complete list of medium-to large-scale companies operating in the Nacala Corridor. The following figures were calculated based on the results of the Study Team's company visits, the review of CEPAGRI's database and other relevant literature (the Interim Reports for the ProSAVANA-PD and the Progress Report for the Project for Nacala Corridor Economic Development Strategies in the Republic of Mozambique) and the information provided by relevant stakeholders (e.g. DPA, SDAE, GAPI, and the ProSAVANA-PD Team).

The following is the estimation of the credit demand of the agribusinesses interviewed by the Study Team.

(1) Number of companies

(a) Total number of the companies interviewed: 17

(b) Number of companies that provided the estimated loan amount that they required: 11 companies

(c) Number of companies that reported that they would need a loan but could not provide the amount they required: 2

(d) Number of financially viable companies: all 13 (not including the ones without credit needs)

(e) Number of companies that claimed that they would not require credit: 4

(2) Loan amount (17 companies)

(a) Total loan amounts required by the 11 companies: about MZN 158.1 million

(b) Average loan amount required: MZN 14.4 million [MZN 158.1 million/11]

(3) Number of companies in the Nacala Corridor

(a) Number of agribusinesses known by CEPAGRI and other institutes in recent years in the Nacala Corridor: 54 companies

(b) Estimated total number of medium- to large-scale companies in the Nacala Corridor: 60 [approx.110% of 54]

(c) Estimated total number of medium- to large-scale companies in the Nacala Corridor that require an agricultural loan: 46 [60 * 13/17]

(4) Credit demand for agribusinesses engaged in farming/production in the Nacala Corridor

Total loan demand (optimistic): MZN 662.4 million [MZN 14.4 million * 46]

Table 2-7 Credit Demand (Agribusinesses)

Optimistic Scenario[135] (Baseline * 150%)	Baseline Scenario	Pessimistic Scenario (Baseline * 50%)
MZN 662.4 million	MZN 441.6 million (31 businesses)	MZN 220.8 million

Note: The loan amount calculated based on the findings from the survey is considered as an optimistic scenario because the companies visited by the Study Team were financially viable ones recommended by DPA and SDAE.

Source: Study Team

2.1.6 Socio-economic Impact

As shown in Figure 2-1, there are three main uses of the loans by the companies interviewed by the Study Team:

- Contract farming: seven companies;
- Facility construction (warehouses, shops, and/or processing facilities): seven companies; and
- Land expansion: four companies.

(Note: Many companies provided multiple answers.)

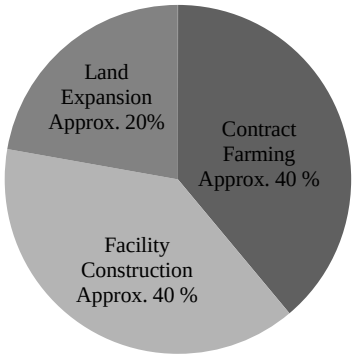


Figure 2-1 Expected Uses of the Loan (Agribusinesses in Production)

Source: Study Team

Based on the above findings, the Study Team estimated that 40% of the total loan amount for agribusinesses engaged in farming (production) would be used for contract farming, another 40% for facility construction, and the remaining 20% for land expansion.

(1) Contract farming

The socio-economic impact of providing loans to existing agribusinesses engaged in farming/production is deemed mostly high as the majority of such companies plan to use the loans for contract farming. Contract farming will significantly contribute to poverty reduction by providing the following benefits to farmers:

- Guaranteed purchase of crops;
- Improved agricultural techniques and skills through extension services provided by the contracting company (purchaser);
- Tractor services that increase the cultivated land amount; and
- Use of well-maintained storing facilities (e.g. silos) that reduce crop losses / damage.

[135] The following rates apply throughout this document. Optimistic scenario = baseline scenario *150%, pessimistic scenario = baseline scenario*50%

1) Total agricultural loans to be used for contract farming

Table 2-8 provides the breakdown of the estimated amount to be used for contract farming by agribusinesses engaged in farming (production). This calculation is made based on the estimated breakdowns provided by the companies interviewed by the Study Team.

Table 2-8 Breakdown of the Loans Expected to be Used for Contract Farming

(Unit: MZN million)

Breakdown	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
(i) Inputs (seed, fertilizer, etc.) (30%)	79.5	53.0	26.5
(ii) Tractors (40%)	106.0	70.6	35.3
(iii) Harvest and other expenses (30%)	79.5	53.0	26.5
Total (100%)[1/]	**265.0**	**176.6**	**88.3**

[1/] 40% of the total loan amount for agribusinesses engaged in production (see Table 2-7 and Figure 2-1)
Source: Study Team

2) Increase in crop production

Table 2-9 shows the estimated increase in crop production to be achieved from the agribusinesses' investments in contract farming that would be realized through agricultural loans.

Table 2-9 Expected Increase in Crop Production (Agribusinesses: Contract Farming)

Items		Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
(i) No. of tractors: Table 2-8 (ii) /MZN 1 million (tractor)[1/]		106 tractors	71 tractors	35 tractors
(ii) No. of days that a tractor is used per year [2/]		45 days	45 days	45 days
(iii) Area cultivated per year, per tractor [3/] (3.5 ha/day)		157.5 ha	157.5 ha	157.5 ha
(iv) Area cultivated per year by all tractors purchased		16,695 ha	11,183 ha	5,513 ha
Increase in Production[4/]	40% of (iv) total land cultivated	6,678 ha	4,473 ha	2,205 ha
	Soy bean: 1.5 tonnes/ha [5/]	10,017 tonnes	6,710 tonnes	3,308 tonnes
	15% of (iv) total land cultivated	2,504 ha	1,677 ha	827 ha
	Other pulses: 1.5 tonnes/ha (haricot bean)[5/]	3,758 tonnes	2,516 tonnes	1,240 tonnes
	20% of (iv) total land cultivated	3,339 ha	2,237 ha	1,103 ha
	Various seeds: 3 tonnes/ha (maize seed) [6/]	10,017 tonnes	6,710 tonnes	3,308 tonnes
	15% of (iv) total land cultivated	2,504ha	1,677 ha	827 ha
	Sesame: 1.0 tonne/ha [5/]	2,504 tonnes	1,677 tonnes	827 tonnes
	10% of (iv) total land cultivated	1,670 ha	1,118ha	551 ha
	Various nuts: 2.7 tonnes/ha (groundnut) [5/]	4,509 tonnes	3,019 tonnes	1,488 tonnes

1/ A tractor imported from China is estimated to cost about MZN 1 million.
2/ Based on the ProSAVANA-PD Interim Report (2).
3/ Based on the Study Team's interviews and literature review
4/ The breakdown of crops produced is based on Table 2-3.
5/ These yields can be achieved by improved farming practices according to the ProSAVANA-PD Interim Report (2).
6/ Based on the information provided by a company interviewed by the Study Team
Source: Study Team

3) Increase in employment

Table 2-10 shows the estimated increase in employment to be achieved from the agribusinesses' investments in contract farming that would be realized through agricultural loans.

Table 2-10 Expected Increase in Employment (Agribusinesses: Contract Farming)

Items	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
Area cultivated per year by tractors purchased by the loans[1/]	**16,695 ha**	**11,183 ha**	**5,513 ha**
i. Total areas used by contract farms that use land (3 ha-<5 ha): 45%	7,513	5,032	2,481
ii. Total area used by contract farms that use land (5 ha-<10ha): 35%	5,843	3,914	1,930
iii. Total area used by contract farms that use land (10 ha-<30 ha): 20%	3,339	2,237	1,103
Total number of contract farms	**2,824 farms**	**1,892 farms**	**932 farms**
i. Those that use land (3 ha-<5 ha)[2/]	1,878	1,258	620
ii. Those that use land (5 ha-<10 ha)[3/]	779	522	257
iii. Those that use land (10 ha-<30 ha)[4/]	167	112	55
Number of additional permanent workers (extension and administrative workers) employed by agribusinesses for out-grower schemes[5/]**:**	**300 people**	**200 people**	**100 people**
Number of permanent workers employed by:	**11,310**	**7,578**	**3,732**
i. Contract farms that use land (3 ha-<5 ha)[6/] 3 workers per farm	5,634	3,774	1,860
ii. Contract farms that use land (5 ha-<10 ha)[6/] 6 workers per farm	4,674	3,132	1,542
iii. Contract farms that use land (10 ha-<30 ha)[6/] 6 workers per farm	1,002	672	330
Number of seasonal workers employed by:	**13,648**	**9,146**	**4,502**
i. Contract farms that use land (3 ha-<5 ha)[6/] 3 workers per farm	5,634	3,774	1,860
ii. Contract farms that use land (5 ha-<10 ha)[6/] 6 workers per farm	4,674	3,132	1,542
iii. Contract farms that use land (10 ha-<30 ha)[6/] 20 workers per farm	3,340	2,240	1,100

1/ The breakdown is based on the Study Team's interviews and literature review.
2/ The calculation is based on 4.0 (rough average of 3 ha-<5 ha).
3/ The calculation is based on 7.5 (rough average of 5 ha-<10 ha).
4/ The calculation is based on 20.0 (rough average of 10 ha-<30 ha).
5/ The optimistic scenario: 30 companies * 10 workers.
6/ Calculations of the numbers of permanent and seasonal workers employed by contract farms are based on rough estimations derived from employment data obtained from farms visited by the Study Team (See Table 2-18).

(2) Land expansion

The use of loans for land expansion by middle to large agribusinesses will lead to an increase in employment and improved food security.

1) Baseline for calculation of land expansion

The following table shows the standard costs for land clearing (clearing bush), land preparation, and production. While the costs of production vary between crops, the average cost is about MZN 30,000 (USD 1,000) per hectare.

Table 2-11 Land Expansion, Preparation, and Production Cost per Hectare in Mozambique

(Unit: MZN)

Items	Maize	Cassava	Soybean	Cotton
Land clearing (manual)	20,000	20,000	20,000	20,000
Tractor services	2,000	1,500	2,000	3,500
Seed	875	2,500	1,500	188
Fertilizer	13,100	0	0	1,000
Agricultural chemicals	26	249	250	425
Other	0	0	300	3,857
Labor	2,280	1,520	3,000	3,040
per 1 ha	**MZN 38,281**	**MZN 25,769**	**MZN 27,050**	**MZN 32,010**

Source: Interviews with private companies and GAPI; Interim Report (1) of the ProSAVANA-PD

2) Increase in crop production

Table 2-12 shows the estimated increases in crop production to be achieved from the agribusinesses' investments in land expansion that would be realized through agricultural loans.

Table 2-12 Expected Increase in Crop Production (Agribusinesses: Land Expansion)

Items		Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
(i) Loan Amount [1/] (MZN million)		132.5	88.3	44.2
(ii) Land area expanded and cultivated (MZN 30,000/ha)		4,397ha	2,931 ha	1,4766ha
Increase in Production	40% of (ii) total land cultivated	1,767 ha	1,177 ha	589 ha
	Soybean: 1.5 tonnes/ha[2/]	2,650 tonnes	1,766 tonnes	884 tonnes
	15% of (ii) total land cultivated	663 ha	441 ha	221 ha
	Other pulses: 1.5 tonnes/ha [2/]	994 tonnes	662 tonnes	332 tonnes
	20% of (ii) total land cultivated	883 ha	589 ha	295 ha
	Various seeds: 3 tonnes/ha [2/]	2,649 tonnes	1,767 tonnes	885 tonnes
	15% of (ii) total land cultivated	663 ha	441 ha	221 ha
	Sesame: 1.0 tonne/ha[2/]	663 tonnes	441 tonnes	221 tonnes
	10% of(ii) total land cultivated	441 ha	294 ha	147 ha
	Various nuts: 2.7 tonnes/ha [2/]	1,191 tonnes	794 tonnes	397 tonnes

1/ 20% of the total loan amount for agribusinesses engaged in production (See Table 2-7 and Figure 2-1)
2/ See Table 2-9.
Source: Study Team

3) Increase in employment

Table 2-13 shows the estimated increases in employment to be achieved from the agribusinesses' investment in land expansion that would be realized by agricultural loans.

Table 2-13 Expected Increase in Employment (Agribusinesses: Land Expansion)

Items	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
Land area expanded and cultivated	4,417 ha	2,943 ha	1,473 ha
Number of permanent workers employed by agribusinesses; 1 permanent worker per 8 ha[1/]	552	369	184
Number of seasonal workers employed by agribusinesses; 1 seasonal worker per 3 ha[2/]	1,472	981	491

1/ The average land amount per one permanent worker is 8.4 ha for foreign-owned companies and 8.3 ha for Mozambican owned companies. (See Tables 2-2 and 2-4).
2/ The average land amount per one seasonal worker is 3.8 ha for foreign-owned companies and 2.0 ha for Mozambican owned companies. (See Tables 2-2 and 2-4).
Source: Study Team

(3) Facility construction

1) Total size of loans to be used for facility construction

Of the 7 companies that responded that they planned to use loans for facility construction, 5 companies planned to use loans to construct storage facilities (i.e. warehouses and silos), 4 companies planned to use the loans for processing facilities and/or equipment, and 1 company planned to use the loan for opening shops.

Table 2-14 Uses of Loans (Agribusinesses: Facility Construction)

(Unit: million MZN)

Uses	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
Storage facilities (50%)	132.5	88.3	44.2
Processing facilities/equipment (40%)	106.0	70.6	35.3
Shops (10%)	26.5	17.7	8.8
Total [1/]	**265.0**	**176.6**	**88.3**

1/ 40% of the total loan amount for agribusinesses engaged in production (see Table 2-7 and Figure 2-1)
Source: Study Team

2) Increase in crop production

While facility construction does not directly increase crop production, constructing a warehouse will increase companies' profits by reducing postharvest crop losses. According to the ProSAVANA-PD, the post-harvest loss of soybean due to poor drying and storing conditions is as high as 20%. A study by the Food and Agriculture Organization (FAO) /World Food Programme (WFP) also indicates that the post-harvest losses are 12% for maize and 10% for rice in the northern regions of Mozambique.[136]

[136] "Special Report: FAO/WFP Crop and Food Security Assessment to Mozambique" 12 August 2010, < http://www.fao.org/docrep/012/ak350e/ak350e00.htm>

3) Increase in employment

Table 2-15 shows the estimated increases in employment to be achieved from the agribusinesses' investments in facility construction that would be realized through agricultural loans.

Table 2-15 Expected Increase in Employment (Agribusinesses: Facility Construction)

Items	Category	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
Processing facilities and equipment	Permanent workers (10 workers for MZN 1.0 million)	1,060	706	353
	Seasonal workers (30 workers for MZN 1.0 million)	3,180	2,118	1,059
Shops	Permanent workers (10 workers for MZN 1.0 million)	265	177	88
	Seasonal workers (30 workers for MZN 1.0 million)	795	531	264
Total:	Permanent workers	1,325	883	441
	Seasonal workers	3,975	2,649	1,323

Source: Study Team

2.2 Medium Sized Farms

The Study Team visited 19 farms engaged in the production of crops, seed and/or grain and/or livestock breeding (13 farms in Nampula Province and 6 farms in Niassa Province). The following are the general characteristics of the agribusinesses.

2.2.1 Basic Profile

Of the 19 farms visited by the Study Team, 2 of them were registered as private companies and the remaining had not been registered with the government.

The amount of land on which the interviewed farms have legal entitlement ranged from 10 ha to 570 ha with an average land amount of 132 ha. The amount of land actually used ranged from 5 ha to 140 ha with an average amount of 40 ha. Of the 19 farms, 4 of them used between 5 ha and 10 ha of land, 7 used between 10 ha and 30 ha and the remaining 8 farms used more than 30 ha.[137]

Table 2-16 Land Owned and Used by Medium-sized Farms

Land owned		Land Used				
Range	Average	Range	Average	Category	No.	Average
10 ha - 570 ha	132 ha	5 ha - 140 ha	40 ha	5 ha - 10 ha	4	7.4 ha
				10 ha - 30 ha	7	24.6 ha
				More than 30 ha	8	62.3 ha

Source: Study Team

[137] Farms that cultivate more than 5 ha are less than 6% of the total farm-households in Mozambique. Farms that cultivate more than 10 ha are less than 0.14% (Agriculture Census in 2009-2010, INE).

Almost all the farms visited by the Study Team produced staple food crops (i.e. maize, cassava, and rice). About 70% of them produced vegetables widely consumed in Mozambique (e.g. tomato, onion, carrot and cabbage). It should be noted that not all crops produced by farms were sold; a large portion of crops, especially maize, cassava and vegetables, was for their own- consumption.

Table 2-17 Crops Produced by the Farms Visited by the Study Team

Crops	Number of Farms			
	5 ha - 10 ha	10 ha - 30 ha	> 30 ha	Total
Maize, cassava, and rice	3	7	6	16 (84.2%)
Vegetables (tomato, onion, carrot, etc.)	3	3	7	13 (68.4%)
Pulses (bean, pigeon pea, cow pea, etc.)	2	5	3	10 (52.6%)
Edible nut (cashew nut and groundnut)	1	0	3	4 (21.1%)
Livestock	1	0	3	4 (21.1%)
Seed	1	2	1	4 (21.1%)
Fruits	2	0	2	4 (21.1%)
Others (sesame, tobacco, cotton, etc.)	1	3	0	4 (21.1%)

Source: Study Team

About 40% of the farms interviewed owned a tractor and/or a truck. It should be noted, on the other hand, that the number of farms that own either of them is very small in Mozambique. According to the World Bank's report "Agribusiness Indicator: Mozambique," only 469 tractors were imported to Mozambique from 2008 to 2011 (33 in 2009, 77 in 2009, 284 in 2010, and 70 in 2011).

Table 2-18 Ownership of Farming and Transportation Equipment and Employment

Land Used			5 ha - 10 ha	10 ha - 30 ha	> 30 ha	Total
Equipment	**No. Farms**	**Total** [1/]	**4**	**7**	**8**	**19**
		Tractor [2/]	1	3	3	7 (37%)
		Truck/4 wheel [2/]	1	3	2	6 (32%)
		Motorcycle [2/]	1	2	1	4 (21%)
		Trailer [2/]	1	0	0	1 (5%)
Employment			**Average**	**Average**	**Average**	**Average**
	Permanent		7	5	8	7
	Seasonal		6	22	20	18

1/ Refer to Table 2-16
2/ Some farms provided multiple answers.
The percentages within brackets indicate the ratios of the farms that own specific equipment among the total number of farms; the total amount of all percentages added exceeds 100% since there are farms that own multiple types of equipment.
Source: Study Team

About 50% of the farms owned one or two storage facilities made of locally available materials such as mud clay, bamboo and bush stick with 30% owning storage facilities made of concrete and 30% not owning any storage facility.

2.2.2 Financial Background

Noting that 11 of the 19 farms (58%) owned a tractor and/or truck, most of the interviewed farms were deemed capable of providing some form of collateral. Many of those owning a tractor obtained it from the government or donors through various support programs. When interviewed, many farms were not able to provide reliable data on their revenues and expenditures (e.g. many of them could not provide the exact amounts of crops they consumed or sold) and did not seem to conduct proper bookkeeping. Before a loan is provided, there would be a need for book-keeping training.

2.2.3 Constraints to Growth

The most common constraint to growth reported by interviewed companies was difficulties in obtaining loans at reasonable interest rates. All farms responded that they have credit needs. The second most common constraints to growth were logistics (i.e. purchase of inputs and access to markets) and insufficient water supplies. These issues relate to the lack of access to capital as many cannot afford to purchase trucks and/or invest in irrigation facilities. The water supply issue is more heavily felt among farms producing vegetables in Nampula than farms in Lichinga where water supply is relatively abundant. Other challenges include insufficient storage space, insufficient financial management skills, and insufficient working capital among surrounding farms to pay for tractor services offered by them.

2.2.4 Credit Needs

Table 2-19 summarizes the credit needs of the farms visited by the Study Team. More specifically, it summarizes the expected uses of agricultural loans by the farms, the loan amount that they would like to obtain, their financial capacity, and the scale of expected socio-economic impacts that the loans would bring about for surrounding communities.

Table 2-19 Credit Needs (Medium-Sized Farms)

	District	Purpose of the Loan	Expected Loan Uses	Financial Capacity	Needs	Amount (MZN, million)	Term	Socio-Economic impact
Farms using less than 10 ha of land								
A-22	Muecate	Production of vegetables	Irrigation facilities, land expansion	Yes	Yes	1	Long	Medium
B-5	Lichinga	Poultry farming, pig breeding	Facilities, a dam, inputs	Yes	Yes	4	Long	Medium
A-8	Murrupula	Production of crops	A seed shop, cashew trees	No	---	---	---	---
B-7	N'gauma	Production of tobacco, maize, and bean	Storage	No	---	---	---	---
Farms using between 11 ha and 30 ha of land								
A-3	Malema	Production of maize and vegetables	A tractor, 4 water pumps, land expansion	Yes	Yes	0.8	Medium	Medium
A-9	Murrupula	Production of maize, sesame, and vegetables	A seed shop, a warehouse	Yes	Yes	1.1	Medium	Medium
A-25	Monapo	Production and processing of crops	Land expansion, truck, irrigation facilities	Yes	Yes	1.2	Medium	Medium
A-26	Monapo	Production of maize, bean, and seed	Land expansion	Yes	Yes	2.4	Medium	Medium
B-4	Lichinga	Production of vegetables	Inputs	Yes	Yes	0.3	Short	Medium
B-13	Cuamba	Production of crops	Land expansion, inputs	Yes	Yes	0.3	Medium	Medium
B-14	Cuamba	Production of crops	Land expansion, inputs	Yes	Yes	0.8	Medium	Medium
Farms using more than 31 ha of land								
A-1	Malema	Production of vegetables	Water pumps	Yes	Yes	0.6	Medium	Medium
A-2	Malema	Production of maize, and vegetables	A tractor, a truck	Yes	Yes	1.2	Medium	Medium
A-12	Rapale	Poultry farming	Water tanks	Yes	Yes	0.4	Medium	Medium
A-13	Rapale	Production of vegetables	Land expansion, irrigation facilities	Yes	Yes	1.2	Medium	Medium
A-14	Rapale	Production of crop and maize milling	Land expansion, maize milling facilities	Yes	Yes	3	Medium	Medium
A-15	Rapale	Production of cashew nut and vegetables	Land expansion, irrigation facilities	Yes	Yes	0.4	Medium	Medium
A-23	Meconta	Production of crops and poultry farming	A tractor, water containers	Yes	Yes	3	Medium	Medium
B-6	Chimbunila (Lichinga)	Production of maize, bean, and potato	A truck	Yes	Yes	0.4	Medium	Medium

Source: Study Team

2.2.5 Calculation of the Entire Credit Demand (Medium-Sized Farms)

The following are the estimation of the credit demand of the 19 farms interviewed by the Study Team:

(1) Number of farms: 19

(a) Number of farms that were not financially viable: 2

(b) Number of farms that provided the estimated loan amount they required: 17

(2) Loan amount

(a) Total of loan amounts required by the 17 farms: about MZN 22.0 million

(b) Average loan amount required: MZN 1.3 million [MZN 22.0 million / 17]

(3) Total loan demand (optimistic): MZN 98.8 million [MZN 1.3 million * 19 districts * 4 farms]

Table 2-20 Credit Demand (Medium-Sized Farms)

Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
MZN 98.8 million	MZN 65.9 million (51 farms)	MZN 32.9 million

Note: The loan amount calculated based on the findings from the survey is considered as an optimistic scenario because the farms visited by the Study Team were relatively well-established ones and located relatively close to the city/town centers of each district. They were selected based on the DPA/SDAE's recommendations. Given that there are very few farms, according to DPA/SDAE, that are in the similar or better financial conditions as the ones interviewed in the Study, four farms per district was used for calculation.
Source: Study Team

2.2.6 Socio-economic Impact

The socio-economic impacts of providing loans to small-medium sized farms are medium. The loans would provide employment opportunities for families living nearby while some of them also would contribute to improvements in neighboring families' agricultural techniques and skills and an increase in cultivated land through the providing of tractor services. Some farms visited by the Study Team reported that they teach production techniques for soybean and vegetables to neighboring small-scale farmers and students using a demo-plot.

As shown in Graph 2-2, the interviewed farms indicated four types of expected uses for the loans. Based on the interview results, the Study Team estimated that 50% of the total loan amount for farms would be used for land expansion, 30% for irrigation, 10% for improving market access (i.e. purchase of trucks) and the remaining 10% for other agricultural facility construction (e.g. seed shops, milling facilities, and storage).

- Land expansion and purchasing of inputs (seed, fertilizer, agricultural chemicals etc.) and tractors: 13 farms
- Improvement in irrigation (construction of dams and irrigation facilities, purchase of water-pumps): 9 farms
- Improvement in access to markets (purchase of trucks): 3 farms
- Facility construction (seed shops, broiler sheds, milling facilities, and storage): 3 farms

(Note: Many farms provided multiple answers. The numbers of farms do not include those that are deemed to lack financial viability.)

Source: Study Team

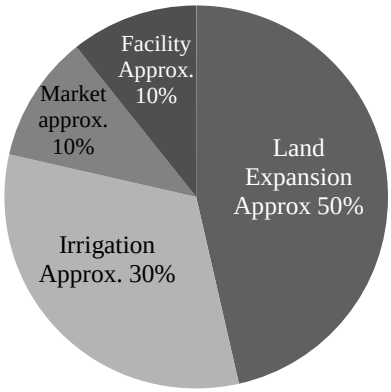


Figure 2-2 Expected Uses of the Loan (Medium-Sized Farms)

(1) Land expansion

1) Increase in crop production

Table 2-21 shows the estimated increases in production to be achieved from medium-sized farm investments in land expansion that would be realized through agricultural loans.

Table 2-21 Expected Increase in Production (Medium-Sized Farms: Land Expansion)

Items		Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
(i) Loan Amount (MZN)[1/]		49.4 million	33.0 million	16.5 million
(ii) Land area expanded and cultivated (MZN 30,000/ha)		1,647 ha	1,100 ha	550 ha
Increase in Production[2/]	45% of (ii) total land cultivated	741 ha	495 ha	248 ha
	Staple: 4.5 tonnes/ha (maize)[3/]	3,335 tonnes	2,228 tonnes	1,116 tonnes
	25% of (ii) total land cultivated	412 ha	275 ha	138 ha
	Vegetables: 29 tonnes/ha (tomato)[3/]	11,948 tonnes	7,975 tonnes	4,002 tonnes
	20% of (ii) total land cultivated	329 ha	220 ha	110 ha
	Pulses: 1.5 tonnes/ha (haricot bean) [3/]	494 tonnes	330 tonnes	165 tonnes
	5% of (ii) total land cultivated	82 ha	55 ha	28 ha
	Various nuts: 2.7 tonnes/ha (groundnut, w/shell) [3/]	221 tonnes	149 tonnes	76 tonnes
	5% of (ii) total land cultivated	82 ha	55 ha	28 ha
	Various seeds: 3 tonnes/ha (maize seed) [4/]	246 tonnes	165 tonnes	84 tonnes

1/ 50% of the total loan amount for medium-sized farms (See Table 2-20 and Figure 2-2)
2/ The breakdown of crops produced is based on Table 2-17.
3/ These yields can be achieved through improved farming practices according to the ProSAVANA-PD Interim Report (2).
4/ Based on the information provided by a company interviewed by the Study Team
Source: Study Team

2) Increase in employment

Table 2-22 shows the estimated increases in the employment of medium-sized farms to be achieved from investments that would be realized through agricultural loans.

Table 2-22 Expected Increase in Employment (Medium-Sized Farms: Land Expansion)

Items	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
Land area expanded and cultivated	1,647 ha	1,100 ha	550 ha
Number of permanent workers employed by agribusinesses (1 permanent worker per 8 ha[1/])	206 workers	138 workers	69 workers
Number of seasonal workers employed by agribusinesses (1 seasonal worker per 3 ha[2/])	549 workers	367 workers	183 workers

The following rates were applied as these farms were aiming to move up to middle- to large-scale agribusinesses
1/ The average land size per one permanent worker is 8.4 ha for foreign-owned middle to large sized companies and 8.3 ha for Mozambican owned companies. (See Tables 2-2 and 2-4).
2/ The average land size per one seasonal worker is 3.8 ha for foreign-owned middle to large sized companies and 2.0 ha for Mozambican owned companies. (See Tables 2-2 and 2-4).
Source: Study Team

(2) Irrigation

Seven of the 17 farms (41%) interviewed had the financial capacity and a plan to use loans to improve their access to water. Since the calculations for the entire loan amount are based on the assumption that 4 farms benefit in each of the 19 districts (76 farms), while 30 farms (40% of 76 farms) acquire improved irrigation facilities.

1) Increase in crop production

Table 2-23 shows the estimated increases in the production of medium-sized farms to be achieved from investments that would be realized through agricultural loans.

Table 2-23 Expected Increase in Production (Medium-Sized Farms: Irrigation)

Items		Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
(i) Number of the farms that use loans for irrigation		30 farms	20 farm	10 farm
(ii) Land area per farm[1/]		40.0 ha	40.0 ha	40.0 ha
(iii) Total land area used (i*ii)		1,200 ha	800 ha	400 ha
Increase in Production[2/]	45% of (iii) total land cultivated	540 ha	360 ha	180 ha
	Staple: 4.5 tonnes/ha (maize) * 2 seasons[3/]	4,860 tonnes	3,240 tonnes	1,620 tonnes
	25% of (iii) total land cultivated	300 ha	200 ha	100 ha
	Vegetables: 29 tonnes/ha (tomato) * 2 season	17,400 tonnes	11,600 tonnes	5,800 tonnes
	20% of (iii) total land cultivated	240 ha	160 ha	80 ha
	Pulses: 1.5 tonnes/ha (haricot bean) * 2 season	720 tonnes	480 tonnes	240 tonnes
	5% of (iii) total land cultivated	60 ha	40 ha	20 ha
	Various nuts: 2.7 tonnes/ha (groundnut) * 2 season	324 tonnes	216 tonnes	108 tonnes
	5% of (iii) total land cultivated	60 ha	40 ha	20 ha
	Various seeds: 3 tonnes/ha (maize seed) * 2 season	360 tonnes	240 tonnes	120 tonnes

1/ The average used land size of the farms interviewed is used for the optimistic scenario's land area. See Table 2-16.
2/ See Table 2-21 for yields.
3/ Double cropping
Source: Study Team

2) Increase in employment

Table 2-24 shows the estimated increases in employment to be achieved from investments in irrigation by medium-sized farms that would be realized through agricultural loans. By double cropping, it is estimated that the number of seasonal workers would double.

Table 2-24 Expected Increase in Employment (Medium-sized Farms: Irrigation)

Items	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
(i) Number of farms using loans for irrigation	30 farms	20 farm	10 farm
(ii) Seasonal workers per farm[1/]	18 workers	18 workers	18 workers
Total seasonal workers (i)* (ii)	540 workers	360 workers	180 workers

1/ The average number (18) of seasonal workers of the farms interviewed is used for the optimistic scenario's number of seasonal workers. See Table 2-18
Source: Study Team

(3) Purchase of trucks

Three of the 17 farms (17.6%) interviewed had the financial capacity and a plan to use loans to purchase trucks and improve their access to markets. While the purchase of trucks would contribute to an increase in farm profits, it would have limited impacts for production and employment.

(4) Others (construction of seed shops, broiler sheds, milling facilities, and storage facilities)

Three of the 17 farms (17.6%) interviewed had the financial capacity and a plan to use loans to construct various facilities ranging from seed shops to milling facilities.

Table 2-25 shows the estimated increases in employment to be achieved from investments in facility construction by medium-sized farms that would be realized through agricultural loans.

Table 2-25 Expected Increase in Employment (Medium-sized Farms: Facility Construction)

Category	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
Loan amount[1/]	MZN 9.9 million	MZN 6.6 million	MZN 3.3 million
Permanent workers[1/]	99 workers	66 workers	33 workers
Seasonal workers	297 workers	198 workers	99 workers

1/ 10% of the total loan amount for small- to medium-sized farms (See Table 2-20 and Figure 2-2)
2/ This calculation is based on 5 permanent workers and 15 seasonal workers per MZN 0.5 million.
Source: Study Team

2.3 Agribusinesses Engaged in Processing, Trading, and Retail

The Study Team visited 6 agribusinesses engaged in processing, trading and/or retail: 3 of which were engaged in the milling of maize and/or rice; 1 was engaged in processing of cashew nut; 1 was engaged in the processing of pigeon pea; and 1 was engaged in the trading of maize, pigeon pea and soybean. It should be noted that many of the companies engaged in processing (e.g. processing of

chicken feed and cashew nut processing) were also engaged in farming (e.g. soybean production and cashew nut production), and therefore counted and analyzed under the "farming (production)/livestock" section. Many of them were also engaged in purchasing crops (raw materials for processing) from farms. This is one of the key characteristics of the agricultural sector in the Nacala Corridor; sole companies often try to cover all steps of the value chain from farming and processing to retail.

2.3.1 Basic Profile

All 3 interviewed agribusinesses engaged in the milling of maize and/or rice were owned by Mozambican nationals. One of them is a company established under financial support from a well-established NGO; the company is in the pilot phase of establishing a franchise milling business model, which encompasses elements of processing and retail. The rest of the interviewed agribusinesses engaged in the processing of cashew or pigeon pea, or trading crops were funded and/or owned by foreign investors. The interviewed Mozambican-owned companies employed a small number of workers: 10 permanent workers on average without seasonal workers. In contrast, companies owned by foreign investors employed a large number of workers: from 26 to 100 permanent workers and from 80 to 700 seasonal workers.

Table 2-26 Ownership of and Number of Workers hired by Interviewed Agribusinesses Engaged in Processing, Trading and/or Retail

Category	Processing					Trading crops (1)
	Milling (3 companies)			Cashew (1)	Pigeon (1)	
Ownership	Mozambican			Foreign	Foreign	Foreign
Permanent workers	5	10	17	100	35	26
Seasonal workers	0	0	0	700	100	80

Source: Study Team

Agribusinesses engaged in the purchasing crops from farms, including the 2 companies that the Study Team interviewed, typically have so-called "collection points" where companies collect crops from farmers. A collection point can be a warehouse that a company owns or rents, or a house in a rural area that the company rents and pays the homeowner to look after the crops till the company collects them.

2.3.2 Financial Background

All 3 milling agribusinesses have milling equipment that they can present as collateral. 2 milling agribusinesses have recently received large-scale milling equipment on credit from the government. All 3 plan to venture into producing packed maize and/or rice. The 3 foreign-owned agribusinesses have substantial assets (e.g. commercial processing machines, warehouses, and trucks).

2.3.3 Constraints to Growth

There are two main inter-related constraints that agribusinesses engaged in processing, trading, and/or retail encounter: 1) insufficient and unreliable supplies and quality of crops (raw materials) for processing and/or sale; and 2) insufficient working capital to purchase crops. One of the milling companies interviewed by the Study Team plans to start farming (production) rice and maize by taking advantage of the fact that the company's owner's home district (Mecanhelas District) has land highly suitable for growing rice and is located in an ideal, strategic position for exporting crops to Malawi.

2.3.4 Credit Needs

Table 2-27 summarizes the expected uses of agricultural loans by agribusinesses engaged in trading, processing and retail that were visited by the Study Team. It also summarizes the loan amounts that they would like to obtain, their financial capacity, and the scale of the expected socio-economic impacts that the loans would bring about for surrounding communities.

Table 2-27 Credit Needs (Agribusinesses Engaged in Processing, Trading, and/or Retail)

	District	Purpose of the Loan	Expected Loan Uses	Financial Capacity	Needs	Amount (MZN, million)	Term	Socio-economic Impact
B-12	Cuamba	Processing of maize	Working capital to purchase maize	Yes	Yes	0.5	Short	Medium
B-15	Mecanhelas	Production and processing of maize, rice	Land expansion	Yes	Yes	6	Medium	Medium
C-5	Gurué	Trading of maize and pigeon pea	Working capital	Yes	Yes	15	Short	Small
C-7	Gurué	Franchising of maize milling	Milling equipment	N/A	---	---	---	---
A-19	Mogovolas	---	---	---	No	---	---	---
C-4	Gurué	---	---	---	No	---	---	---

Source: Study Team

2.3.5 Calculation of the Credit Demand Size

The following is the estimation of the credit demand of agribusinesses engaged in processing, trading and retail interviewed by the Study Team.

(1) Small- to medium- scale trading

Table 2-28 Credit Demand (Agribusinesses: Trading)

Optimistic Scenario	Baseline Scenario (8 agribusinesses per district; MZN 600,000 per agribusiness)[1/]	Pessimistic Scenario
MZN 136.8 million	MZN 91.2 million (152 businesses)	MZN 45.6 million

[1/] The Study Team assumes agricultural loans provided to eight agribusinesses per district (MZN600,000 per agribusiness) to be the baseline credit demand for trading. MZN 600,000 per agribusiness is close to the estimated required loan size reported by a medium-sized milling company in Niassa Province.

Source: Study Team

(2) Small- to medium- scale processing (e.g. maize/rice mill)

Table 2-29 Credit Demand (Agribusinesses: Processing)

Optimistic Scenario	Baseline Scenario (2 agribusinesses per district; MZN 900,000 per agribusiness)[1/]	Pessimistic Scenario
MZN 51.3 million	MZN 34.2 million (38 businesses)	MZN 17.1 million

1/ The Study Team assumes agricultural loans provided to two agribusinesses per district (MZN 900,000 per agribusiness) to be the baseline credit demand for processing. MZN 900,000 per agribusiness is the estimated required loan size for establishing a milling franchisee (small-medium sized maize mill) reported by an NGO supporting a milling franchise company in Nampula and Zambézia Provinces.

Source: Study Team

(3) Small- to medium- scale retail (e.g. small seed shops in a town-center)

Table 2-30 Credit Demand (Agribusinesses: Retail)

Optimistic Scenario	Baseline Scenario (2 agribusinesses per district; MZN 900,000 per agribusiness)[1/]	Pessimistic Scenario
MZN 51.3 million	MZN 34.2 million (38 businesses)	MZN 17.1 million

1/ The Study Team assumes agricultural loans provided to two agribusinesses per district (MZN 900,000 per agribusiness) to be the baseline credit demand for retail. MZN 900,000 per agribusiness is close to the estimated required loans for establishing a seed shop reported by a farm in Nampula Province.

Source: Study Team

2.3.6 Socio-economic Impact

The socio-economic impact of providing loans to agribusinesses engaged in processing, trading, and/or retail is small to medium. It provides employment opportunities and contributes to the

establishment of value chains with a greater number of actors involved, though not much technology transfer would be expected.

Table 2-31 shows the estimated increase in employment to be achieved from investments in trading, processing and retail by agribusinesses that would be realized through agricultural loans.

Table 2-31 Expected Increase in Employment (Agribusinesses: Trading/Processing/Retail)

Breakdown	Category	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
Trading [1/]	Seasonal	1,368	912	456
Small- to medium-scale processing[2/]	Permanent	513	342	171
	Seasonal	1,539	1,026	513
Small- to medium-scale retail[2/]	Permanent	513	342	171
	Seasonal	1,539	1,026	513

1/ The calculation is based on the employment of 1 seasonal worker per MZN 100,000 loan.
2/ The calculation is based on the employment of 1 permanent and 5 seasonal workers per MZN 100,000 loan.
Source: Study Team

2.4 Farmers' Organizations

The Study Team visited 10 farmers' organizations (4 in Niassa Province, 2 in Zambézia Province, and 4 in Nampula Province) and one brokers/traders' organization.

2.4.1 Basic Profile

Of the 10 farmers' organizations, 5 were registered as cooperatives, 4 were registered as associations, and 1 was in the process of being registered as an association. Most of the farmers' organizations visited by the Study Team were engaged in the collective purchasing/distribution of inputs (e.g. seed) and collective bargaining for their crops. Depending on the degree of support, all interviewed organizations have received financial and/or technical support from the government and/or donors (including NGOs).

Of the 10 farmers' organizations: 4 organizations had less than 25 members; 1 organization had between 101 and 500 members; 2 organizations had between 501 and 1,000 members; two organizations had between 1,001 and 2,500 members; and 1 had more than 2,501 members. The organizations with more than 100 members had a pyramid-shaped organizational structure, comprised of several levels of management (see Figure 1-2 "Example of an Organizational Structure of an Association").

Table 2-32 Number of Memberships

Memberships	0-25	26-100	101-500	501-1,000	1,001-2,500	2,501+
Number of organizations	5*	0	1	2	2	1
Average	16	0	220	529	1,654	5,237

* Includes one brokers/traders organization.
Source: Study Team

2.4.2 Financial Background

The financial background of most farmers' organizations is weak; they do not have substantial assets that can be used for collateral, are not fully financially self-sufficient since they are dependent on financial assistance from donors and/or the government, and lack human resources with sufficient financial management skills. For them to be bankable, they will need to have a strong business-minded management team with proper incentives who can then formulate a sound operational plan with sustainable revenue sources to cover their costs.

2.4.3 Constraints to Growth

In addition to a lack of human resources with sufficient management skills and a business mentality, some associations do not have secure market linkages for their members' produce.

2.4.4 Credit Needs

Table 2-33 summarizes the credit needs of the farmers' organizations visited by the Study Team. More specifically, it summarizes the expected uses of agricultural loans by the farmers' organizations, the loan amounts that they would like to obtain, their financial capacity, and the scale of the expected socio-economic impacts that the loans would bring about for surrounding communities.

Table 2-33 Credit Needs (Farmers' Organizations)

	District	Purpose of the Loan	Expected Loan Uses	Financial Capacity	Needs	Amount (MZN, mil)	Term	Socio-Economic Impact
B-11	Cuamba	Trading of members' produce	Purchase of crops from members	Yes	Yes	1.5	Medium	Large
C-10	Alto Molocue	Processing of maize	Milling equipment	Yes	Yes	2	Long	Large
A-4	Malema	Production of crops	Land expansion	No	---	---	---	---
A-10	Murrupula	Production of cassava and peanut	Land expansion	No	---	---	---	---
A-20	Mogovolas	Production of crops	Land expansion	No	---	---	---	---
A-21	Muecate	Production of crops and vegetables	Water pumps, inputs	No	---	---	---	---
B-3	Lichinga	Member services	A truck, a tractor, land expansion	No	---	---	---	---
B-8	N'gauma	Transport of members' produce	Truck rental	No	---	---	---	---
B-10	Mandimba	Warehouse operation	Warehouse	No	---	---	---	---
B-16	Mecanhelas	Production of soybean	Land expansion, rice mill	No	---	---	---	---
C-6	Gurué	Trading of members' produce	Warehouse	No	---	---	---	---

Source: Study Team

2.4.5 Calculation of Credit Demand

The following is the estimation of the credit demand of the 11 farmers' organizations (including 1 brokers' organization) interviewed by the Study Team.

(1) Number of farmers' organizations: 11

(a) Number of farmers' organizations that were not financially viable: 9

(b) Number of farmers' organization that provided the estimated loan amount that they required: 2

(2) Loan amount

(a) Total loan amounts required: about MZN 3.5 million

(b) Average loan amount required: MZN 1.75 million [(2)-(a) / (1)-(b)]

(3) Total loan demand (optimistic scenario): MZN 10.5 million

Table 2-34 Credit Demand (Farmers' Organizations)

Optimistic Scenario (2 farmers' organizations per province, MZN 1.75 million per organization)	**Baseline Scenario**	**Pessimistic Scenario**
MZN 10,500,000	MZN 7,000,000 (4 organizations)	MZN 3,500,000

Note: The loan amount is calculated based on the survey findings. The calculation (2 farmers' organizations per district) is set as the optimistic scenario because most famers' organizations interviewed by the Study Team were financially nonviable although the team visited prominent and relatively well-performing farmers' organizations recommended by DPA/SDAE.

Source: Study Team

2.4.6 Socio-economic Impact

Social impact of providing loans to farmers' organizations is high. Well-established farmers' associations could serve a large number of members and provide extension services, the collective purchasing of inputs, and collective bargaining.

The main uses of agricultural loans by farmers' organizations are collective bargaining (trading members' crops) and facility construction (e.g. milling facilities).

Table 2-35 shows the estimated increases in employment to be achieved from investments in trading and facility construction by farmers' organizations that would be realized through agricultural loans.

Table 2-35 Expected Increase in Employment (Farmers' Organizations)

Breakdown	Category	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario
Trading [1/]	Seasonal	53 workers	35 workers	18 workers
Pocessing[2/]	Permanent	53 workers	35 workers	18 workers
	Seasonal	263 workers	175 workers	88 workers

1/ The calculation is based on the employment of 1 seasonal worker per MZN 100,000 loan. It is estimated that 50% of the total loan amount for farmers' organizations will be used for trade.
2/ The calculation is based on the employment of 1 permanent and 5 seasonal workers per MZN 100,000 loan. It is estimated that 50% of the total loan amount for farmers' organizations will be used for constructing milling facilities.
Source: Study Team

2.5 Summary of the Credit Demand of the Agricultural Sector in the Nacala Corridor

Table 2-36 provides a summary of credit demand of the agricultural sector in the Nacala Corridor.

Table 2-36 Credit Demand of the Agricultural Sector in the Nacala Corridor

Category		Optimistic Scenario	Baseline Scenario		Pessimistic Scenario	%
		(MZN million)	(MZN million)	(number of businesses)	(MZN million)	
1	Agribusinesses engaged in farming	662.4	441.7	31	220.8	66%
2	Medium-sized farms	98.8	65.9	51	32.8	10%
3	Small- to medium-sized trading	136.8	91.2	152	45.6	14%
4	Small- to medium-sized processing	51.3	34.2	38	17.1	5%
5	Small- to medium-sized retail	51.3	34.2	38	17.1	5%
6	Farmers' Organizations	10.5	7.0	4	3.5	1%
	Grand Total	**1,007.8** (JPY 3,339 million)	**671.8** (JPY 2,226 million)	**314**	**336.0** (JPY 1,113 million)	**100%**

Source: Study Team

2.6 Summary of Increases in Crop Production

Table 2-37 provides a summary of the increases in crop production in volume and values to be achieved from investments that would be realized through agricultural loans. It is expected that a crop production value of MZN 642.5 million would be created as a result of agricultural loans in the baseline scenario.

Table 2-37 Summary of Increases in Crop Production in Volume and Value

(Unit: Volume: tonne, Value: MZN million)

Crop	Category (Loan Use)		Optimistic Scenario		Baseline Scenario		Pessimistic Scenario		Unit Selling Prices
			Volume	Value[4/]	Volume	Value	Volume	Value	
Soybean	Agribusinesses engaged in farming	Contract Farming[/]	10,017	-	6,710	-	3,308	-	Soybean: MZN 12.1/kg[1/]
		Land Expansion	2,650	-	1,766	-	884	-	
	Total:		**12,667**	**153.3**	**8,476**	**102.6**	**4,192**	**50.7**	
Other pulses	Agribusinesses engaged in farming	Contract Farming[/]	3,758	-	2,516	-	1,240	-	Pulses: MZN 14.3/kg (average selling price of: haricot bean (MZN 19.5/kg), mung bean (MZN 10.6/kg), and pigeon pea (MZN 12.8/kg) [1/]
		Land Expansion	994	-	662	-	332	-	
	Medium- scale farms	Land Expansion	494	-	330	-	165	-	
		Irrigation[/]	720	-	480	-	240	-	
	Total:		**5,966**	**85.3**	**3,988**	**57.0**	**1,977**	**28.3**	
Various seeds	Agribusinesses engaged in farming	Contract Farming[/]	10,017	-	6,710	-	3,308	-	Various seeds: MZN 19.8/kg (average selling prices: soybean (MZN 18/kg), groundnut (MZN 27/kg), cowpea (MZN 14/kg), pigeon pea (MZN 15/kg), sesame (MZN 35/kg), and maize (MZN 10/kg))[2/]
		Land Expansion	2,649	-	1,767	-	885	-	
	Medium- scale farms	Land Expansion	246	-	165	-	84	-	
		Irrigation	360	-	240	-	120	-	
	Total:		**13,272**	**262.8**	**8,882**	**175.9**	**4,397**	**87.1**	
Maize	Medium-scale farms	Land Expansion	3,318	-	2,211	-	1,107	-	Maize: MZN 4.2/kg[1/]
		Irrigation	4,860	-	3,240	-	1,620	-	
	Total:		**8,178**	**34.3**	**5,451**	**22.9**	**2,727**	**11.5**	
Vegetables	Medium- scale farms	Land Expansion	11,984	-	7,975	-	4.002	-	Vegetables: MZN 10.3/kg (average selling price of: onion (MZN 15.0/kg), tomato (MZN 7.1/kg) and cabbage (MZN 8.8/kg) [1/]
		Irrigation	17,400	-	11,600	-	5,800	-	
	Total:		**29,384**	**302.7**	**19,575**	**201.6**	**9,802**	**101.0**	
Sesame	Agribusinesses engaged in farming	Contract Farming[/]	2,504	-	1,677	-	827	-	Sesame: MZN 23.0/kg[1/]
		Land Expansion	663	-	441	-	221	-	
	Total:		**3,167**	**72.8**	**2,118**	**48.7**	**1,048**	**24.1**	
Various nuts	Agribusinesses engaged in farming	Contract Farming[/]	4,509	-	3,019	-	1,488	-	Various nut: MZN 9.4/kg (average selling price of groundnut (MZN 5.9/kg) and cashew nut (MZN 12.8/kg)) [1/]
		Land Expansion	1,191	-	794	-	397	-	
	Medium- scale farms	Land Expansion	221	-	149	-	76	-	
		Irrigation	324	-	216	-	108	-	
	Total:		**6,245**	**58.7**	**4,178**	**39.3**	**2,069**	**19.4**	
Grand Total:				**969.6**		**648.0**		**322.1**	

1/ ProSAVANA-PD Interim Report (1)
2/Based on interviews with seed companies by the Study Team
Source: Study Team

2.7 Summary of Increases in Employment

2.7.1 Permanent Workers

Table 2-38 provides a summary of the increases in employment of permanent workers to be achieved from investments that would be realized through agricultural loans. It is expected that an employment of approximately 10,000 permanent workers would be created as a result of agricultural loans in the baseline scenario.

Table 2-38 Summary of Increases in Employment of Permanent Workers

Category	Loan Use	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario	%
Agribusinesses engaged in farming	Contract farming[1/]	11,310	7,578	3,832	
	Land expansion	552	369	184	
	Construction	1,325	883	441	
	Sub-total	**13,187**	**8,830**	**4,457**	**90.5%**
Medium-scale farms	Land expansion	206	138	69	
	Construction	99	66	33	
	Sub-total	**305**	**204**	**102**	**2.1%**
Small- to medium-scale processing		**513**	**342**	**171**	**3.5%**
Small- to medium-scale retail		**513**	**342**	**171**	**3.5%**
Farmers' organizations		**50**	**35**	**18**	**0.4%**
Grand Total		**14,571**	**9,753**	**4,919**	**100%**

[1/] The number of extension workers is added to the number of permanent workers.
Source: Study Team

2.7.2 Seasonal Workers

Table 2-39 provides a summary of the increases in employment of seasonal workers to be achieved from investments that would be realized through agricultural loans. It is expected that employment of over 17,500 seasonal workers will be created as a result of agricultural loans in the baseline scenario.

Table 2-39 Summary of Increases in Employment of Seasonal Workers

Category	Loan Use	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario	%
Agribusinesses engaged in farming	Contract farming	13,648	9,146	4,502	
	Land expansion	1,472	981	491	
	Construction	3,957	2,649	1,323	
	Sub-total	**19,077**	**12,776**	**6,316**	**75.7%**
Medium-scale farms	Land expansion	549	367	183	
	Irrigation	540	360	180	
	Construction	297	198	99	
	Sub-total	**1,386**	**925**	**468**	**5.4%**
Small- to medium-scale trade		**1,368**	**912**	**456**	**5.4%**
Small- to medium-scale processing		**1,539**	**1,026**	**513**	**6.1%**
Small- to medium-scale retail		**1,539**	**1,026**	**513**	**5.9%**
Farmers' Organizations		**316**	**210**	**106**	**1.2%**
Grand Total		**26,188**	**16,875**	**8,372**	**100%**

Source: Study Team

Chapter 3 Banking Sector and Agricultural Loans in Mozambique

3.1 Overview of the Banking Sector in Mozambique and Lending to Agriculture

3.1.1 Overview of the Banking Sector

Seventeen financial institutions are currently operating in Mozambique under licenses from the Central Bank (Table 3-1). Four of them are microfinance banks, and the other banks serve the corporate and retail sectors. Three banks (United Bank for Africa Moçambique, Banco Terra, and Moza Banco) are new, established during the last five years while Banco Mercantil e de Investimentos (BMI) has been placed under Government control. All banks are foreign-owned with the exception of Moza Banco that has domestic, private majority shareholding.

The following are the major characteristics of the banking sector in Mozambique:[138]

- The largest three banks account for more than 80% of the total assets of the entire banking sector in Mozambique. Credit is concentrated in large, export-oriented corporations as well as trade and service activities in urban areas. Banks have difficulty with small-scale transactions in rural areas due to low cost-effectiveness and relatively high default rates.
- Due to limited competition, the loan- deposit interest margin[139] (currently 7.5-10% according to the central bank), although having declined recently, is larger than that of the comparable countries in the region. Overhead costs are mostly high due to a lack of competition and expensive labor costs.
- Banks rely principally on stable, retail deposits for funds, with foreign funds amounting to less than 1% of total assets as of September 2008, much lower than other countries in the region. With the loan-to-deposit ratio standing at 50-55%, excess funds are placed in liquid instruments domestically or abroad.
- Rural populations are underserved in terms of financial services; in 2008 branches in rural and peri-urban areas held roughly 20% of the number of credit and savings accounts as urban branches even though these areas accounted for over 60% of the country's inhabitants.

[138] This description is mostly based on the "Financial Sector Assessment Program", November 2009, a joint initiative of the World Bank and IMF.
[139] The Prime Lending Rate of the largest bank, BIM, was 16.25% as of January 2013.

Table 3-1 Commercial Banks in Mozambique

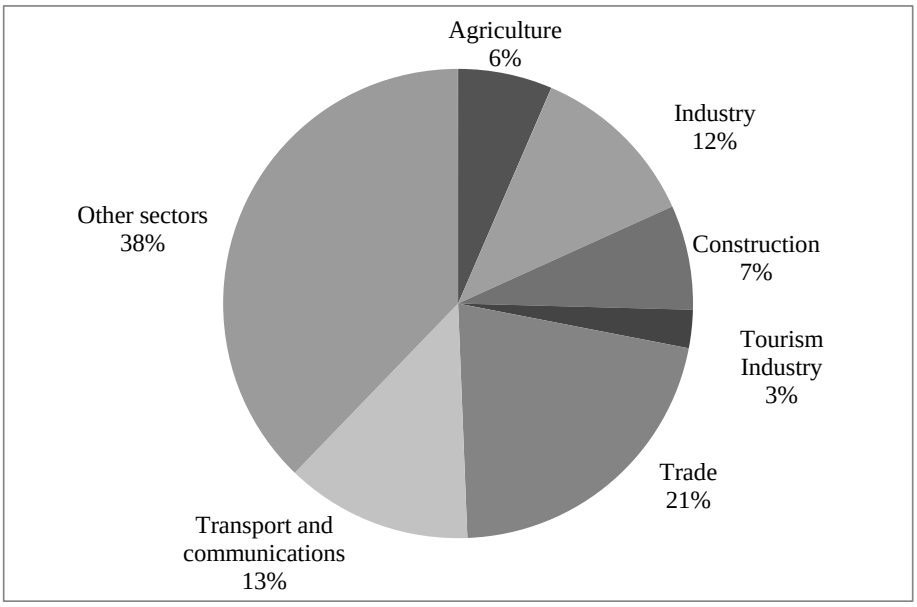
	Bank	Major Shareholders	Total Assets (MZN million, 2008)
1	Banco Internacional de Moçambique (Millennium BIM)	Banco Comercial Portugues (Portugal, 66.7%), Mozambican Government (17.8%)	35,477
2	Banco Comercial e de Investimentos (BCI)	Caixa Geral de Depositos (Portugal, 42.0%), Banco BPI (Portugal, 30.0%)	23,830
3	Standard Bank, SARL	Standard Bank (South Africa, 96.0%)	21,361
4	Barclays Bank Moçambique	Absa Group Limited (South Africa, 80.0%)	7,947
5	African Banking Corporation (ABC) Moçambique	ABC Holdings Limited (Botswana, 100.0%)	2,667
6	First National Bank Moçambique	FirstRand Group (South Africa, 80.0%)	1,856
7	Mauritius Commercial Bank Moçambique (MCB)	Mauritius Commercial (Mauritious, above 70.0%)	1,434
8	Banco ProCredit (former NovoBanco) (Microfinance Bank)	Procredit Holding Ag (Germany, 85.5%)	1,117
9	Sociedade de Crédito de Moçambique (SOCREMO) (Microfinance Bank)	Lonrho (UK, 51.0%), AfriCap Microfinance Fund (Senegal, 21.0%), GAPI (Mozambique, 11.0%), Nordic MicroCap (Sweden, 10.0%)	696
10	Moza Banco	Moçambique Capitais (Mozambique, 50.4%), BES-Africa (Portugal, 25.1%), Geocapital (Macao, 24.5%)	664
11	Banco Mercantil e de Investimentos (BMI)	Currently controlled by the Mozambican Government	378
12	International Commercial Bank (ICB)	ICB Banking Group Holdings Ag (Switzerland, 99.9%)	344
13	Banco Terra	Rabo Development (Netherland, 41.7%), Norfund (Norway, 27.51%), GAPI (Mozambique, 18.3%), KfW (Germany, 12.49%),	329
14	Banco Oportunidade de Moçambique (BOM) (Microfinance Bank)	Opportunity Transformation Investment Inc.(USA, 58.6%), Oikocredit Ecumenical Develop. Coop. Society U.A. (Netherland, 22.0%), Opportunity International Bank of Malawi (Malawi, 5.9%), Dennis Barsema (USA, 5.9%)	152
15	Banco Tchuma (Microfinance Bank)	Union	-
16	United Bank for Africa Moçambique	United Bank for Africa (Nigeria, 99.0%)	-
17	Banco Único	Amorim Group and Visabeira (Portugal, 72.0%), Instituto Nacional de Segurança Social de Moçambique and others (Mozambique, 28.0%)	-

Source: Study Team

There has been a recent increase in competition in major towns and provincial capitals with a dramatic increase in the number of banks over the last five years; the two largest commercial banks (BIM and BCI) have undertaken an aggressive expansion campaign in the countryside to collect more deposits. As a result of increased competition and a lack of liquidity, some banks are now remunerating deposits at higher rates than the central bank reference rate.[140] Banks have also increased their national coverage significantly over the last few years; Mozambique has 58 serviced districts (45%) out of 128 versus 28 at the end of 2006, while the number of branches increased from 228 to 416 over the four years (2006-2010).

3.1.2 Lending to Agriculture

Although most commercial banks in Mozambique are interested in increasing agricultural credit, actual lending to agriculture has been considerably limited due to high risks associated with climate change, the insufficiency of the bank's technical knowledge of agriculture, and a lack of collateral in rural areas (land cannot be used as collateral since it is State-owned). Credit to agriculture accounts for only 6% of total credit in the country (Figure 3-1), although agriculture comprises more than a fourth of Mozambican GDP. As Table 3-2 shows, the volume of lending in the Mozambican economy tripled in constant value terms from 2000 to 2010; however, credit to agriculture remained nearly constant over that period.



Source: INE (IPC) and BoM, derived "Agribusiness Indicators: Mozambique", World Bank, April 2012

Figure 3-1 Share of Credit Amount by Sector (2010)

[140] "Agribusiness Indicators: Mozambique", World Bank, April 2012

Table 3-2 Credit in the Economy in Constant (2000) MZN by Sector

Sector	Volume of credit (MZN thousand)		Increase in lending (%)
	2000	2010	
Agriculture	21,362,391	21,438,666	0.4
Industry	32,526,641	38,700,718	19.0
Construction	4,966,941	23,780,940	378.8
Tourism Industry	2,064,762	8,667,756	319.8
Trade	21,344,171	70,393,730	229.8
Transport and communications	5,642,656	42,316,332	649.9
Other sectors	20,321,498	124,784,703	514.1
Total	108,229,059	330,082,845	205.0

Source: INE (IPC) and BoM, derived from "Agribusiness Indicators: Mozambique", World Bank, April 2012

The majority of microfinance institutions, such as Banco Procredit and Socremo, is focused on trade and services in urban areas. While only Banco Oportunidade de Moçambique (BOM), among four microfinance banks, is proactively engaged in lending to the agriculture sector, its credit amount in agriculture accounts for less than 10% of the bank's total lending. According to the agricultural census, only 2.3% of farms have access to some type of credit, of which 5.7% are receiving a loan from banks.[141]

Table 3-3 Number of Credit in Agriculture in Mozambique

Lending institutions	No. of credit	Share (%)
Banks	5,022	5.7
Credit Cooperatives	7,397	8.4
Inputs Providers	36,480	41.5
Self-help Groups	2,782	3.2
Relatives and Friends	4,538	5.2
Government	14,024	15.9
Others	17,731	20.2
Total	87,974	100.0

Source: Agricultural Census 2009-2010、INE

The following table summarizes the observations on the main indicators of agricultural finance in Mozambique.

[141] "Inputs Providers" and "Others" seem to include a significant number of suppliers' credits for tobacco companies.

Table 3-4 Summary of Observations on Agricultural Finance in Mozambique

Indicators	Observations
Percent of commercial bank lending to agriculture	6.5% (includes crops, livestock, forestry, and fishing) (2010); down from 9.4% (2008) and 7.4% (2009)
Commercial bank interest rates (average interest rates offered by banks for loans to agriculture)	23-30% (prime + 7%, thus most borrowers are subject to 28-30% rates) Preferential MFI rates are 3.0-3.5% per month Normal MFI rates are 4.5-6% per month The lending rate of subsidized government credit lines is 10%
Interest rate spread	Rates paid to depositors range from 8% (simple savings account) to 17% (for larger term deposits), thus the spread is from 6% to 22%. Assuming most depositors earn 8-10%, the spread for them narrows to 13% to 22%.

Source: "Agribusiness Indicators: Mozambique", World Bank, April 2012

3.2 Mozambican Government's Policy towards Agricultural Credit

The Mozambican Council of Ministers approved the new Strategic Plan for Agricultural Development (Plano Estratégico Para o Desenvolvimento do Sector Agrário: PEDSA 2011-2020) on May 3, 2011. The overall objective of the Plan is to increase food security and the income of agricultural producers in a competitive and sustainable way, guaranteeing social and gender equity. PEDSA sees great potential in the expansion of commercial agriculture as well as the supplying of the growing internal and urban market for food. Among other things, increased access to agricultural credit is emphasized as a means to achieve these objectives More specifically, the following activities are listed in PEDSA for implementation.

Table 3-5 Mozambican Government's Policy towards Agricultural Credit

Result 1.7: Agricultural mechanization and the use of efficient technologies increased
➢ Increase access to credit on accessible terms for farmers and suppliers for agricultural equipment
Result 2.4: Value added to agricultural and animal products
➢ Facilitate access to credit for entrepreneurs
Result 2.6: The capacity of actors at each stage of the value chain improved so that they can participate in domestic and international markets (farmers, processors of agricultural producers, traders)
➢ Increase lines of credit for agricultural businesses ➢ Create special lines of funding for young farmers ➢ Promote the tripartite credit model (bank, producers and agro-industry) to minimize risks ➢ Promote agricultural insurance ➢ Expand and speed up the Guarantee Funds initiative for agriculture ➢ Support the beneficiaries of agricultural credits and District Development Funds (FDD) with technical information and advice for developing agricultural businesses
Result 2.7: Private sector capacity to provide agricultural inputs improved (seed, fertilizer, agro-chemicals, veterinary medicines, instruments, implements and machinery)
➢ Facilitate access to credit for agricultural traders

Result 5.1 Farmer organizations strengthened
➢ Facilitate the access of farmer organizations to credit through mechanisms such as guarantee schemes in collaboration with local financial institutions.

Source: PEDSA 2011-2020

The above statements emphasize the importance of improved access to credit and the establishment of guarantee schemes for all players (i.e. farmers, farmers' organizations, agribusinesses, input suppliers, etc.) within each agricultural product value chain, as well as the necessity of integrated approaches, such as collaboration between relevant organizations and the provision of technical support. Following this policy orientation, MINAG has provided credit and guarantee facilities through the District Development Fund, the Agricultural Development Fund (lending through DPA and lines of credits through commercial banks), the National Guarantee Scheme, the details of which are explained in the subsequent section.

3.3 Agricultural Financing Schemes in Mozambique

Under the Mozambican government and donor community's initiatives, the following financing schemes have been provided for agricultural development in Mozambique.

3.3.1 District Development Fund

District Development Fund (FDD) is a lump sum budget allocated by the central government to each district (MZN 7 million) for implementing district development projects subject to consultation with the community and District Councils. While FDD was originally meant for public investment projects, such as the construction of roads and schools, the government later reoriented the utilization of FDD for loans to rural communities so that the fund is used to improve food security through increased crop production.

Within the FDD's framework, low interest loans, ranging from 10% to 12% per year, have been disbursed to local associations and selected individuals. However, FDD's management has been very weak mostly due to an insufficiency in the District Consultative Council's capacity to manage the fund as well as improper political interference in the allocating of loans. Moreover, many borrowers in rural areas consider the money from the government as a simple "grant" that they do not have to repay, especially since no penalty is applied against delinquent borrowers. As a result, the FDD's repayment rate has been extremely poor, generally less than 20%.

3.3.2 Agricultural Development Fund

The Agricultural Development Fund (FDA) is a governmental financial institution under MINAG (see Appendix 3 for FDA's organization chart). The Fund has 90 staff, of which 60% are technical staff. In terms of agricultural credit, FDA has two types of operations: (a) loans from its own revenue sources provided through DPA; and (b) loans from external sources provided through commercial banks.

FDA is principally operated with its own revenue (MZN 300 million annually), 80% of which is royalties from forestry operations and 20% of which is fee revenues related to agriculture and animal husbandry. 30% of the budget is spent for operation costs such as administration and transport costs, 40% is used for agricultural credit such as the purchase of tractors, 20% is used for reforestation activities, and the rest is used to support other activities including animal husbandry. The interest rate on the agricultural credit is 10% per annum with collateral being required. However, due to the fact that all lending is conducted through DPA, which in many cases does not have ownership of the program, and that no strict law enforcement is applied against delinquent borrowers, the repayment rate remains extremely low.

The second category of loans (external sources) includes several lines of credit, such as a "Revolving Fund" (originally USD 7 million provided by USAID) ceded by the Ministry of Commerce and Industry, and a "Horticulture Fund" (MZN 25 million) and a "Poultry Fund" (MZN 50 million) received from MINAG. FDA has also been implementing a series of "Commodity Aid" programs financed by the Italian Cooperation; in the most recent program that began in 2013 (EUR 7 million), agriculture machinery are being leased to 18 agriculture service companies/farms throughout the country.

In the framework of the Horticulture Credit Line that started in 2011, FDA has provided loans to farmers along the Limpopo River with a fixed interest rate of 10% per annum (loan size is between MZN 200,000 and MZN 1 million) through intermediary banks (BIM, BCI, and CPL). The loans are used to grow tomato, cabbage and pepper. With a view to encouraging intermediary banks to extend loans to farmers lacking a credit history or sufficient collateral, FDA entered into an agreement with banks with the condition that all interest revenues would be retained by the banks and 65% of the losses incurred from defaulted loans would be compensated for by FDA. The Ministry of Agriculture has provided a budget to FDA to cover the FDA's operation costs as well as the compensation for losses.

The appraisal and monitoring system for the above lines of credit is as follows:

(a) FDA provided DPA's extension workers with standard tables (templates) to be used for calculating the inputs and outputs of farming activities;
(b) Farmers (i.e. applicants) prepare a business plan, including the above tables with the assistance of extension workers, and submit it with a loan application to one of the intermediary banks;
(c) After collecting the necessary information, such as the availability of collateral, the bank submits a loan application document to FDA (usually within a week of the receipt of the application);
(d) FDA's staff conducts due diligence activities (visits the applicant and verifies all the conditions necessary for the successful implementation of the sub-project [usually within a week of the receipt of the application from the bank]);
(e) A Program Committee meeting, composed of the representatives from MINAG, the Ministry of Commerce and Industry (in the case of the Revolving Fund), CEPAGRI and FDA, is held (once or twice per month) to decide on each application. Reports from the FDA staff who conducted the due diligence will be given due consideration therein;

(f) After a loan is approved and a loan contract is signed, the money is transferred from the "mother bank" (a representative bank that keeps the entire fund) to the intermediary bank that has signed the loan contract with the borrower;
(g) The bank sends the amortization schedule, which was agreed upon with the applicant as part of the contract, to FDA, where it is then incorporated into FDA's database;
(h) The loan principal is repaid directly to FDA, while the interest is paid to the bank. FDA updates its database upon each payment; and
(i) FDA staff periodically visit the borrower to conduct monitoring and provide advice.

While there have been several cases of significant delays in data transfers from banks to FDA, the overall lending operation of the lines of credit is considered to be successful; according to the FDA's database, 89% (MZN 10.8 million) of the disbursed loan amount (MZN 12.1 million) of the Horticulture Credit Line was repaid as of December 2012.

3.3.3 AgDevCo and Beira Agricultural Growth Corridor

AgDevCo[142] is a not-for-profit agricultural development company operating in sub-Saharan Africa. AgDevCo acts as a "social venture capital" in creating commercially viable agribusiness investment opportunities, bringing them to the point where they can attract private investment from domestic and overseas investors. In the Beira Corridor, AgDevCo is investing in 12 projects by utilizing financial resources received from DFID, the Governments of Netherlands and Norway, and the World Bank.

In Mozambique AgDevCo manages a USD 22 million Catalytic Fund, a social venture capital fund targeting start-up SME agriculture businesses in the Beira Agricultural Growth Corridor (BAGC) region. AgDevCo focuses on larger irrigation projects and corporate partnerships (e.g. with Olam and SAB Miller) that can more readily achieve large-scale impacts.

AgDevCo's approach is to bundle affordable finance and hands-on business development support so as to create clusters of mutually supporting SME agriculture businesses. The Catalytic Fund has already made a number of debt and equity investments in Mozambican agriculture businesses. For example, the Empreza de Comercializacao Agricola (ECA), a small farmer commercialization company, which links farmers to profitable markets, achieved a 99.9% repayment rate in its first season on inputs provided to 850 farmers for seed and fertilizer. ECA has signed a three-year sales agreement with Cervejas de Moçambique (SAB Miller) worth USD 3 million which will allow it to expand to 5,000 farmers within three years.

3.3.4 GAPI

The Friedrich Ebert Foundation (FEF) from Germany in 1984 started a small project for the promotion of small industries in order to stimulate local economic development. This project became known by its Portuguese abbreviation "GAPI": "Gabinete de Consultoria e Apoi à Pequena Industria". In 1990 GAPI was converted into a financial institution with the Friedrich Ebert Foundation (30%) and the

[142] AgDevCo is a UK-based company, currently funded by private individuals, the Rockefeller Foundation and the Hewlett Foundation.

state development bank BPD (70%) as owners. BPD was privatized in 1997 and its shares assigned to the Ministry of Finance. In 1999 GAPI was officially and legally registered as a joint-stock company under the oversight of the banking supervisory authority. Its equity capital is currently held by the Ministry of Planning and Finance (30%), GAPI staff (40%), the Community Development Foundation in Mozambique (15%), and the Mozambican Red Cross (15%). GAPI's main financial products are loans to SMEs, wholesale credit for micro-credit institutions (MFIs), and venture capital. These services are complemented with business and management training services. GAPI provides its services through its 9 regional offices spread throughout the country.

GAPI also provides financial services to rural agribusiness enterprises and farmers' organizations by offering loans with slightly lower interest rates than those of other financial institutions. The main characteristics of GAPI's lending approach are the combining of credit with business support services (thus improving the ability of borrowers to repay), support of the whole supply chain in which borrowers operate, and the development of partnerships with other organizations.[143] GAPI provided IKURU with a USD 200,000 fund for the construction of warehouses and technical assistance in warehouse management. This fund created stocks in warehouses that served as collateral for commercial banks, realizing loans totaling USD 400,000 for 8,000 farmers.

3.3.5 National Guarantee Scheme

The "National Guarantee Scheme" (part of DANIDA's AGROINVEST program) aimed at promoting agricultural loans throughout the country is in the process of being created for management by GAPI. While 50% of the individual loan amounts can be covered by the DANIDA's fund (total size of the fund: EUR 12 million), coverage can be increased if the Government tops up the scheme with its own budget. When a guarantee is applied for, GAPI's staff will conduct an appraisal and a fee will be added onto the interest to the borrowers. The scheme will eventually be incorporated and owned by Mozambican commercial banks.

3.3.6 Agriculture Guarantee Fund by AGRA and Agricultural insurance

The Alliance Green Revolution in Africa (AGRA), in partnership with CEPAGRI[144] (representing MINAG), in 2010 signed an agreement with Standard Bank in Mozambique to provide guarantees[145] of up to 10% of the total amount of agricultural credit (i.e. a USD 2.5 million guarantee against a total of USD 25 million in agricultural credit). Standard Bank's policy for those funds is to channel the credit to smallholder farmers through "aggregators," either commercial companies or farmers' associations. When a loan is guaranteed in this framework, 3 percentage points goes towards the

[143] Simonetti, Robert., Wuyts, Marc., and Wuyts-Fivawo, Anna., 2007. "Banking on Rural Innovation for Poverty Reduction: A Case Study of Value Chain Lending in Mozambique". The European Journal of Development Research 19 (1)

[144] Although CEPAGRI is required in this framework to recommend consultants who are capable of preparing business plans for agribusinesses, this has not materialized since no consultant could submit a paper that proves their capability of preparing a business plan.

[145] A term deposit for the guaranteed amount is provided to the Standard Bank in the borrower's name, which will be paid off in case of compensation.

guarantee and 6 percentage points towards weather index insurance (provided by SANTAM, South Africa), the sum of which is added to the normal lending rates. This arrangement has resulted in a realization of USD 2 million of agricultural loans nationwide. However, when actual compensation was claimed for a loan guaranteed through this scheme, AGRA refused to make payment, maintaining that the default was the result of the negligence of due diligence on the bank's side. Standard Bank stopped using this guarantee fund after that incident.

3.3.7 USAID/Development Credit Authority Guarantee Fund[146]

USAID's Development Credit Authority (DCA) Guarantee Fund guarantees up to 50% of the total amounts of individual loans; no other guarantee fund is accepted to be combined with the DCA Guarantee Fund, and thus other collateral /risks must be covered by the bank/clients. The fund is available for seven years and can cover loans of up to five years. This DCA Guarantee Fund has concluded agreements with BOM[147] and Banco Terra. The maximum guarantee that can be applied to individual loans is USD 1 million with no subsidized interest rates (23–25%). Banco Terra has a total loan portfolio equivalent to USD 4,540,000 realized through the DCA Guarantee Fund (meaning that USD 2,280,000 of funds are guaranteed). Banco Terra used USD 1 million of its guarantee fund portfolio for 105 rice farmers in Chókwè District, Gaza Province, where repayment has been very low due to excessive rain during planting and bad irrigation scheme management (drainage problems).

3.3.8 BOM

BOM (Banco Opportunidade de Mozambique) is a micro-finance institution providing microfinance services to economically active poor since 1971. BOM is a part of the Opportunity International Network that has USD 564 million in loan assets and provides financial services and training to over 2.5 million people in 24 countries in Africa, Eastern Europe, Latin America, and Asia. BOM began its operations in Mozambique in 2005 as a commercial bank merging the portfolios of existing programs: CARE, MEDA and World Vision. Financing agriculture started as a pilot project in 2010 in the central western part of Mozambique with180 farmers.[148]

In order to reduce costs and better manage the value chain, BOM builds relationships with inputs suppliers, extension service providers, buyers, and agribusinesses. For instance, BOM partners with local suppliers to provide quality seed and fertilizer, and with NGOs and farmers' groups to provide financial literacy education as well as training in maximizing output through good agricultural

[146] Agribusiness Indicators: Mozambique, World Bank

[147] BOM is utilizing the DCA Facility to extend loans to farmers under out-growing contracts. According to BOM, the annual fee to DCA is USD 7,500, plus 0.5 percentage point is added to individual loans (Farmers do not know that their loans are guaranteed).

[148] Nunes, Vasco., 2012. "Banco Oportunidade de Mozambique (BOM). Agriculture Finance Model". Financing Agriculture Forum, 2012. March 28-30. Kampala, Uganda

practices. BOM also helps facilitate contractual arrangements with buyers and agribusinesses to buy farmers' crops, which reduces price risk and enhances production quality.[149]

The number of BOM customers was 4,000 in 2011. In terms of the number of loans per crop type, 80% of loans are lent to rain-fed crops (maize and soybean) and 20% of loans are lent to horticulture crops. BOM is currently aiming to develop new business in new value chains, such as that of soybean, poultry, livestock, sugarcane, and fruits.[150]

3.4 Major Commercial Banks Interested in Japan's TSL

The Study Team visited all commercial banks to determine their interest in becoming an intermediary institution for Japan's TSL in the Nacala Corridor, should it be realized. The following table shows the response of each commercial bank in relation to their willingness to participate in TSL.

Table 3-6 Commercial Banks' Response towards Japan's TSL

	Bank	Response
1	Millennium BIM	Interested
2	BCI	Interested
3	Standard Bank	Interested
4	Barclays Bank	Interested
5	ABC	Interested
6	FNB	Not interested
7	MCB	Not yet active in the north
8	Banco ProCredit (Microfinance Bank)	Target clients would be different
9	SOCREMO (Microfinance Bank)	Target clients would be different
10	Moza Banco	Not yet active in the north
11	BMI	-
12	ICB	Interested, just starting operations in the north
13	Banco Terra	Interested
14	BOM (Microfinance Bank)	Not interested
15	Banco Tchuma (Microfinance Bank)	Target clients would be different
16	United Bank for Africa Moçambique	Not yet active in the north
17	Banco Único	Interested

Source: Interviews by the Study Team

The following table provides the financial indicators of those banks that showed interest in participating in Japan's TSL and then provided the Study Team with their financial statements.[151]

[149] Opportunity International, 2012. "Agricultural Finance, The Opportunity Difference". [Online] Available at: <http://www.opportunity.org/media-center/knowledge-exchange/#.UKOc_uSMqTk>

[150] Nunes, 2012.

[151] In spite of the Study Team's requests, other bank's financial statements could not be obtained.

Table 3-7 Financial indicators for Prospective Intermediary Banks for Japan's TSL

Indicator \ Bank	BIM	BCI	Standard Bank	Barclays Bank	Banco Terra
	2011	2011	2011	2009	2011
Number of branches	138	120	38	59	n.a.
Number of employees	2,230	1,707	867	Over 1,000	n.a.
Number of customers (thousand)	1,024	409	n.a	408	n.a.
Total assets (MZN million)	60,889	50,839	34,711	8,634	1,685
Total amount of deposits (MZN million)	47,576	37,443	27,510	5,937	714
Total amount of loans (MZN million)	34,192	32,106	12,756	3,690	1,046
Shareholders' equity (MZN million)	10,137	4,120	5,206	691	329
Net operating income (MZN million)	7,873	3,986	3,814	549	175
Operating costs (MZN million)	3,101	2,606	1,962	472	392
Net income before tax (MZN million)	3,418	1,141	1,719	57	-266
Loan-deposit ratio	71.9%	85.7%	46.4%	62.2%	146.5%
Capital-to-asset ratio	16.6%	8.1%	15.0%	8.0%	19.5%
Non-performing loan ratio (after provision)	1.7%	1.1%	1.0%	n.a.	41.5%
Return on equity ratio	33.7%	27.7%	33.0%	8.2%	-80.9%
Return on asset ratio	5.6%	2.2%	5.0%	0.7%	-15.8%
Efficiency ratio (Operating cost / Net operating income)	39.4%	65.4%	51.4%	86.0%	224.0%

Source: Each bank's audited financial statements

The three largest banks (BIM, BCI and Standard Bank) have displayed high profitability and solvency. Barclays Bank's profitability is much lower than that of the largest three banks although none of the figures show any negative indications in its financial performance; more recent data should be obtained when considering the bank's participation in Japan's TSL. The Banco Terra is a new financial institution established in 2008. Its large operational costs in contrast to its net operating income as well as its large amount of non-performing loans are indicative of the bank's poor financial performance. Its solvency in 2011 was secured through an injection of capital by its major shareholders (Rabo Development[152] and Norfund[153]). The bank's financial statements in 2012 as well as its turnaround strategy need to be examined when the bank's participation in Japan's TSL is considered.

[152] Rabo Development is a subsidiary of Rabobank (established in 1898), a Dutch based cooperative financial service provider. Rabo Development's mission is to provide developing societies with improved access to financial services, employing cooperative principles and banking expertise. Through Rabo Development, Rabobank has purchased interests in several emerging banks, including Mozambique's BancoTerra. Source: Derek Loosvelt and the Staff at Vault "Vault Guide to the Top 25 Banking Employers" 2009 Rabobank, <https://www.rabobank.com/en/ir/japanese.html>

[153] Norfund, the Norwegian Investment Fund for Developing Countries, is a private equity and venture capital firm. It invests in the establishment and development of profitable and sustainable enterprises in developing countries. Norfund is owned by the Norwegian Government and serves as a key instrument in Norwegian development policy. Source: Bloomberg Businessweek, "Company Overview of Norfund" <http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapId=1475841> Norfund <http://www.norfund.no/about-norfund/category296.html>

Chapter 4 Proposed Design of the Agricultural Loan in the Nacala Corridor

4.1 Proposed Conditions for Japan's Two Step Loan in the Nacala Corridor

JICA is currently examining the possibility of providing a Two-Step Loan to the Mozambican Government. The following are the conditions proposed by the Study Team for TSL in the Nacala Corridor and the reasoning behind those conditions. (It is highly recommended that after these conditions are applied to TSL, they should be revisited every several years so that they are adjusted to the economic circumstances at those times.)

4.1.1 Interest Rate and Revenue Sharing

The interest rate to be applied to end-users needs to be carefully determined from the perspectives of impact and sustainability.

For the upper limit of the interest rate, the rate should not overly exceed the level of the current subsidized rate (10% per annum) for agricultural credit; otherwise, it would discourage farmers and agribusinesses from making capital investments through agricultural loans. It is envisaged that agriculture in Mozambique, like that in any other African countries, will encounter various losses caused by mostly uncontrollable issues such as thefts, diseases and poor work-ethics. Even when a 15% profit margin is expected, the actual profit margin after covering the costs of unexpected losses may be lower than 10%. As such, applying a subsidized rate is indispensable to encouraging investments in agriculture in the Nacala Corridor.

For the lower limit of the interest rate, although all borrowers would like the lending rate to be as low as possible, the rate should be maintained at above the inflation rate (estimated at 7.2% in 2012 by the World Bank) in order to avoid arbitrage situations where borrowers can, for example, gain profits simply by investing money into inventories, such as agricultural inputs, and waiting for their prices to increase, or putting money in a bank's savings account to earn interest. This argument is supported by JICA's past experiences in two-step loans in which overly low interest rates led to investment in unproductive activities.

Table 4-1 Consumer Price Index and Standing Lending Facility Rate in Mozambique

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Consumer Price Index (%)[*1]	16.8	13.5	12.6	6.4	13.2	8.2	10.3	3.3	12.7	10.4	2.1	5.4
Lending Facility (%)[*2]	-	-	-	-	-	-	15.5	14.5	11.5	15.5	9.5	-

Source: [*1] IMF (Estimated value from 2012), [*2] Banco de Mozambique (year end)

Intermediary banks' behavior associated with the loan scheme's profitability[154] should also be given due consideration when determining the lending rate as well as the revenue sharing between the banks and the implementing agency; if the expected revenues from lending operations for banks are too low due to a low interest rate, a low commission rate or unfavorable revenue sharing arrangements, banks will only want to lend to relatively large projects in order to squeeze the lending costs.

Careful attention should also be paid to the Mozambican Government's budgetary constraints. There is considerable uncertainty concerning how much subsidies the Mozambican Government can pay in order to support the scheme should the interest revenues from end-users not be sufficient to cover the scheme's entire costs given that both the implementing agency and intermediary banks need to be properly remunerated with reasonable revenues.

The FDA's Horticulture Fund adopted an arrangement whereby all interest revenues were retained by the intermediary banks. This arrangement was deemed to be appropriate given the relatively small loan sizes of the Horticulture Fund (i.e. between MZN 200,000 and MZN 1 million). As the cost-effectiveness of a lending operation generally increases in proportion to the size of the loans, the intermediary banks' profit share can therefore be reduced for large-sized loans. The advantage of this arrangement is that intermediary banks will be motivated to lend to small businesses while a specific level of revenue to the implementing agency will be ensured. The following is a recommended revenue sharing arrangement between intermediary banks and the implementing agency, which is indexed to the loan size:

Table 4-2 Recommended Revenue Sharing Arrangement

Loan Size	Intermediary Bank's Revenue	Implementing Agency's Revenue
From MZN 200,000 Up to MZN 3 million	80% of the interest	Remaining amount of the interest
Above MZN 3 million Up to MZN 10 million	MZN 240,000 + 60% of the interest for the amount above MZN 3 million	
Above MZN 10 million Up to MZN 30 million	MZN 660,000 + 40% of the interest for the amount above MZN 10 million	

Source: Study Team

Under the above arrangement, an intermediary bank will receive approximately 50% to 80% of the interest, while the implementing agency will receive 20% to 50% of the interest, depending on the size of the loan.

The following is an estimate of the expected interest revenues for intermediary banks and the implementing agency, calculated based on the average amount of credit demand per business for each

[154] While there is an argument in relation to which "commission" and "interest" should be applied as the intermediary banks' revenue, it should be noted that there is practically no difference in the application of these two elements since the revenues of the intermediary banks will be otherwise determined as a percentage of the amount of the disbursed loans.

category of agribusinesses / farms (Tables 2-7, 2-20, 2-28, 2-29, 2-30, and 2-34) should the above-mentioned revenue sharing arrangement be adopted under the baseline scenario:

Table 4-3 Expected Revenues for the intermediary Banks and Implementing Agency

Category of businesses	Total Credit Demand (MZN million)	Number of Businesses	Average Credit Demand (MZN million)	Intermediary Bank's Revenue (MZN million)	Implementing Agency's Revenue (MZN million)
Agribusiness engaged in farming	441.6	31	14.4	25.9	18.3
Medium-sized farms	65.9	51	1.3	5.3	1.3
Small- and medium-sized trading	91.2	152	0.6	7.3	1.8
Small- and medium-sized processing	34.2	38	0.9	2.7	0.7
Small- and medium-sized retail	34.2	38	0.9	2.7	0.7
Farmers' Organizations	7.0	4	1.75	0.6	0.1
Total	671.8 (JPY 2,226 million)	314	-	44.5 (JPY 147 million)	22.9 (JPY 76 million)

Source: Study Team

It should be noted, however, that although the above revenue would be able to cover the TSL's operation costs, it may not be sufficiently large to cover losses from defaulted loans. In exchange for providing low interest loans to the agriculture sector, a high-risk business environment, the Mozambican Government should provide for a certain level of depletion of either the original fund or the guarantee fund (mentioned in Section 4.1.6 "Loan Guarantee").

4.1.2 Repayment Period and Grace Period

Some types of infrastructure, such as irrigation facilities, processing factories or warehouses, take time to construct, and moreover, these investments often require a significantly long period of time to recover their costs. Therefore, it is advisable that a longer repayment period (up to 10 years) be applied to such sub-projects, contingent on the expected cash flow. Depending on the timing of the cash income to be generated from the sub-project, a grace period should also be given, such as principally up to three years.[155]

4.1.3 Agricultural Insurance

The application of agricultural insurance (weather insurance) is not common in Mozambique; the only example is the one applied to loans provided by Standard Bank, as was stated in 3.3.6 "Agriculture

[155] The grace period should be carefully selected for each type of investment lest money, which should be put aside for repayment, be used for unproductive activities.

Guarantee Fund by AGRA and Agricultural insurance". The high premium rate for agricultural insurance, which was 6 percent of the loan amount in the case of Standard Bank's loans, is the major reason for the limited application of agricultural insurance. In the case of the Small-scale agricultural credit (PRONAF) in Brazil, borrowers are required to pay 2 percent of the invested amount for the agricultural insurance operated by the Brazilian Government (Proagro). However, as the actual compensation is equivalent to 8 percent of the loan amount on average, the Government pays the remaining amount from the budget. According to interviews with multiple sources in Brazil, the high amount of compensation is attributable to the high cost for determining the damages (i.e. the amount for compensation needs to be established by the visits to individual farms) and to the apparently exaggerated claims from borrowers, apart from the risk associated with the weather.

Should agricultural insurance be applied in the TSL in the Nacala Corridor, who pays the premium (or who covers the compensation) needs to be determined. Except for the production of high-valued produce, most farmers would not apply for loans if 6 to 8 percent of insurance premium is added onto their loans. On the other hand, it would not be realistic for the Mozambican Government to secure the budget for compensating all the damages incurred by unexpected weather conditions. Therefore, in the Mozambican circumstance, it would be recommendable that risks from weather be shared by all parties; farmers by their collateral (to be reduced by the guarantee fund and the subsidized interest rate favorable to banks), the Government by providing a guarantee fund (see 4.1.6 "Loan Guarantee" or shouldering 65% of losses (see 4.1.7 "Sharing of Losses from Defaulted Loans); and banks by shouldering the remaining losses.

4.1.4 Exchange Rate Risk

It is likely that when the Mozambican Government repays the TSL to JICA, the amounts to be repaid denominated in USD and MZN could have both increased (far above the 0.01% interest rate) from those at the time of disbursement due to Japanese Yen appreciation. Since the exchange rate risk needs to be assumed by the Mozambican Government, there is a need for relevant government agencies (MINAG, the Ministry of Finance, the Ministry of Planning and Development and the Central Bank) to share information and reach a consensus.

4.1.5 Size of Sub-loans

The sizes of the sub-loans are proposed to be principally between MZN 200,000 to MZN 3 million, taking into consideration the FDA's limited implementing capacity including its restricted outreach as well as TSL's social mission. While TSL is aimed at achieving poverty reduction in the Nacala Corridor through sustainable development of agriculture by promoting private agricultural investment. As such, when TSL supports large-scale, mechanical farming activities, social inclusion, such as the introduction of contract farming or the generation of employment through post-harvest processing, should be made one of the conditions for the sub-loans. In other words, the sizes of the sub-loans to be provided need to be linked to the loan's social impacts on the ground.

4.1.6 Loan Guarantee

One of the major constraints for intermediary banks in extending loans to agribusinesses and farmers is a lack of collateral. Even in cases where purchase contracts for harvests can be used to secure repayment or where equipment purchased through the loan is registered as collateral, the value of the collateral is often less than the loan amount. Moreover, it would be difficult in the Nacala Corridor to apply a system to strictly monitor harvests and equipment pledged as collateral due to the scattering of small-sized projects as well as poor road conditions in the area. Additionally, due to the weak law enforcement environment in Mozambique, taking possession of collateral in cases of default is difficult and costly for banks. As a result, it is likely that banks would require a relatively high collateral coverage in most cases.

That said, a loan guarantee system could become a means to overcoming the constraints of the collateral requirement. The following are options for the loan guarantee system that can be applied in the Nacala Corridor:

(1) National Guarantee Scheme

The National Guarantee Scheme described in Chapter 3 “Banking Sector and Agricultural Credit in Mozambique” can be used for TSL in the Nacala Corridor. The guarantee coverage for the loans can even be increased if the Ministry of Agriculture provides additional funds to the scheme. The advantage of using the National Guarantee Scheme is that an on-going initiative can be utilized, which would be more efficient than creating a new guarantee facility only for the Nacala Corridor. On the other hand, the disadvantages of this option are that: 1) an additional appraisal process (i.e. appraisal by GAPI) would be required for the loans to be guaranteed, which increases the lead time for the processing of loan applications; and 2) borrowers will have to pay a guarantee fee that (partially, when the Mozambican Government subsidizes the scheme) covers GAPI’s operation expenses and compensation for the losses from defaulted loans.

(2) A Guarantee Fund that can be created from the KR Counterpart Fund or from JICA’s Yen Loan

Under the tri-party agreement between MINAG, JICA and GAPI, the Nacala Corridor Development Initiative Fund was launched in 2012 with an initial capital of 750,000 USD to finance selected agribusinesses in the Nacala Corridor on a pilot basis. The source of the fund is MINAG’s Counterpart Fund formed from proceeds of Food Aid (“Kennedy Round”) provided by the Japanese Government in which several million US dollars have been accumulated for use in socio-economic development.

This Counterpart Fund could be utilized to guarantee agricultural loans in the Nacala Corridor. An alternative is to incorporate a guarantee fund into JICA’s prospective Yen Loan for management by FDA. Instead of setting up two parallel appraisal structures by engaging different entities for loans and guarantees, it is possible to form two funds within FDA; a TSL fund and a loan guarantee fund. Through a single appraisal procedure, the loan guarantee fund could be applied to ease the collateral requirement for loans assessed to be viable. The level of leverage that should be applied to the

guarantee scheme is not known since Mozambique does not have an experience of a guarantee fund used for agriculture; the Study Team proposes that the leverage ratio be started from 1:2 at the beginning and be revisited after several years' operation.

Due to the weak law enforcement environment in Mozambique, it is anticipated that there will be some delinquent borrowers who will try to hide their harvests and intentionally default on their loans. It is imperative that the implementing organization takes measures to prevent such cases in collaboration with intermediary financial institutions and the buyers of the harvests in the case of contract farming. It should also be noted that the collateral requirement for the borrowers should not be overly eased by the loan guarantee scheme. From this perspective, the Study Team recommends that at least 25% of the loan amount be secured by the borrower's collateral.

4.1.7 Sharing of Losses from Defaulted Loans

In the case of the Horticulture Credit Line where no guarantee scheme was utilized, there is an agreement between FDA and the intermediary banks that FDA assumes 65% of the losses incurred from defaulted loans. This loss-sharing arrangement has enabled banks to take on relatively risky sub-projects without increasing the interest rate to cover risks and accept lower collateral coverage. The remaining losses (35%), on the other hand, obliged banks to critically appraise each application, which in turn lead to an increase in the repayment rate, eliminating the possibility of excessive/over lending and preventing moral hazard on the banks' side. As an alternative to a guarantee scheme, the same loss-sharing structure could be applied to TSL with the Mozambican Government (or FDA) assuming 65% of the losses.[156]

4.2 Support Needed to Complement TSL

Farmers and agribusinesses in the Nacala Corridor face multiple challenges that in most cases cannot be overcome without external support; providing low-interest, long-term loans alone would not boost agricultural development in the area. Moreover, providing loans to farmers who do not meet all the conditions for growth could put them in an even worse (indebted) situation than before. In order for farmers and agribusinesses to successfully expand their operations and grow, the entire value chain for their produce needs to be examined and measures taken to fill gaps in the value chain prior to, or simultaneous with, the provision of agricultural credit. The following support will be needed to increase TSL end-users' viability while maximizing TSL's impact. It is essential that support be provided not only as a part of TSL ("Special Assistance for Project Implementation"), but also through on-going and future support initiatives of other entities/projects, including ProSAVANA-PEM.

[156] There is the opinion from commercial banks' side that the Government should assume a larger share of the losses for larger loans due to the larger risks associated with large loans. However, large companies are often capable to providing sufficient security for their loans. From the perspective of the TSL's objective (poverty reduction), the Study Team is of the opinion that large-sized loans do not need to be favored in the TSL's framework.

4.2.1 Supply of Quality Inputs

Many farmers in the Nacala Corridor suffer an inability to access quality seed and fertilizer due mostly to a lack of reliable suppliers of these inputs in the area. The level of infrastructural development in contrast to the vast size of the Nacala Corridor as well as the long distances from farms to towns make it difficult for individual farmers to resolve this problem on their own. Establishing a network for supplying quality seed and fertilizer on a commercial basis in a sustainable way is a prerequisite to the provision of loans to these farmers.

4.2.2 Tractor Services

It is inefficient for an individual small- to medium-scale farmer to own tractors. There should be organizations (private companies, large-scale farmers, etc.) that provide tractor services to surrounding famers at an affordable price. Since farmers in most cases are not able to pay the expenses for land preparation prior to the harvest, either receivers or providers of tractor services will need to borrow funds to operate the tractors while stable production and market for the produce will need at the same time to be secured to enable repayment.

4.2.3 Technologies for Production

Due to insufficient budget and a lack of human resources, the Government's extension services in most cases do not reach farmers in the Nacala Corridor. As a result, most farmers lack the knowledge on increasing yields, preventing diseases, reducing losses and other similar activities. In order to secure repayment of the loans, it is indispensable that extension services, including teaching through demonstration plots, be provided in conjunction with the loans.

4.2.4 Organizing of Farmers' Groups

Providing loans to individual farmers is often too costly from a commercial bank's perspective due to their small size in contrast to the distances to reach them. It is also time-consuming to strengthen the management capacity of individual farmers so as to enable them to keep books and duly repay the loan. One alternative is to organize farmers' groups and invest in their common facilities/equipment, such as warehouses, tractors and trucks, which they can then collectively utilize and manage. However, it should be noted that many existing farmers' organizations have been receiving extensive support from international donors, and the Study Team has yet to find a single organization that has achieved self-sufficiency. Along with the strengthening of the organizations' managerial capacity through technical assistance, the introduction of a proper incentive system based on merit will be a prerequisite for lending to these organizations.

4.2.5 Promotion of Contract Farming

Contract farming is one of the most suitable approaches to promoting agricultural investment in the Nacala Corridor. It minimizes the commercial bank's transaction costs as well as potential losses since the bank only needs to manage one borrower (i.e. the buyer of the harvest from contracted farmers) who takes on all the risks while the loan still benefits a number of farmers. Contract farming is in fact a means for providing farmers with an opportunity to break out of the cycle of poverty through providing land preparation services, inputs (quality seed and fertilizer), and reliable selling opportunities for harvested produce.

Most of the medium-scale farms and agribusinesses that are endeavoring to expand their land are aware of the importance of benefits to surrounding farmers in order to avoid social conflicts. This is one of the factors that are currently driving them into contract farming. While the planned size and objectives of TSL sub-loans will not be meant for the financial needs of large multinational agribusinesses, many of them will be interested in engaging in contract farming as a way to realize their Company's Social Responsibility (CSR); a low-interest, long-term TSL can be a means for encouraging such investments.

4.2.6 Creation of Leading Farmers

This Study has identified some of the Mozambican entrepreneurs who have the necessary management capabilities and are committed to engaging in farming in the Nacala Corridor. They have good potential to become dedicated "leading farmers" who can lead regional economic development through disseminating their techniques and know-how of agricultural production and farming management in the Nacala Corridor in the future. Support, such as exposure visits and technical training, should be provided to these candidate leading farmers in order to open their eyes to advanced farming technologies. Given the complexity of land rights, the poor work ethics of ordinary workers and the difficulty in conducting intensive monitoring in the Nacala Corridor, a stepwise approach should be taken in providing these entrepreneurs with the means for growth.

4.2.7 Collection and Selling of Produce

Most farmers in the Nacala Corridor do not have trucks to transport their produce. Moreover, the cost-effectiveness of renting/using a truck to transport a small amount of produce to retailers or local markets in town is low. Although a large number of traders are operating in the Nacala Corridor and reaching most of the farmers in the area, the lack of communication between farmers and traders is leading to a significant loss in their transaction opportunities, especially on the farmers' side. Farmers lack bargaining power; without knowing the current market prices for the produce, they have to accept any price offered by the traders. The farmers' position becomes even weaker when they do not have a proper warehouse to store their produce. Although there are in some cases "collection points" along the main roads where a simple warehouse structure is constructed to temporarily store agricultural produce, their limited size by no means meets the farmers' needs. Constructing and managing a

wholesale market, or establishing a system to share and disseminate market information on agriculture produce by SMS is a way to achieve efficiency and strengthen the farmers' bargaining power, leading to an increase in their borrowing capacity for a loan. Prior to lending to farmers, the issue of timely and reliable collection and selling of their produce needs to be addressed.

4.3 Proposed Implementing Framework for Japan's TSL

Figure 4-1 provides the proposed implementing framework for Japan's TSL, designed based on the conditions discussed in Section 4.1 "Proposed Conditions for Japan's Two Step Loan in the Nacala Corridor". It is indispensable to TSL's smooth and successful implementation that the FDA's Nampula office be reinforced and that the "Loan Appraisal Committee"[157] meetings be held in the Nampula Corridor. The FDA Nampula office needs to work in close collaboration with other organizations and projects operating within the framework of ProSAVANA as well as in the Nacala Corridor.

The operation costs for both commercial banks and FDA will be covered by the interest revenue. Commercial banks' revenue (estimated to be MZN 44.5 million per annum in total as was shown in Table 4-3) will cover the ordinary administration costs for the TSL loan procedures, including the verification and registration of mortgages and account management, as well as part of losses (35%) from defaulted loans. On the other hand, the FDA's annual revenue from TSL is estimated at MZN 23 million. This revenue will be used to cover the activity expenses for FDA's local offices (most likely in three locations: Nampula, Lichinga and Cuamba) that would be reinforced or newly established (it is recommended that one manager and five technical staff, for instance, be allocated in each of the three offices so that FDA could cater to a total of 300 sub-projects in the Nacala Corridor). Once TSL is approved, detailed operational guidelines (including eligibility, priority, terms and conditions by category of sub-loans, and lending procedures) need to be developed and shared with participating banks. Furthermore, in accordance with the JICA's "Guidelines for Social and Environmental Considerations",[158] operational guidelines for social and environmental considerations need to be prepared to be used by the Loan Appraisal Committee upon evaluating individual sub-projects.

JICA's Guidelines for Social and Environmental Considerations

TSL is classified in Category FI in JICA Guidelines for Social and Environmental Considerations, whereby "JICA's funding of projects is provided to a financial intermediary or executing agency; the selection and appraisal of the sub-projects is substantially undertaken by such an institution only after JICA's approval of the funding, so that the sub-projects cannot be specified prior to JICA's approval of funding (or project appraisal); and those sub-projects are expected to have a potential impact on the environment." The following procedures are required to be taken for the projects classified in Category FI:

(1) JICA examines the related financial intermediary or executing agency to see whether appropriate environmental and social considerations as stated in the guidelines are ensured for projects in this category. JICA also examines institutional capacity in order to confirm environmental and social

[157] It is recommended that the Loan Appraisal Committee comprise the representatives from MINAG, CEPAGRI, and FDA, supported by FDA's technical staff and JICA's technical advisors.

[158] http://www.jica.go.jp/english/our_work/social_environmental/guideline/index.html

considerations of the financial intermediary or executing agency, and, if necessary, requires that adequate measures be taken to strengthen capacity;

(2) The financial intermediary or executing agency examines the potential positive and negative environmental impacts of sub-projects and takes the necessary measures to avoid, minimize, mitigate, or compensate for potential negative impacts, as well as measures to promote positive impacts if any such measures are available;

(3) In principle, JICA undertakes environmental reviews and information disclosure for the sub-projects prior to their implementation in a same manner as specified for Category A projects, if those sub-projects are likely to be under the cooperation projects; and

(4) JICA discloses the results of environmental reviews on its website after concluding agreement documents.

Major activities to be conducted by FDA's local offices are the following:

- Collect and compile all types of basic data on agriculture in the Nacala Corridor;
- Identify and/or promote new sub-projects;
- Support agribusinesses and farms in preparing business plans, including cash flow projections;
- Liaise with extension workers of the Government or donors / NGOs in providing technical support to agribusinesses and farms;
- Support agribusinesses and farms in preparing loan applications together with commercial banks;
- Collect baseline data and conduct monitoring of sub-projects; and
- Collect and compile data on the impacts of sub-projects.

It is highly recommended that JICA provide technical assistance to FDA in conjunction with TSL ("Special Assistance for Project Implementation") so that FDA can effectively implement the above-mentioned activities. More specifically, the following specialists should be assigned to strengthen FDA's implementing capacity:

- A project management specialist to support the overall TSL operation, including the development of TSL operational guidelines and coordination with support initiatives implemented by other organizations;
- An agribusiness specialist to support the identification, promotion and due diligence of prospective sub-projects; and
- A monitoring and evaluation specialist to support impact analysis and data compilation.

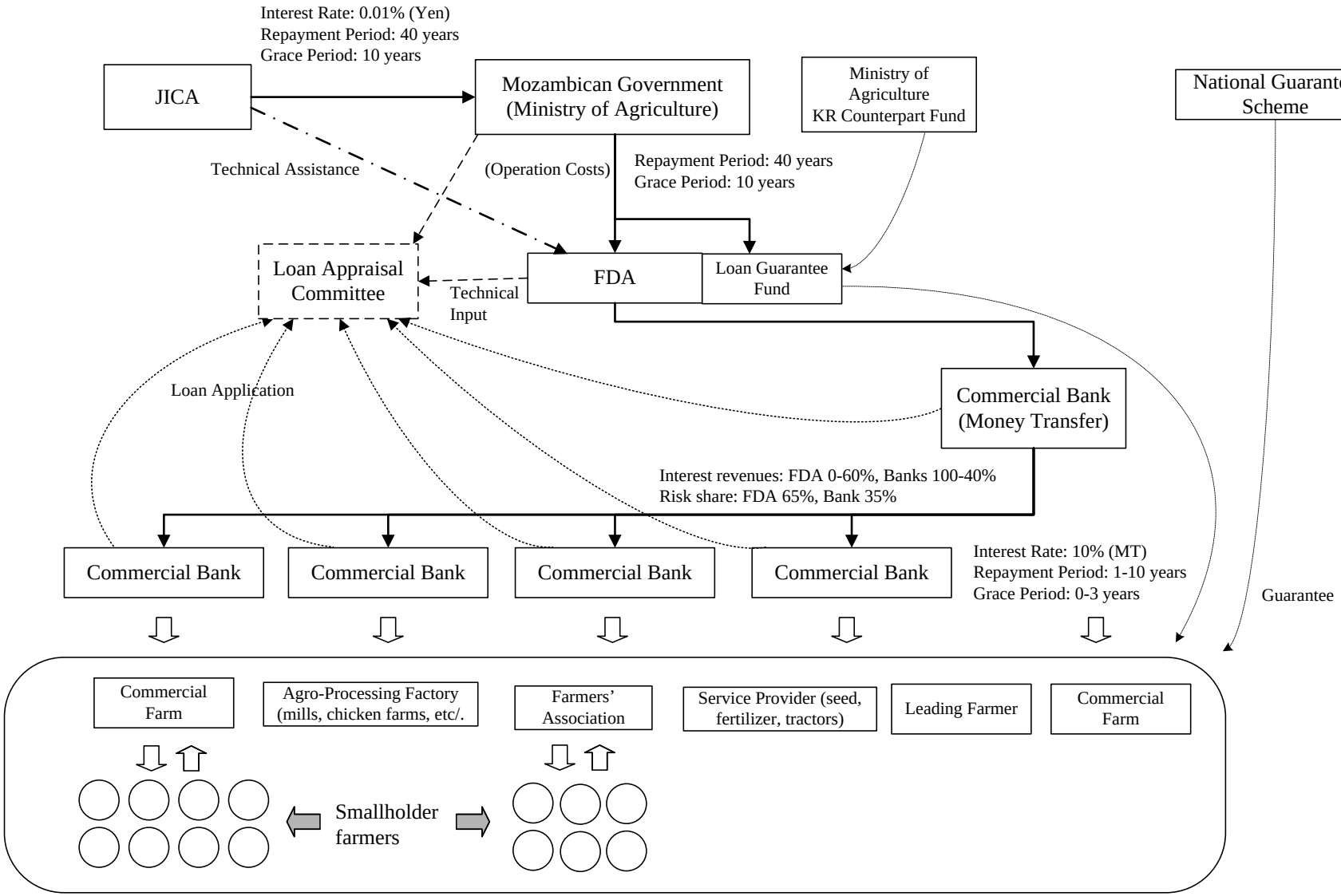


Figure 4-1 Proposed Implementing Framework of Japan's TSL

Source: Study Team

Appendix 1 Financing Schemes for Farms and Agribusinesses in the Nacala Corridor

Name	Target group	Target area	Objectives	Total fund size	Interest rate to end-users	Responsible institution(s)
Existing Lending Schemes						
District Development Fund (FDD)	Small- and medium-scale farmers and other rural economic activities	All Mozambique	Increase food production, farmers' income and employment	USD 300,000 for each district annually	5% p.a.	Mozambican Government
Agriculture Development Fund (FDA)/MINAG	Small- and medium-scale farmers	All Mozambique	Increase production and productivity and increase income from the agriculture sector	MZN 300 million annually	10% p.a.	FDA
Nacala Corridor Agricultural Development Initiative Fund	Medium-scale farmers, agribusinesses, and associations	Nacala Corridor	Increase agricultural production through contract farming	USD 750,000 (for the first year 2012/13) in total	10% p.a.	MINAG (Counterpart Fund) and GAPI
Lending schemes under consideration						
Mais Alimentos Africa	Small- and medium-scale farmers	Selected African countries	Increase agricultural production by providing loans to small- and medium-scale farmers	USD 98 million (Ghana, Zimbabwe, Mozambique, Senegal and Kenya)	NA	MDA (financed by Brazilian Government)
Two-Step Loan (Japanese ODA)	Farmers, agribusinesses, and associations	Nacala Corridor	Increase agricultural production by providing loans to commercially viable farmers and agribusinesses	N/A	N/A	JICA / Mozambican Government
AGRO-INVESTE	Micro- and small-scale companies in agriculture	All Mozambique	Increase agricultural production by providing loans to micro- and small-scale agri-businesses	MZN 225 million (four years)	14% (yet to be decided)	DANIDA / GAPI
Matching grant schemes						
Integrated Growth Poles Project	Medium and large enterprises in agriculture and smallholders	Zambezi Valley and Nacala Corridor	Targeted investments in public goods and services, such as out-grower schemes, packing houses, grading centers, processing, warehouses, etc.	USD 17 million (Catalytic Fund that supports linkages between medium and large firms and smallholders)	Grant	World Bank
FINAGRO	Small and medium sized enterprises and associations operating in farming, agro-processing, marketing and exporting activities	Nacala Corridor, Zambezi Valley, Beira Corridor	Increase the competitiveness of the Mozambican private sector in the value chains in cash crop (fruits, oilseeds, pulses and cashew nuts) and food crops.	MZN 170 million in total, requiring a minimum 30% match of the value of the grant from the applicant.	Grant	USAID

Source: Study Team

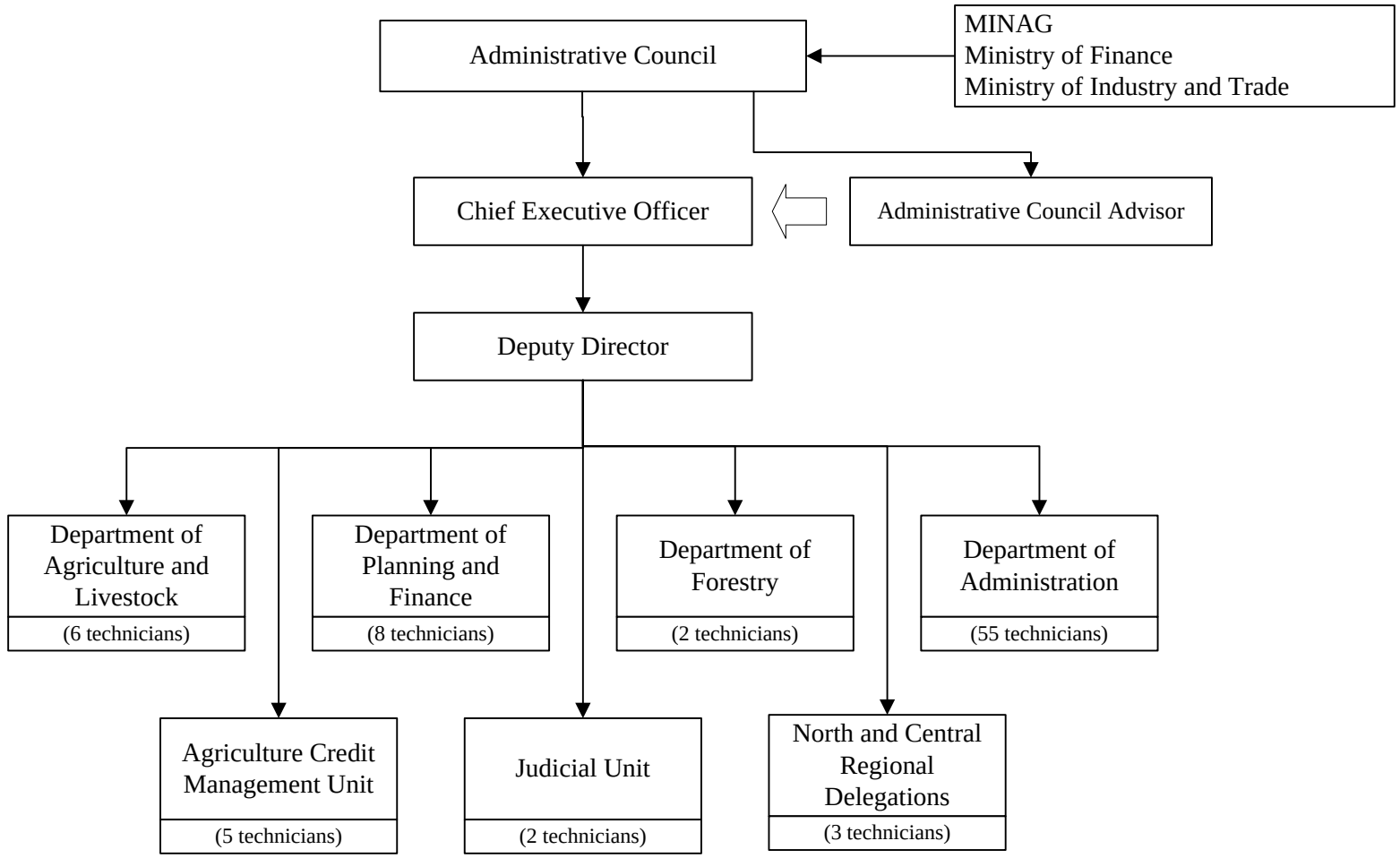
Appendix 2 Comparison of TSL in Mozambique and PRONAF and PRODECER in Brazil

Item	Proposed TSL in Mozambique	PRONAF	PRODECER
Inflation rate (2012)	7.2%	5.8%	-
Interest rate to end-users	10%	From 1% to 5.5%, depending on the size of credit	4% (bank's margin) + ORTN (readjustable obligations of the national treasury)
Agricultural insurance (weather)	None	2% to end-users + 6% to Government	None
Business Plan formulation and due diligence	Free of charge, conducted by FDA and Government extension officers	Free of charge, conducted by EMATER (+ extension agents of intermediary banks in some regions)	2% of credit amount, conducted by Campo[159]
Verification and registration of collateral	Intermediary banks	EMATER	Campo
Guarantee to end-users	Collateral and a government- funded guarantee scheme	Collateral	Collateral
Loss sharing (after insurance and guarantee)	Intermediary bank 35% Government 65%	Intermediary bank 100%	Intermediary bank 100%
Intermediary bank's margin	From 4% to 10%	6%	4%
Intermediary bank's revenue	From 4% to 10%	from 7.75% to 12.25% (6% + 7.25% (central bank's benchmark rate) - Interest rate to end-users)	Interest rate to users (4% + ORTN) – 2% (Campo's commission)
Minimum loan amount	USD 9,000	USD 2,500	-
Maximum loan amount	USD 900,000	USD 65,000	-
Compensation for loan losses	Loan losses are covered by the combination of collateral, the guarantee scheme and the loss sharing arrangement between the bank and Government.	Major loan losses are covered by the heavily subsidized agricultural insurance.	Low interest rates were applied from political considerations (this was possible since the intermediary banks were state-owned; the Government could compensate losses as a last resort) in spite of the absence of a loan guarantee system.

Source: Study Team

[159] A Japanese/Brazilian joint corporation, established in 1978, to implement the PRODECER.

Appendix 3 FDA's Organization Chart



Source: FDA

Appendix 4 Interviewed Agribusinesses and Farms in Nampula Province

A-1.	Province	District	Type of Business	Year of Establishment
	Nampula	Malema (in Malema City)	Farming and cattle breeding	1999

Production	Land		No. of Employees	
• Maize: 70 tonnes • Soybean seed: 8 tonnes • Tomato: 4 tonnes • Onion: 8 tonnes • Cabbage: 6 tonnes.	Owned	350 ha	Permanent	12
	Used	50 ha	Seasonal	80-100
	Annual Revenue (Estimate)		**Ownership Type**	
	N/A		Individual farm (Mozambican)	

Constraints to Growth
Due to the lack of irrigation facilities, the farm is able to grow vegetables only on 5-6 ha of its land by using manual labor during the dry season.

Credit Needs			
Amount	MZN 581,000	**Use**	The farm would like to use the loan to purchase water-pumps to irrigate 70 ha of land.

Conclusion (Credit Demand and its Prerequisites)
It would be financially viable to provide a loan to this farmer since: • The farm owns substantial assets and the tractor purchased through the FDD loan will be additional collateral once it is repaid. The total value of these assets is more than MZN 1,500,000. • The farm will achieve more stable production for vegetables and beans if it purchases water pumps by utilizing the loan. As one of a few vegetable growers in Malema, it will be able to increase its sale of vegetables in Malema.

A-2.	Province	District	Type of Business	Year of Establishment
	Nampula	Malema (approx.15 km from Malema City)	Farming and cattle breeding	1992

Production	Land		No. of Employees	
• Maize: 40 tonnes • Bean: 2.5 tonnes • Onion: 30 tonnes • Tomato: 4.5 tonnes • Banana: several tonnes	Owned	150 ha	Permanent	2
	Used	60 ha	Seasonal	10-15
	Annual Revenue (Estimate)		**Ownership Type**	
	N/A		Individual farm (Mozambican)	

Constraints to Growth
Without its own truck, the farm has to depend on unreliable small-scale buyers for the purchasing of its produce.

Credit Needs			
Amount	MZN 1,150,000	**Use**	The farm would like to use the loan to purchase another tractor and a second-hand truck.

Conclusion (Credit Demand and its Prerequisites)
It would be financially viable to provide a loan to this farm because: (1) the farm has enough assets for collateral; (2) the farm has a sizable plot of land; and (3) there is a large demand for vegetables in Malema, Ribáuè and Nampula, to which it will be able to deliver the produce once it obtains a truck. It is at the same time highly advisable to encourage this farm to engage in tractor and transport services for neighboring farms in order to increase the utilization of the equipment.

A-3.	Province	District	Type of Business	Year of Establishment
	Nampula	Malema (in Malema City)	Farming	2005

Production	Land		No. of Employees	
• Maize: 30 tonnes • Soybean: 6 tonnes • Vegetables (cabbage, onion and tomato) • Multiplying seed of maize and kidney bean • Others (potato, lentil, and rice)	Owned	80 ha	Permanent	10
	Used	30 ha	Seasonal	N/A
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 330,000/year		Individual farm (Mozambican)	

Constraints to Growth

- The farm does not have sufficient working capital to rent a tractor to expand its land.
- The farm does not have as sufficient water supply for vegetable production and it wants to buy water-pumps to produce vegetables throughout the year.
- Due to the limited amount of vegetable production, the cost-effectiveness for transporting maize, soybean and vegetables to Nampula is low.

Credit Needs

Amount	MZN 800,000	Use	The farm would like to purchase 1 tractor (second-hand) and 4 water-pumps, and finance the clearing and preparation of new land.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this farm since the tractor and water-pumps to be purchased through the loan will increase the volume of production (especially vegetables and soybean) and improve profits. The equipment financed by the loan can constitute part of the collateral for the loan. It is at the same time highly advisable to encourage this farm to associate with neighboring farms in transporting the produce so that economies of scale can be achieved.

A-4	Province	District	Type of Business	Year of Establishment
	Nampula	Malema (approx.20 km from Malema Town)	Farming	2013

Production	Land		No. of Employees	
• Soybean • Root pea • Maize • Millet • Onion	Owned	2 ha (joint plot)	Permanent	N/A
	Used	1.5 ha	Seasonal	N/A
	Annual Revenue (Estimate)		**Ownership Type**	
	N/A		Association (not yet legalized, 20 members)	

Constraints to Growth

- Members suffer from an insufficient onion seed supply. Although there is a constant demand for onion from buyers in and around Malema, there are only a limited number of seed suppliers within the reachable distance who can supply seed at reasonable prices. If this situation iconstraint tomproves, members can produce more onion and increase their income.
- The association does not have a means of transportation and sound market linkages.

Credit Needs

Amount	MZN 92,000	Use	The association would like to use the loan to legalize 20 ha of land (4,600 MZN / ha)

Conclusion (Credit Demand and its Prerequisites)

It is premature to provide a loan to this association. It was formed only one month ago, and does not yet have experience in any substantial production or marketing. The association should apply for a loan after accumulating certain experience.

A-5	Province	District	Type of Business	Year of Establishment
	Nampula	Ribáuè, Malema, and Mogovolas	Farming, contract farming, and retail	2006

Production	Land		No. of Employees	
• Production of seed: 370 tonnes/year ➢ Bean ➢ Soybean ➢ Sesame • Seed sale	Owned	NA	Permanent	5
	Used	NA	Seasonal	20
	Out-growers	10 ha-50 ha/out-grower	Out-grower	20
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 8 million (2012/13)		Private company (Mozambican)	

Constraints to Growth

- The company's main constraint is its lack of working capital.
- The high cost of seed certification by IIAM (MZN1,500/tonne) is also a constraint.

Credit Needs

Amount	MZN 6 million	Use	The company would like to use the loan to construct a seed processing factory and a warehouse as well as to increase the number of contract farmers.

Conclusion (Credit Demand and its Prerequisites)

- It would be financially viable to provide a loan to this company because: (1) the company has sufficient assets for collateral; (2) the company is managed by a man of business acumen; and (3) the company has secured markets.
- The loan will have a large social impact. According to the company, as a result of this expansion, 3,000 tonnes of seed will be produced and 500,000 farmers will benefit by having easier access to improved, certified seed.

A-6.	Province	District	Type of Business	Year of Establishment
	Nampula	Ribáuè	Farming and contract farming	2010

Production	Land		No. of Employees	
• (Own farm) soybean, tomato, onion, carrot, and cattle • (Contract farms) soybean and soybean seed ➢ Tabaco: 9 tonnes, ➢ Sesame: 2 tonnes, ➢ Soybean: 2 tonnes, ➢ Tomato: 45 tonnes	Owned	2,000 ha	Permanent	12
	Used	Soybean: 30 ha; Soybean seed: 5 ha; Sunflower: 2 ha; Peanut: 3 ha; and Demo-plot: 0.5 ha	Seasonal	30-40
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 1 million (2011)		Private company (Mozambican)	

Constraints to Growth

- It costs about 20,000-25,000 MZN/ha to clear bushes. It costs an additional MZN 3,000 to MZN 4,000 /ha to prepare land for cultivation (e.g. plowing and raking).
- It is also costly to find a capable farm manager. Those who are capable tend to work for NGOs.
- Small-scale farmers who perform shifting cultivation intrude on the company's land and begin farming.

Credit Needs

Amount	MZN 2 million	Use	The company would like to use the loan to purchase soybean from farmers after finishing purchase contracts with buyers.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this company given the value of its assets and its well-structured management. The company also has secured markets. If the loan is provided, the company will be able to increase the production volume of soybean and tomato by expanding land, maintaining irrigation facilities and establishing good relationships with reliable out-growers.

A-7.	Province	District	Type of Business	Year of Establishment
	Nampula	Ribáuè (approx. 20 km from Ribáuè City)	Farming	2010

Production	Land		No. of Employees	
• Cassava, soybean, maize, sesame, pigeon pea, cow pea, mille ➢ Cassava: 150 tonnes ➢ Soybean: 20 tonnes ➢ Sesame: 3-4 tonnes • Tomato, onion, cabbage • Seed multiplication	Owned	1,000 ha	Permanent	5
	Used	200 ha	Seasonal	15-20
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 741,000 / year.		Private company (Mozambican)	

Constraints to Growth

The main constraint for the growth has been the difficulty in getting a long-term loan to invest in equipment (a tractor, water pumps, and warehouses).

Credit Needs

Amount	MZN 5,800,000	Use	The company would like to use the loan to build a multi-purpose cassava processing plant and a warehouse, and buy water pumps and a tractor.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this company given its sizable land, stable production, and the expected revenues from the operation of the processing plant. The demand for processed cassava in Ribáuè and Nampula has been growing. Processed cassava (flour, starch, and grated cassava) will be sold to retail shops, bakeries, patisseries, feed factories, a beer company, the textile industry, the food industry, and buyers at the market.

A-8	Province	District	Type of Business	Year of Establishment
	Nampula	Murrupula (approx.5 km from Murrupula City)	Farming	N/A

Production	Land		No. of Employees	
• Cassava, maize, soybean, cow pea, and peanut. ➢ Cassava: 3 tonnes ➢ Maize: 0.5 tonnes ➢ Peanut: 0.5 tonnes • Vegetables (sweet potato, lettuce, cabbage, carrot)	Owned	15 ha	Permanent	5
	Used	5 ha	Seasonal	3-4
	Annual Revenue (Estimate)		**Ownership Type**	
	• Cassava: MZN 4,500/year • Other crops: MZN 14,500/year		Individual farm (Mozambican)	

Constraints to Growth

The main constraint to growth has been difficulties in getting inputs at the proper time in the proper quantity. The transportation cost to Nampula and the low prices offered by buyers are also challenges. The farmer wants a local market place to sell his produce.

Credit Needs

Amount	MZN 80,000	Use	The farm would like to use the loan to establish a seed shop in Murrupula and to purchase 60 cashew trees.

Conclusion (Credit Demand and its Prerequisites)

It would not be financially viable to provide a loan to this farm due to the small scale of its production. This type of farm should be encouraged to enter into a contract farming agreement with a private company or a farmers' association with sufficient management skills to supply inputs on credit, provide technical advice, and purchase the out-growers' produce. Cassava would be a suitable crop for contract farming in Murrupula since there is a constant demand from a cassava processing plant – CDM (a brewery).

A-9.	Province	District	Type of Business	Year of Establishment
	Nampula	Murrupula (approx. 25 km from Murrupula City)	Farming	1990

Production	Land		No. of Employees	
• Maize, cassava, sesame, cow pea, rice ➢ Maize: 40-50 tonnes ➢ Sesame: 10 tonnes • Vegetables (Tomato)	Owned	300 ha	Permanent	8
	Used	30 ha	Seasonal	10-15
	Annual Revenue (Estimate)		**Ownership Type**	
	• Maize: MZN 400,000 /year • Sesame: MZN 160, 000 /year • Tomato: MZN 180,000 /year		Individual farm (Mozambican)	

Constraints to Growth
The main constraint to growth is difficulties in obtaining inputs locally.

Credit Needs			
Amount	MZN 1,100,000	**Use**	The farm would like to use the loan to establish a seed shop and a warehouse in Murrupula.

Conclusion (Credit Demand and its Prerequisites)
It would be financially viable to provide a loan to this company given the farm's 20 years of experience in farming as well as experience of managing employees, a sizable plot of land, and the current level of revenues. It is expected that both the seed shop and warehouse will benefit the local community.

A-10.	Province	District	Type of Business	Year of Establishment
	Nampula	Murrupula (approx. 10 km from Murrupula City)	Farming	1993

Production	Land		Members
Cassava, maize, cow pea, peanut, bean • Cassava: 4 tonnes • Peanut: 1.5 tonnes	Owned	25.5 ha	21 members
	Used	4.5 ha	
	Annual Revenue (Estimate)		**Ownership Type**
	• Cassava: MZN 56,000 /year • Peanut: MZN 30,000 /year		Association

Constraints to Growth
The main constraint to growth is a lack of capital and weak market linkages.

Credit Needs			
Amount	MZN 63,000	**Use**	The association would like to use the loan to prepare 21 ha of its own land.

Conclusion (Credit Demand and its Prerequisites)
Same as A-8

A-11.	Province	District	Type of Business	Year of Establishment
	Nampula	Rapale (approx.15 km from Rapale City)	Farming and poultry breeding under contract farming	2006

Production	Land		No. of Employees	
• Chicken (meat, eggs, chickens, chicks) ➢ Chicken meat: 1,800 tonnes ➢ Eggs: no data ➢ Chickens: 25,000 ➢ Chicks: 3,000,000 • Chicken feed: 2,700 tonnes	Owned	300 ha	Permanent	250
	Used	N/A	Seasonal	N/A
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 8,000,000 / year (2012)		Private company (Zimbabwean)	

Constraints to Growth

The major challenge for the company is quality control. The monitoring cost for the Farmer Management System is relatively high for this company. If a loan is available, this company will be able to expand the scale of this system and increase profits by extending the breeding period for chickens.

Credit Needs

Amount	N/A	Use	N/A

Conclusion (Credit Demand and its Prerequisites)

This company has a well-structured management system to allow qualification as borrower for agricultural loans. However, the owner of this company is not very favorable to the idea of agricultural loans around Rapale since it could create competition in the poultry industry in the long term though the loan may increase his farm's profit in the short term.

A-12	Province	District	Type of Business	Year of Establishment
	Nampula	Rapale	Poultry production (under contract farming)	2007

Type of Produce/Services	Land		No. of Employees	
• Chickens ➢ Chickens: 40,000 (by 8 cycles a year) • Vegetables (own consumption)	Owned	2 plots of land • Ribáuè: 200 ha • Alto Molocue: not known.	Permanent	2
	Used	140 ha (In Ribáuè)	Seasonal	0
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 4.2 million		Individual farmer (Mozambican)	

Constraints to Growth

The farm needs water supply facilities.

Credit Needs

Amount	MZN 400,000	Use	The farm would like to use the loan to construct a water reservoir. (Novas will provide automatic water tanks if the farm is capable of building a water reservoir).

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this farm since it is making sufficient profits and has stable outlets for its produce. The owner also has good management skills.

A-13.	Province	District	Type of Business	Year of Establishment
	Nampula	Rapale (approx. 10 km from Rapale City)	Farming	N/A

Production	Land		No. of Employees	
• Tomato: 40 tonnes • Cabbage: 280 tonnes • Onion: 80 tonnes • Carrot: 80 tonnes • Green bean: 24 tonnes • Pumpkin: 10 tonnes • Butter nut: 50 tonnes • Watermelon: 100 tonnes	Owned	80 ha	Permanent	17
	Used	55 ha	Seasonal	15-20
	Annual Revenue (Estimate)		**Ownership Type**	
	• Sales from vegetables: MZN 6,000,000 /year.		Individual farm (Mozambican)	

Constraints to Growth
The main constraint to growth has been a lack of funds to mobilize machinery in order to clear and prepare the land, and to increase the number of irrigation facilities and trucks.

Credit Needs			
Amount	MZN 1.2 million	**Use**	Land preparation and expansion of irrigation facilities.

Conclusion (Credit Demand and its Prerequisites)
It would be financially viable to provide a loan to this farm given its sizable plot of land, stable production and revenue, and the owners' management skills (he maintains financial statements). The farm is willing to receive a loan if the interest rate is less than 10%. If the available interest rate is higher than that, it would rather gradually expand its business through its own financing.

A-14.	Province	District	Type of Business	Year of Establishment
	Nampula	Rapale (approx. 20 km from Rapale City)	Farming, processing, and cattle breeding	N/A

Type of Produce/Services	Land		No. of Employees	

• Maize, cassava, cowpea
  ➢ Maize: 80 tonnes
  ➢ Cashew nut: 200 tonnes
  ➢ Cowpea: 5 tonnes
• Maize flour: 400 tonnes
• Cattle
	Owned	570 ha	Permanent	17

	Used	78 ha	Seasonal	15-20
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 13 million		Individual farm (Mozambican)	

Constraints to Growth
The constraint to the farm is a lack of funds to mechanize cultivation (tractors) and expand the maize milling facility.

Credit Needs			
Amount	MZN 3,000,000	**Use**	The farm would like to use the loan for land preparation and the expansion of maize milling facilities (to triple the processing capacity in five years).

Conclusion (Credit Demand and its Prerequisites)
It would be financially viable to provide a loan to this farm since its business is stable and production is making sufficient profits. However, the owner is not willing to receive any type of loans; he wants to gradually expand his production scale through his own financing.

A-15.	Province	District	Type of Business	Year of Establishment
	Nampula	Rapale (approx. 20 km from Rapale City)	Farming	2004

Production	Land		No. of Employees	
• Cashew nut: 7 tonnes • Peanut: 1 tonnes • Onion: 1 tonnes • Tomato: N/A • Cabbage: N/A • Maize: 0.7 tonnes	Owned	66 ha (two plots: one for cashew nut and the other mainly for maize and vegetables)	Permanent	4
	Used	41 ha (10.2 ha for cashew nut)	Seasonal	8
	Annual Revenue (Estimate)		**Ownership Type**	
	Total revenue: MZN 800,000 MZN /year (The farmer's sales come mainly from the sale of cashew nut.)		Individual farm (Mozambican)	

Constraints to Growth

The main constraints on growth have been a lack of water supply and a lack of mechanization for farming. This farm's production is dependent on manual labor for both irrigation and cultivation. If the farm had its own irrigation facilities and equipment, the farm would be able to expand production volume (especially, vegetables).

Credit Needs

Amount	MZN 350,000	Use	The farm would like to use the loan to cultivate more land (by receiving tractor services) and prepare irrigation facilities for vegetable production.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this farm since the farm has a sizable plot of land that will be converted into a vegetable field and has already been generating income.

A-16.	Province	District	Type of Business	Year of Establishment
	Nampula	Ribáuè	Contract farming and input sale	2003

Production	Land		No. of Employees	
• Seed by contract farming in Ribáuè ➢ Seed of maize and bean: 150 tonnes ➢ Seed of vegetables and others: N/A • Trading ➢ Vegetable seed, cowpea, sorghum, maize, and bean. ➢ Fertilizer ➢ Livestock medicines ➢ Other agricultural products	Owned	2 plots of land for livestock and contract farming (Ribáuè: 200 ha; Alto Molocue: N/A.)	Permanent	10
	Used	140 ha (contract farming in Ribáuè)	Seasonal	0
	Annual Revenue (Estimate)		**Ownership Type**	
	• MZN 950,000		Private company (Mozambican)	

Constraints to Growth

- The company's contract farming recorded a loss in both of the last 2 years. The company contracted with 5 associations, approximately 30 farmers, in Ribáuè. 0.4 tonnes of seed were lost with 4 associations.
- In Alto Molocue, the company found a reliable large-scale farmer who will be able to provide a stable production of seed. As a strategy to conduct more efficient contract farming, the company has to concentrate its focus on reliable farmers.

Credit Needs

Amount	MZN 3 million	Use	The company would like to use the loan to operate more shops in Nampula for the sale of inputs.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this company because: (1) the company has sufficient assets for collateral; (2) the company is currently making a profit; and (3) the owner of the company has good business skills.

<table>
<tr><td rowspan="2">A-17.</td><td>Province</td><td colspan="2">District</td><td>Type of Business</td><td colspan="2">Year of Establishment</td></tr>
<tr><td>Nampula</td><td colspan="2">Nampula (Nampula City)</td><td>Farming and contract farming</td><td colspan="2">2010</td></tr>
<tr><td colspan="2">Production</td><td colspan="3">Land</td><td colspan="2">No. of Employees</td></tr>
<tr><td colspan="2" rowspan="4">• Seed
➢ Maize: 260 tonnes
➢ Sorghum: 20 tonnes
➢ Sesame: 50 tonnes
➢ Groundnut:75 tonnes
➢ Bean: 50 tonnes,
• Crops (Mung bean, cowpea, and pigeon pea)
➢ Pigeon pea: 50 tonnes</td><td>Owned</td><td colspan="2">150 ha (plus 400 ha owned by contract farmers)</td><td>Permanent</td><td>5</td></tr>
<tr><td>Used</td><td colspan="2">60 ha (plus 250 ha used by contract farmers)</td><td>Seasonal</td><td>0</td></tr>
<tr><td colspan="3">Annual Revenue (Estimate)</td><td colspan="2">Ownership Type</td></tr>
<tr><td colspan="3">MZN 27,375,000 /year</td><td colspan="2">Private company (Mozambican)</td></tr>
<tr><td colspan="7">Constraints to Growth</td></tr>
<tr><td colspan="7">• Means for securing the quality of seed produced by out-growers is a challenge.
• Land owned by the members of small associations (10-20 members) is often scattered. This makes it difficult for the company to conduct regular extension services and monitoring.</td></tr>
<tr><td colspan="7">Credit Needs</td></tr>
<tr><td>Amount</td><td colspan="2">MZN 7,500,000</td><td>Use</td><td colspan="3">The company would like to use the loan to expand 300 ha of land in Gurué.</td></tr>
<tr><td colspan="7">Conclusion (Credit Demand and its Prerequisites)</td></tr>
<tr><td colspan="7">It would be financially viable to provide a loan to this company because: (1) the company has enough assets to be used as collateral; (2) the company is already generating sufficient revenue; and (3) the owner has sufficient business skills. It is expected that the company’s profitability will be further improved by concentrating its focus for contract farming on reliable farmers.</td></tr>
</table>

<table>
<tr><td rowspan="2">A-18.</td><td>Province</td><td colspan="2">District</td><td>Type of Business</td><td colspan="2">Year of Establishment</td></tr>
<tr><td>Nampula</td><td colspan="2">Nampula (Nampula City)</td><td>Farming and contract farming</td><td colspan="2">2006</td></tr>
<tr><td colspan="2">Production</td><td colspan="3">Land</td><td colspan="2">No. of Employees</td></tr>
<tr><td colspan="2" rowspan="3">Bean
(Pigeon pea, cow pea, soybean)</td><td>Owned</td><td colspan="2">250 ha</td><td>Permanent</td><td>N/A</td></tr>
<tr><td>Used</td><td colspan="2">2,500 ha (contract farmers’ land)</td><td>Seasonal</td><td>N/A</td></tr>
<tr><td colspan="3">Annual Revenue (Estimate)</td><td colspan="2">Ownership Type</td></tr>
<tr><td colspan="3">N/A</td><td colspan="2">Private company (Portuguese)</td></tr>
<tr><td colspan="7">Constraints to Growth</td></tr>
<tr><td colspan="7">The company has difficulties in preventing cheating by out-growers since it is dealing with a large number of out-growers.</td></tr>
<tr><td colspan="7">Credit Needs</td></tr>
<tr><td>Amount</td><td>N/A</td><td>Use</td><td colspan="4">N/A</td></tr>
<tr><td colspan="7">Conclusion (Credit Demand and its Prerequisites)</td></tr>
<tr><td colspan="7">This company does not need any external funding since its funding is provided by its parent company.</td></tr>
</table>

A-19.	Province	District	Type of Business	Year of Establishment
	Nampula	Mogovolas (in Mogovolas City)	Processing	2005

Production	Land		No. of Employees	
Processed cashew nut (having 2,000 tonnes of processing capacity, the company buys cashew nut from more than 5,000 farmers in neighboring communities.)	Owned	5 ha (for the site of processing plant)	Permanent	100
	Used	5 ha	Seasonal	700
	Annual Revenue (Estimate)		**Ownership Type**	
	N/A		Private company (Portuguese)	

Constraints to Growth

- The main constraint to growth is the unreliable supply of cashew nut. The volume of cashew nut supplied from small-scale farmers varies every year since their production is dependent on rain water.
- Low yields from aged trees are also a problem. Encouraging farmers, in collaboration with input suppliers, to plant new seedlings may solve this problem.

Credit Needs

Amount	N/A	Use	The company would like to use the loan to improve the existing warehouse and processing units.

Conclusion (Credit Demand and its Prerequisites)

This company does not need any external funding since its fund is provided by its parent company.

A-20	Province	District	Type of Business	Year of Establishment
	Nampula	Mogovolas	Farming	2011

Production	Land		No. of Employees	
• Peanut: 10 tonnes • Bean: 0.4 tonnes • Sesame: 10 tonnes • Cashew nut: 0.5 tonnes	Owned	98 ha (the total of 3 areas)	Permanent	19
	Used	42 ha	Seasonal	N/A
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 3.6 million		Cooperative	

Constraints to Growth

- The cooperative does not have the tractor nor manpower needed to expand its cultivated area.
- The cooperative is not fully financially self -sufficient since it depends on financial assistance from AgriFUTURO (MZN 168,000 / year, this amount is included in the revenue).

Credit Needs

Amount	MZN 52,000	Use	• To obtain DUAT (MZN 46,000) for 10 ha • To receive tractor services (MZN 6,000)

Conclusion (Credit Demand and its Prerequisites)

The requested amount for a loan is at the level of microfinance. The cooperative has assets, secured buyers and the capability of keeping financial statements as a result of training in farming techniques, basic accounting, and general management provided by CLUSA. However, the cooperative is still financially dependent on donor assistance. Prior to the provision of a loan, the cooperative should accumulate more experience in production and business.

A-21.	Province	District	Type of Business	Year of Establishment
	Nampula	Muecate	Farming	2006

Type of Produce/Services	Land		No. of Employees	
• Cassava: 10 tonnes • Maize: 10 tonnes • Peanut: 2 tonnes • Cabbage: 10 tonnes • Tomato: 5 tonnes • Onion: 5 tonnes	Owned	38 ha	Permanent	12
	Used	38 ha	Seasonal	10
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 425,000		Association	

Constraints to Growth

- The main constraint to growth is a lack of capital to purchase inputs and water pumps.
- This association does not own a car or a truck while hiring a truck is costly for the small volume of the association's production. Consequently, this association is obliged to depend on local buyers who visit the farm randomly without any fixed contract for purchase.

Credit Needs

Amount	MZN 80,000	Use	The association would like to use the loan to purchase water pumps, quality seed and fertilizer.

Conclusion (Credit Demand and its Prerequisites)

It would not be financially viable to provide a loan to this association due to the lack of secure market linkages. This type of association should be encouraged to enter into a contract farming agreement with a private company or a farmers' association with sufficient management skills to supply inputs on credit, provide technical advice, and purchase the out-growers' produce.

A-22.	Province	District	Type of Business	Year of Establishment
	Nampula	Muecate (approx. 10 km from Muecate City)	Farming	N/A

Type of Produce/Services	Land		No. of Employees	
• Tomato, cabbage ➢ Cabbage and tomato: 50 tonnes • Peanut, maize	Owned	15 ha	Permanent	6
	Used	6.5 ha	Seasonal	0
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 750,000 – MZN 1,000,000 /year		Individual farm (Mozambican)	

Constraints to Growth

The main constraint to growth has been the difficulty in expanding cultivated land and supplying water to the farm due to a lack of capital.

Credit Needs

Amount	MZN 1 million	Use	The farm would like to use the loan to expand irrigation systems, clear new land, build a dam, and build a greenhouse.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this farm because: (1) its sales from farming are large enough to repay the loan; and (2) the owner has more than 10 years of experience in vegetable production and in managing its employees; and (3) the farm has secured markets. The first loan will enable the purchase of water-pumps and the expansion of cultivated land through the frequent use of tractor services. The construction of a dam made of concrete and the construction of a greenhouse for vegetables should be considered after the repayment of the first loan.

A-23	Province	District	Type of Business	Year of Establishment
	Nampula	Meconta	Farming and livestock breeding	2012

Type of Produce/Services	Land		No. of Employees	
Crops • Rice (Pemba) • Cassava (Rapale) • Vegetables (Meconta) • Peanut • Maize (Meconta) • Cashew nut (Pemba) Livestock breeding	Owned	50 ha (Pemba), 75 ha (Rapale), 100 ha (Meconta)	Permanent	8
	Used	15 ha (Pemba), 20 ha (Rapale), 30 ha (Meconta)	Seasonal	4
	Annual Revenue (Estimate)		**Ownership Type**	
	• Rice (MZN 270,000), cashew nut, cassava, vegetables, cattle, chickens, goats (N/A)		Individual farm (Mozambican)	

Constraints to Growth

- The farm was started last November and has not secured outlets for its produce.
- The farm recognizes the coastal areas (Angoche, the Nacala Port and Moma) as potential sites for its sales since produce sold there is often expensive because they are imported from the South Africa. If the farm can produce cheaper crops in large quantities, more of its produce will be sold in the coastal areas. Maize flour also has a huge demand in these areas, and the farm is planning to use maize milling services in the neighboring town (Namialo) to sell milled maize in these areas.

Credit Needs

Amount	MZN 3 million	Use	The farm would like to use the loan to buy a tractor and water containers for livestock, and build a pavilion for poultry.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this farm given the amount of the farm's own savings (MZN 8-9 million) and the total value of assets that can be used for collateral. The owner has grown up in a family with background in agronomy and has business skills. Since the farm does not have sufficient experience in marketing its product, the loan should be given in a stepwise manner.

A-24.	Province	District	Type of Business	Year of Establishment
	Nampula	Monapo (approx. 20 km from Monapo City)	Farming and processing	1996

Production	Land		No. of Employees	
Production • Cashew nut: 80 tonnes / year. • Sesame: 3 tonnes. Processing: • Cashew nut processing unit: 250 kg / day • Fruit juice: N/A	Owned	500 ha	Permanent	50
	Used	125 ha	Seasonal	150
	Annual Revenue (Estimate)		**Ownership Type**	
	Total: MZN10,552,000 /year • Non-processed cashew nut: MZN 480,000 / year • Processed cashew nut: MZN 10,000,000 /year. • Sesame: MZN 72,000 /year.		Private company (Network of the *International HUMANA People to People* Movement)	

Constraints to Growth

The main constraint to growth is a lack of funds for the renewal of cashew trees and inputs supply (fertilizer and pesticide) for the treatment of trees.

Credit Needs

Amount	N/A	Use	The company would like to use the funds to expand the processing capacity of the plant, treat existing cashew trees, and plant new trees.

Conclusion (Credit Demand and its Prerequisites)

(Since the Study Team was not able to meet the decision maker, the company's willingness to borrow money from banks is not known.)

A-25	Province	District	Type of Business	Year of Establishment
	Nampula	Monapo	Farming	N/A

Type of Produce/Services	Land		No. of Employees	
• Maize: 15 tonnes • Millet: N/A • Cassava: 9 tonnes (5 tonnes for own consumption) • Cowpea and Pigeon pea: 3.5 tonnes	Owned	50 ha	Permanent	2
	Used	22 ha	Seasonal	18
	Annual Revenue (Estimate)		**Ownership Type**	
	• Maize (flour): MZN 375,000 / year • Cassava (flour): MZN 125,000 / year • Cowpea and Pigeon Pea: MZN 35,000 / year		Individual farm (Mozambican)	

Constraints to Growth

- The main constraint to growth is a lack of irrigation facilities and mechanization of farming.
- The farm also needs a warehouse to increase its bargaining power.

Credit Needs

Amount	MZN 800,000	Use	The farm would like to use the loan to rent a bulldozer to clear its remaining land (15,000 MZN / time), buy a truck, and build irrigation facilities (a dam and a water pump).

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this farm since the farm has a sizable plot of land and some assets that can be used for collateral. Investment in irrigation facilities and the expansion of the cultivated area will increase production. The construction of a warehouse will increase the farm's bargaining power.

A-26	Province	District	Type of Business	Year of Establishment
	Nampula	Monapo	Farming, seed production, and firewood	1990

Production	Land		No. of Employees	
Crops • Maize: 26 tonnes • Bean: 9 tonnes Seed • Maize seed: more than 2-3 tonnes	Owned	100 ha	Permanent	2
	Used	25 ha	Seasonal	100
	Annual Revenue (Estimate)		**Ownership Type**	
	The farm owner conducts multi-businesses • Crop production: (maize: MZN 260,000 / year, bean: MZN 135,000 / year, seed: N/A) • Firewood represents 50% of the entire sales.		Individual farm (Mozambican)	

Constraints to Growth

The farmer currently sells most of his produce in Monapo. If he increases production by expanding his farmland, he will need new outlets in neighboring areas (e.g. Nacala, Angoche, Namialo, and Nacavala).

Credit Needs

Amount	MZN 1 million	Use	The farm would like to use the loan to clear and cultivate 80 ha of its land.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this farm since the farm has a sizable plot of land and some assets that can be used for collateral. The owner has much experience in farming as an agronomist. Since there is a need to explore new markets for increased produce, the loan should be provided in a stepwise manner.

<table>
<tr><th rowspan="2">A-27.</th><th>Province</th><th>District</th><th>Type of Business</th><th>Year of Establishment</th></tr>
<tr><td>Nampula</td><td>Monapo
Mogovolas</td><td>Seed production, trading, processing and exporting</td><td>2003</td></tr>
<tr><th colspan="2">Production</th><th colspan="2">Service Areas</th><th>Membership</th></tr>
<tr><td colspan="2" rowspan="2">• Seed production (2011)
➢ Soybean: 220 tonnes
➢ Groundnut: 250 tonnes
➢ Other: 50 tonnes
• Crops production (2011)
➢ Maize: 637 tonnes
➢ Sesame: 533 tonnes
➢ Others: approx. 170 tonnes</td><td colspan="2">Nampula (Angoche, Moma, Mogovolas, Mogincua Zembezia, Meconta, Monapo, Muecate, Malema, and Ribáue)
Zambézia (Gurué and Alto Molocué)</td><td>22,000 members</td></tr>
<tr><td colspan="2">Annual Revenue (Estimate)</td><td>Ownership Type</td></tr>
<tr><td colspan="2">• Seed: MZN11,770,000 (2011)
(soybean: MZN 3,960,000; groundnut: MZN 6,750,000; and others: MZN 1,060,000)
• Crops: MZN 22,056,000 (2011)
(maize: MZN 15,925,000; sesame: MZN 2,667,000; and others: approx. MZN 3,464,000)
• Grants from donors</td><td>Private company
(founded with initial investment from 21 farmers' associations, GAPI and OXFAM)</td></tr>
<tr><th colspan="5">Constraints to Growth</th></tr>
<tr><td colspan="5">The insufficient working capital is the company's main constraint.</td></tr>
<tr><th colspan="5">Credit Needs</th></tr>
<tr><td>Amount</td><td>MZN 10.5 million</td><td>Use</td><td colspan="2">The company would like to use the loan to expand contract farming.</td></tr>
<tr><th colspan="5">Conclusion (Credit Demand and its Prerequisites)</th></tr>
<tr><td colspan="5">It would be financially viable to provide a loan to this company although it is in the midst of a transitional period from a donor-dependent to a self-reliant organization. The loan will have a large social impact.</td></tr>
</table>

Appendix 5 Interviewed Agribusinesses and Farms in Niassa Province

<table>
<tr><td rowspan="2">B-1.</td><td>Province</td><td colspan="2">District</td><td>Type of Business</td><td colspan="2">Year of Establishment</td></tr>
<tr><td>Niassa</td><td colspan="2">Lichinga (approx. 10 km from Lichinga City)</td><td>Farming, processing, and retail</td><td colspan="2">2004</td></tr>
<tr><td colspan="3">Production</td><td colspan="2">Land</td><td colspan="2">No. of Employees</td></tr>
<tr><td colspan="3" rowspan="3">• Chickens 18,000 chickens per month
• Macadamia nut: 8.5 tonnes/ year
• Soybean production

*Soybean is produced as feed for the farm’s own chickens.</td><td>Owned</td><td>382 ha</td><td>Permanent</td><td>63</td></tr>
<tr><td>Used</td><td>125 ha (soybeans: 50 ha; macadamia nut: 75 ha)</td><td>Seasonal</td><td>30-40</td></tr>
<tr><td colspan="2">Annual Revenue (Estimate)</td><td colspan="2">Ownership Type</td></tr>
<tr><td colspan="3">• Poultry: MZN 30 million
• Macadamia nut: USD 16,000 in 2012 (1st year of production); USD 50,000 in 2013 (projection), and USD 100,000 (projection) in 2014</td><td colspan="2">Private company
(owned by South African business persons)</td></tr>
<tr><td colspan="7">Constraints to Growth</td></tr>
<tr><td colspan="7">The main constraint has been the difficulty in getting a short-term loan to purchase feed; the company has to allocate most of its cash as working capital, which makes it difficult for the company to invest in expansion.</td></tr>
<tr><td colspan="7">Credit Needs</td></tr>
<tr><td>Amount</td><td>MZN 45 million</td><td>Use</td><td colspan="4">The company plans to invest in the construction of a warehouse, a drying facility and a nursery for Macadamia nut trees, and land clearing for the expansion of its Macadamia nut farm.</td></tr>
<tr><td colspan="7">Conclusion (Credit Demand and its Prerequisites)</td></tr>
<tr><td colspan="7">It would be financially viable to provide a loan to this company because: (1) it has sufficient assets for collateral; (2) its business is stable and run by owners experienced in the poultry business; and (3) for the time being, there is no other poultry businesses of this company’s size in Lichinga and the poultry market has not been saturated. (There is another company that is planning to expand its operation into poultry in Lichinga.)</td></tr>
</table>

<table>
<tr><td rowspan="2">B-2.</td><td>Province</td><td colspan="2">District</td><td>Type of Business</td><td colspan="2">Year of Establishment</td></tr>
<tr><td>Niassa</td><td colspan="2">Lichinga (approx. 15 km from Lichinga City)</td><td>Farming (contract farming is being planned)</td><td colspan="2">2012</td></tr>
<tr><td colspan="3">Production</td><td colspan="2">Land</td><td colspan="2">No. of Employees</td></tr>
<tr><td colspan="3" rowspan="3">Soybean: 1,000 tonnes (2012/13 projection)</td><td>Owned</td><td>3,800 ha</td><td>Permanent</td><td>50</td></tr>
<tr><td>Used</td><td>470 ha</td><td>Seasonal</td><td>50</td></tr>
<tr><td colspan="2">Annual Revenue (Estimate)</td><td colspan="2">Ownership Type</td></tr>
<tr><td colspan="3">USD 550,000 (2012/13 projection)
(USD 550 per tonne; local market price [incl. transportation costs])</td><td colspan="2">Private company
(financed by a UK-based investment company)</td></tr>
<tr><td colspan="7">Constraints to Growth</td></tr>
<tr><td colspan="7">The main constraint to growth is logistics. Due to the poor road conditions, it is difficult, expensive and time-consuming for the company to procure necessary inputs, such as chemicals and fertilizer. As soon as the rain starts, trucks stop coming into Lichinga. According to the Production Director’s experience, it takes two weeks to bring in goods from Maputo by air and three to four weeks by road during the rainy season.</td></tr>
<tr><td colspan="7">Credit Needs</td></tr>
<tr><td>Amount</td><td>MZN 5.2 million</td><td>Use</td><td colspan="4">The company is considering using a low-interest loan for its CSR purposes (i.e. contract farming, and construction of clinics and schools for surrounding villages)</td></tr>
<tr><td colspan="7">Conclusion (Credit Demand and its Prerequisites)</td></tr>
<tr><td colspan="7">It would be financially viable to provide a loan to this company since the company has a sizable plot of land, substantial assets for collateral, and human resources experienced in managing a commercial farm. It has also secured markets. Contract farming will benefit local communities since they can obtain inputs, technical guidance and tractor services, and have a guaranteed buyer.</td></tr>
</table>

B-3.	Province	District	Type of Business	Year of Establishment
	Niassa	Lichinga (in Lichinga City)	Member services	1991

Services	Coverage	Members
• Collective procurement and distribution of inputs • Technical guidance • Conflict resolution on land and other social issues	6 districts in Niassa Province (Lichinga, Sanga, Majune, Muembe, Lago, and N'gauma).	2,050 members in total from 68 associations (23 paid-staff members)
	Annual Revenue (Estimate)	**Ownership Type**
	• Membership fee (no registration fee required) (MZN 23,800 in total [MZN350/association]) • Grants from donors (MZN 1.3 mil in 2012; MZN 1.5 mil in 2011)	Cooperative (registered in 1996)

Constraints to Growth

- The main constraint is the cooperative's donor dependency and an absence of business-oriented thinking.
- Its financial management is unsustainable without external financial support.

Credit Needs

Amount	MZN 7 million	Use	The cooperative would like to use the loan to purchase a truck and a tractor as well as more inputs. It will expand the land to be used by members and provide transportation services (MZN 4,000/50km).

Conclusion (Credit Demand and its Prerequisites)

It is premature to provide a loan to this cooperative since it does not have any experience in engaging in substantial production or business activities. The following management issues must first be addressed before the provision of a loan is considered:

- Trim down the salaries paid to staff;
- Improve its financial management skills; and
- Have a strong business-minded management team with proper incentives.

B-4.	Province	District	Type of Business	Year of Establishment
	Niassa	Lichinga (approx. 10 km from Lichinga City)	Farming	2010

Production	Land		No. of Employees	
• Potato: 19 tonnes • Tomato: 2 tonnes • Cabbage: 2 tonnes • Bean: 3.6 tonnes • Maize : 3.6 tonnes • Onion : 1.5 tonnes	Owned	25 ha (the farmer has two plots of land)	Permanent	6
	Used	12 ha (potato: 2 ha; tomato: 2 ha; cabbage: 1 ha; bean: 3 ha; maize: 3 ha; and onion: 1 ha	Seasonal	4-5
	Annual Revenue (Estimate)		**Ownership Type**	
	Total revenue: MZN 573,662 (potato: MZN 266,000, tomato: MZN 16,800, cabbage: MZN 12,000, bean: MZN 30,240, maize : MZN 6,912, onion: MZN 12,600)		Individual farm (Mozambican)	

Constraints to Growth

Lack of sufficient working capital is its main constraint.

Credit Needs

Amount	MZN 300,000	Use	The farm would like to use the loan to purchase inputs (seed and fertilizer) and expand its cultivated land.

Conclusion (Credit Demand and its Prerequisites)

Given the size of its production, its proximity to Lichinga City and the availability of its own transport means (truck), it would be financially viable to provide a loan to this farm (though there is a need for book-keeping training before the loan is provided). It is at the same time highly advisable to encourage this farm to enter into contract farm agreements with surrounding small farms so that economies of scale in production and transportation can be jointly achieved. The market linkages should also be strengthened in order to increase the business' viability.

B-5	Province	District	Type of Business	Year of Establishment
	Niassa	Lichinga	Farming	N/A

Production	Land		No. of Employees	
• Pigs: 70 pigs • Bananas: 60 tonnes/year • Chickens: 500 chickens/ month *At the time of the visit, the farm did not have any chickens due to the difficulty in arranging the working capital for purchasing inputs.	Owned	91 ha (Naluila:8 ha and Matama: 83 ha)	Permanent	2
	Used	8 ha in Naluila (pigs, bananas and chickens)	Seasonal	several
	Annual Revenue (Estimate)		**Ownership Type**	
	Total revenue: MZN 2,590,000 (pig: MZN 400,000; bananas: MZN 1,200,000; and chickens: MZN 990,000)		Private company (Mozambican, registered more than 10 years ago)	

Constraints to Growth

- The main constraint to growth is the farm's insufficient working capital.
- In 2012, there was a threat from a pig disease caused by a neighbor who brought in disease-infected pigs from an unknown location. To prevent the spread of the disease, the Government ordered all farms within 15 km from the infected farm to kill all the pigs. The company lost more than 200 pigs due to this incident (an MZN 1.2 million loss).

Credit Needs

Amount	MZN 4 million	Use	The farm would like to use the loan to purchase 4 broiler houses and 2 pigsties, construct a dam, install a power-line (for poultry), and obtain working capital for expansion (purchase of inputs).

Conclusion (Credit Demand and its Prerequisites)

Given the size of the revenues that the company has been generating, it would be financially viable to provide a loan to the company (though there is a need for book-keeping training before the loan is provided). It is at the same time highly advisable to encourage the company to enter into a contract farm agreement with the largest poultry farm in operation near the Lichinga City in order to reduce its costs. Under the agreement, the company would obtain a supply of chicks, feed and other necessary inputs (e.g. vaccines) at cheaper prices for its poultry operation. This would also reduce the company's administrative work for arranging input delivery from distanced places like Nampula and Malawi.

B-6.	Province	District	Type of Business	Year of Establishment
	Niassa	Chimbunila (former Lichinga District)	Farming and tractor services	N/A

Production	Land		No. of Employees	
• Maize: 40 tonnes • Potato: 13 tonnes • Bean: 4.3 tonnes • Vegetables and banana: mostly for own consumption	Owned	106 ha	Permanent	7
	Used	64 ha (maize: 39 ha; bean: 12 ha; potato: 5 ha; and other vegetables and bananas: 8 ha)	Seasonal	10-15
	Annual Revenue (Estimate)		**Ownership Type**	
	Total revenue: MZN 372,500 (maize: MZN 200,000, potato: MZN 65,000, bean: MZN 107,500)		Private company (Mozambican, registered in 2012)	

Constraints to Growth

- Due to the location of the farm, its bargaining power is weak. Compared with another farm that is located closer to Lichinga City and has a truck, the selling prices for the company's produce are significantly low.
- The company used to offer tractor services (land-preparation) at MZN 2,000 / ha; however, it had few clients because many people could not afford the service and preferred to do the work manually.
- It lacks financial management capacity (it does not seem to be keeping records of its sales and expenditure).

Credit Needs

Amount	MZN 400,000	Use	The company would like to use the loan to purchase a truck to deliver its produce to Lichinga and Nampula so that it can sell its produce at higher prices.

Conclusion (Credit Demand and its Prerequisites)

Given its accessibility to Lichinga City and the size of its land and production, it would be financially viable to provide a loan to this farm (though there is a need for book-keeping training before the loan is provided). It is at the same time highly advisable to encourage this farm to enter into contract farm agreements with surrounding small farms so that economies of scale in land preparation, production and transportation can be jointly achieved. The market linkages should also be strengthened in order to increase the business' viability.

B-7.	Province	District	Type of Business	Year of Establishment
	Niassa	N'gauma	Farming	N/A

Production	Land		No. of Employees	
• Tobacco: 3.6 tonnes • Maize: 1.6 tonnes • Bean: 2.2 tonnes • Vegetables and bananas: little *This farm produces tobacco as an out-grower for MLT (Mozambique Leaf Tobacco).	Owned	10 ha	Permanent	10
	Used	10 ha (tobacco: 3 ha; maize: 3 ha; bean: 3 ha; and vegetables and bananas: 1 ha)	Seasonal	5-7
	Annual Revenue (Estimate)		**Ownership Type**	
	Total revenue: MZN 203,100 (tobacco: MZN 154,800, maize: MZN 6,560; bean: MZN 41,800; vegetables and bananas: N/A)		Individual farm (Mozambican)	

Constraints to Growth
Main constraints to growth are insufficient storage space and long distances to large markets (e.g. Lichinga, Cuamba, and the border with Malawi).

Credit Needs			
Amount	MZN 200,000	**Use**	The farm would like to use the loan to construct a storage facility.

Conclusion (Credit Demand and its Prerequisites)
It would not be financially viable to provide a loan to this farm due to the small scale of its production. This type of farm should be encouraged to enter into a contract farming agreement with a private company like MLT or a farmers' association with sufficient management skills to supply inputs on credit, provide technical advice, and purchase out-growers' produce.

B-8.	Province	District	Type of Business	Year of Establishment
	Niassa	N'gauma	Member services	2009

Services	Coverage	Member composition
• Procurement and distribution of seed (the cooperative does not have working capital to conduct this activity) • Agricultural extension services • It breeds goats and conducts aquaculture as the cooperative's income generating activities, but has not sold any goats or fish yet.	N`gauma District	220 members in total from 20 associations
	Annual Revenue (Estimate)	**Ownership Type**
	• Membership fee (MZN 12,000 in total) (Annual fee: MZN 600/association) (Registration fee: MZN 100/association) - Grants from donors (MZN 420,000 in 2009; MZN 640,000 in 2012)	Cooperative (registered in 2011)

Constraints to Growth
• The main constraint to growth is the cooperative's absence of business-oriented frame of mind. Due to its dependency on donor's funding, it cannot provide required services without their support. • The local fish market is limited in size. The cooperative does not have access to a larger market.

Credit Needs			
Amount	MZN 280,000	**Use**	The cooperative would like to use a loan as working capital to rent a truck and achieve better market access for its members. (The cost of renting a truck is MZN 8,000 from N'gauma to Cuamba a day.)

Conclusion (Credit Demand and its Prerequisites)
It is premature to provide a loan to this cooperative since it does not have any experience in engaging in substantial production or business activities. The following management issues must be first addressed before the provision of a loan is considered: • Have a strong business-minded management team with proper incentives; and • Have a sound operational plan with sustainable revenue sources to cover its costs (e.g. to engage in purchasing of members' crops and selling them in bulk to traders and produce some profit margins that can be used for operational expenses).

B-9.	Province	District	Type of Business	Year of Establishment
	Niassa	Majune	Farming	2006

Production	Land		No. of Employees	
Commercial farming in: • Soybean: 70 tonnes • Bean: 130 tonnes • Jatropha* * The company plans to terminate its Jatropha production.	Owned	N/A	Permanent	60
	Used	330 ha (soybean and bean: 130 ha; and Jatropha: 200 ha).	Seasonal	30+
	Annual Revenue (Estimate)		**Ownership Type**	
	N/A		Private company (owned by a Swedish-based investment fund)	

Constraints to Growth
• The main constraint to growth is sourcing sufficient capital for the expansion of its operations. • The parent company has been reported to have had land issues with some local community members.

Credit Needs			
Amount	MZN 15 million	**Use**	The company would like to use the loan to convert the Jatropha field into bean and soybean farmland. Towards this end, it plans to construct a storage facility and procure more agricultural machinery and inputs (pesticides, seed, fertilizer, etc.)

Conclusion (Credit Demand and its Prerequisites)
It would be financially viable to provide a loan to this company because: (1) it has sufficient assets for collateral; (2) its management is profit-driven and well-experienced in operating a large-scale commercial farm; and (3) the company has secured markets. However, it should be noted that the investment's social impact will be significantly limited in contrast to its size.

B-10.	Province	District	Type of Business	Year of Establishment
	Niassa	Mandimba (15 km from Mandimba town-center)	Warehouse operation and trading	2011

Services	Service Area	Membership
• Operation and management of a warehouse (30m x 10m) Utilization rate (estimate): 120 days/year • Trading of crops purchased from small-farmers • According to the Mandimba District, 832.8 tonnes of maize was sold from the association's warehouse	60 km radius from Luelele located 15 km from Mandimba town-center	6 members in total
	Annual Revenue (Estimate)	**Ownership Type**
	N/A • The association charges a warehouse space rental fee of MZN 5 per 50kg bag regardless of the period used. • No registration or membership fees	Association (in the process of being registered)

Constraints to Growth
The association has limited experience in managing a warehouse; it does not know how to effectively charge the fee and record the goods going in and out.

Credit Needs			
Amount	N/A	**Use**	The association would like to build a concrete warehouse (the association does not know the cost of the building).

Conclusion (Credit Demand and its Prerequisites)
There is a high need for a well-managed warehouse system with increased storage capacity, given that there is a border point with Malawi within 5km from the Mandimba town-center and there is a constant flow of goods crossing the border. However, it would not be financially viable to provide a loan to this association due to its insufficient management capacity. The following management issues must be first addressed before the provision of a loan is considered: • Have an incentivized management team with sufficient administrative (record-keeping) and financial skills; and • Have a sound operational plan with sustainable revenue sources to cover its costs.

B-11	Province	District	Type of Business	Year of Establishment
	Niassa	Cuamba	Member services	2010

Services	Service Area	Membership
• Collective procurement and distribution of seed • Extension services • Collective bargaining ➢ Sesame: 70,000 kg ➢ Peanut: 7,000 kg ➢ Soybean: 24,000kg ➢ Bean: 1,800 kg ➢ Pigeon Pea: 45,000kg	Cuamba, Mecanhelas, Mandimba, Metarica, Maua, and Nipepe.	550 members (NOTE: The membership can be obtained as a group or an individual. The necessary qualification for becoming a member of this cooperative is to be able to bring minimum 500kg of crops to the collection point in one harvest season.)

Annual Revenue (Estimate)	Ownership Type
• Membership fee: MZN 110,000 (MZN 200/member) • Profit from selling crops: MZN 721,000 • Grants from a donor (e.g. MZN 4.7 mil. in 2011 and MZN 3.8 mil. In 2012)	Cooperative

Constraints to Growth

Its main constraints are high costs (especially staff's salaries) and a lack of business-oriented management.

Credit Needs

Amount	MZN 1.5 million	Use	The cooperative would like to use the loan to carry out trading activities (to purchase crops from members and sell them in bulk to large companies).

Conclusion (Credit Demand and its Prerequisites)

It is premature to provide a loan to this cooperative since its management skills are limited, although the cooperative's accounting system seems to be well established through the technical support provided by CLUSA. The following management issues must be first addressed before the provision of a loan is considered:

- Have an incentivized management team; and
- Have a sound operational plan with sustainable revenue sources to cover its costs.

B-12.	Province	District	Type of Business	Year of Establishment
	Niassa	Cuamba (in Cuamba Town)	Milling	1981

Services	Land		No. of Employees	
• Maize flour milling service 300-600 tonnes/year (depending on the farmers' annual yield) • Sale of packed maize flour* *The company started to produce maize flour packed in 10kg bags in December 2012. The company is still at the stage of working out its operational details (where to purchase maize, where to sell and at what price, etc.)	Owned	N/A	Permanent	5
	Used	N/A	Seasonal	0

Annual Revenue (Estimate)	Ownership Type
• MZN 742,500 (for milling 450 tonnes/year) (MZN 292,500 for hulling* and MZN 450,000 for milling maize into flour) * 60-70% of the customers use the hulling service	Private company (Mozambican)

Constraints to Growth

The seasonal price fluctuation of maize and insufficient working capital are the main constraints. Since prices are low during the harvest season, the company needs to store its maize stock in large quantities.

Credit Needs

Amount	MZN 500,000	Use	The company would like to use the loan to increase the purchase of maize from farmers.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this company given that: (1) the company has a long history of operation, having sufficient assets for collateral; and (2) there is always demand for maize processing services and packed maize flour in Cuamba. The growth of this company will provide local farmers with more opportunities to sell their maize.

B-13.	Province	District	Type of Business	Year of Establishment
	Niassa	Cuamba (35 km from Cuamba Town)	Farming and tractor services	N/A

Production/Services	Land		No. of Employees	
• Farm produce ➢ Maize: 9.8 tonnes (MZN 7/kg) ➢ Cotton: 4.0 tonnes (MZN 10.5/kg) ➢ Bean: 0.8 tonnes (MZN 20/kg) ➢ Rice: 2 tonnes (MZN 25/kg) • Tractor/Transportation Services ➢ Land preparation (MZN 2,700/ha x 50 ha) ➢ Garbage collection in the town (MZN 3,000/month for five months) ➢ Transportation of construction materials (MZN 100,000/year) and crops (MZN 7,000/year)	Owned	45 ha	Permanent	4
	Used	12ha (2011/12), 30ha (2012/13)	Seasonal	10
	Annual Revenue (Estimate)		**Ownership Type**	
	• Farm produce: MZN 110,600 (2011/12) • Tractor services: MZN 400,000		Individual farm (Mozambican)	

Constraints to Growth
The main constraint to growth is the farm's insufficient working capital. For tractor services, customers often request to pay for tractor services on credit and they take a while to repay.

Credit Needs			
Amount	MZN 100,000	**Use**	The company would like to use the loan to clear 10ha of its land and purchase seed to plant on the newly cleared land.

Conclusion (Credit Demand and its Prerequisites)
It would be financially viable to provide a loan to this farm given its access to Cuamba (a strategic location since it is connected to the railway network), the size of its land, and its steady income from the tractor services that the farm is providing to surrounding farms (though there is a need for book-keeping training before the loan is provided). It is at the same time highly advisable to encourage this farm to enter into contract farm agreements with surrounding small farms so that economies of scale in production and transportation can be jointly achieved. The market linkages should also be strengthened in order to increase the business' viability.

B-14.	Province	District	Type of Business	Year of Establishment
	Niassa	Cuamba (approx. 20 km away from Cuamba Town Center)	Farming and tractor services	N/A

Production/Services	Land		No. of Employees	
• Farm produce ➢ Cotton: 19 tonnes (MZN10.5/kg) ➢ Maize: 23 bags (60kg) (MZN 4/kg) • Tractor/transportation services ➢ Land preparation (MZN 2,700/ha x 113 ha) ➢ Garbage collection service (MZN 3,000/month for two months) ➢ Transportation of construction materials (MZN 90,000/year) and crops (MZN 5,000/year)	Owned	23 ha	Permanent	2
	Used	23 ha	Seasonal	10
	Annual Revenue (Estimate)		**Ownership Type**	
	Farm produce: MZN 205,000 Tractor services: MZN460,000		Individual farm (Mozambican)	

Constraints to Growth
The main constraint to growth is the fluctuation of cotton prices. The number of customers for tractor services is significantly affected by cotton prices (when the cotton price is low, many tractor service clients cannot afford the service).

Credit Needs			
Amount	N/A	**Use**	The farm would like to use the loan to expand the farmland to 50 ha.

Conclusion (Credit Demand and its Prerequisites)
Same as B-13.

B-15.	Province	District	Type of Business	Year of Establishment
	Niassa	Mechanhelas (Entré-Lagos, border town with Malawi, 25 km from the town-center)	Processing retail/wholesale shops	1998

Services	Land		No. of Employees	
• Maize processing service* ➢ Maize: 5 tonnes/day • Rice processing service* ➢ Rice: 5 tonnes/day • Operation of two shops (wholesale and retail) *In 2012, the company received rice and maize processing machines on credit.	Owned	N/A	Permanent	10
	Used	N/A	Seasonal	0
	Annual Revenue (Estimate)		**Ownership Type**	
	Processing: MZN 2,1400,000 Shops: N/A		Private company (Mozambican)	

Constraints to Growth
The main constraint is that the company does not have sufficient working capital to purchase a sufficient amount of rice and maize to produce packed, processed rice and maize.

Credit Needs			
Amount	MZN 6 million	**Use**	The company would like to use the loan to purchase a tractor and increase the size of the cultivated land to 60 ha for maize and 40 ha for rice.

Conclusion (Credit Demand and its Prerequisites)
It would be financially viable to provide a loan to this company because: (1) there is always a demand for maize and rice processing services and packed maize flour and rice for home consumption; (2) the company has substantial assets for collateral; and (3) the company is managed by a man of business acumen, judging from the history of the company.

B-16.	Province	District	Type of Business	Year of Establishment
	Niassa	Mechanhelas	Member services	2000

Services	Coverage	Members
• Procurement and distribution of seed • Extension services • Provision of technical support to strengthen member associations' governance • Marketing (negotiation of crop price with buyers)	Mechanhelas District-wide	508 members in total from 18 associations
	Annual Revenue (Estimate)	**Ownership Type**
	• Membership fee (MZN 2,700 a year in total [MZN150/association]) (Registration fee: MZN200/association) • Sales of soybean: MZN 132,000/year (This cooperative owns 7 ha of land, which is used to produce soybean (12 tonnes/ year) in order to finance its activities.)	Cooperative (registered in 2000)

Constraints to Growth
The cooperative cannot provide members with services, such as collective purchase of seed and fertilizer, due to a lack of working capital, and its poor organizational and financial management capacity.

Credit Needs			
Amount	N/A	**Use**	The cooperative would like to use the loan to expand the land size from 7 ha to 50 ha, and to purchase a rice processing machine in order to earn income from processing fees.

Conclusion (Credit Demand and its Prerequisites)
It is premature to provide a loan to this cooperative since it does not have experience in engaging in substantial production or business activities. The following management issues must first be addressed before the provision of a loan is considered: • Have an incentivized management team; • Improve its record-keeping skills; and • Have a sound business plan

Appendix 6 Interviewed Agribusinesses and Farms in Zambézia Province

C-1.	Province	District	Type of Business	Year of Establishment
	Zambézia	Gurué (65 km from the Gurué town-center)	Farming and contract farming	2009

Production	Land		No. of Employees	
• Soy bean: 220 tonnes (2011/12) • Soy bean seed	Owned	2,300 ha	Permanent	52
	Used	Own farm: 683 ha (2012/13) Out-growers: 530 ha (2012/13)	Seasonal	160
			Out-growers	62
	Annual Revenue (Estimate)		**Ownership Type**	
	N/A		Private company (owned by an American investment company, incorporated in Mauritius)	

Constraints to Growth
Accessing loans has been a challenge for the company.

Credit Needs			
Amount	MZN 4.5 million	**Use**	The company would like to purchase two tractors and buy inputs for its out-grower scheme.

Conclusion (Credit Demand and its Prerequisites)
It would be financially viable to provide a loan to this company because: (1) it has substantial assets for collateral; (2) it is managed by individuals who are highly experienced in farm management and forward thinking (determined); and (3) the market is secured since buyers come to the farm to buy the produce.

C-2.	Province	District	Type of Business	Year of Establishment
	Zambézia	Gurué (55 km from the Gurué town-center)	Farming (Contract farming is being planned.)	2009

Production	Land		No. of Employees	
• Soybean • Soybean seed	Owned	10,000 ha	Permanent	120
	Used	1,000 ha (2012/13)	Seasonal	400
	Annual Revenue (Estimate)		**Ownership Type**	
	N/A		Private Company (funded by two private equity funds from Portugal and the Netherlands)	

Constraints to Growth
Logistics is one of the major constraints on growth. When transporting inputs from Maputo or other locations, the company hires a truck, rather than working with logistics companies that follow the same routes. Among the options that are currently available, renting a whole truck is the best option; however it is still costly.

Credit Needs			
Amount	N/A	**Use**	N/A

Conclusion (Credit Demand and its Prerequisites)
There is no credit demand from this company (the company is not interested in obtaining a loan). However, the company plans to conduct contract farming in the near future. Through a contract farming scheme, farmers can obtain loans from commercial banks using sales agreements with the company as collateral to expand their farming operations.

C-3.	Province	District	Type of Business	Year of Establishment
	Zambézia	Gurué (75 km from the Gurué town-center)	Farming	2012

Production	Land		No. of Employees	
• Soy beans • Maize • Cotton	Owned	1,000 ha	Permanent	77
	Used	411.5 ha (2012/13) (soybean: 370 ha; maize: 15 ha; and cotton: 26.5 ha).	Seasonal	220
	Annual Revenue (Estimate)		**Ownership Type**	
	N/A		Private company (owned by three companies from Mozambique, Portugal, and Brazil)	

Constraints to Growth
The company identifies following two factors as potential hindering factors on growth as both of them are highly time consuming: (1) authorization from the Central Bank for cross-border lending; and (2) DUAT application.

Credit Needs			
Amount	N/A	**Use**	The company would like to purchase two tractors and buy inputs for the out-grower scheme and conduct land expansion.

Conclusion (Credit Demand and its Prerequisites)
Same as C-2.

C-4.	Province	District	Type of Business	Year of Establishment
	Zambézia	Gurué (outskirts of the Gurué town-center)	Processing	2001

Production	Land		No. of Employees	
Pigeon pea processing (for the material of daal): 7,000 tonnes/ year	Owned	N/A	Permanent	35
	Used	N/A	Seasonal	100
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 315 million Selling price (gate price): MZN 45/kg		Private company (subsidiary of a multinational company)	

Constraints to Growth			
None			
Amount	N/A	**Use**	N/A

Conclusion (Credit Demand and its Prerequisites)
The company is not interested in obtaining a loan. Since the company plans to increase its production, it would be beneficial for farmers to increase the production of raw materials (pigeon pea). This can be achieved through contract farming. Farmers can enter into a sales agreement with the company and use it as collateral to obtain a loan from a commercial bank.

C-5.	Province	District	Type of Business	Year of Establishment
	Zambézia	Gurué	Trading	2003

Production	Land		No. of Employees	
Trading of the following crops: • Maize: 4,000 tonnes/year • Pigeon pea: 7,000 tonnes/year • Soybean: 800 tonnes/year Note: The company is also engaged in the operation and rental of several retail shops in Zambézia and Nampula Provinces.	Owned	N/A	Permanent	26
	Used	N/A	Seasonal	80
	Annual Revenue (Estimate)		**Ownership Type**	
	(Estimate) • Maize: MZN 28,500,000 • Pigeon pea: MZN 89,250,000 • Soybean: N/A		Private company (Bangladesh)	

Constraints to Growth

- The main constraint is that the company does not have sufficient working capital to expand its trading operation. When the company receives advance payments from the Indian-owned company (buyer) for purchasing crops, the selling price to the Indian –owned company becomes lower compared with that of other clients.
- Another constraint to the company's growth is heavy government taxes.

Credit Needs

Amount	MZN 15 million	Use	The company would like to purchase 10,000 tonnes of maize and 5,000 tonnes of pigeon pea and sell them to various trading companies.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to the company because: (1) it has substantial assets for collateral; (2) it is run by a man of business acumen, judging from the history of the company; and (3) unlike providing a loan to the weather-dependent production segment of the agriculture sector, it is less risky to provide a loan for trading.

C-6.	Province	District	Type of Business	Year of Establishment
	Zambézia	Gurué	Member services	2006 (with the support of World Vision)

Services	Coverage	Member composition	
• Seed distribution • Extension services • Collective bargaining • Operation and management of a warehouse	Gurué District	The association is comprised of: • 11 forums (each forum is comprised of 10 associations) • 127 associations (each association is comprised of 30-50 members) • 5,237 members	
	Annual Revenue (Estimate)		**Ownership Type**
	Total revenue: N/A (No registration or membership fees) • The association obtains its operating costs from: (1) profits from selling crops; (2) transportation services using its tractor; and (3) warehouse space rental.		Association (registered in 2008)

Constraints to Growth

The association's constraints are insufficient working capital and a lack of business skills to find more buyers for member forums' produce. According to the association, a donor that the association has entered into a sales contracts with takes a couple of months to make payments after the delivery of crops, during which period the maize's market prices increase.

Credit Needs

Amount	N/A	Use	The association would like to use a loan (or a donor grant) to improve the warehouse by putting a concrete floor and to purchase more crops from its members to sell.

Conclusion (Credit Demand and its Prerequisites)

It is premature to provide a loan to this association since it does not have experience in engaging in substantial production or business activities. The following management issues must be first addressed before the provision of a loan is considered:

- Have an incentivized management team;
- Improve its record-keeping skills; and
- Have a sound business plan

C-7.	Province	District	Type of Business	Year of Establishment
	Zambézia	Gurué (pilot site)	Milling and retails	2012

Production	Branches	No. of Employees	
• Maize milling services: 2 tonnes/day/each mill (projection); operation: 300 days a year • Sale of the company- branded packed maize flour • Sale of poultry feed • Retail sale of other traded commodities and the company-branded products	The company has (will soon have) branches in Anchilo, Namialo, Gurué, Mecuburi,* and Maneica.* * They will be opened by April 2013.	Permanent	17
		Seasonal	0
	Annual Revenue (Estimate)	**Ownership Type**	
	Revenue: N/A • An American NGO has been providing working capital; however this will end in July 2013	Private company (99% of equity is owned by an American NGO).	

Constraints to Growth

N/A

Credit Needs

Amount	N/A	Use	Since the company plans to implement a franchisee-scheme, the company would like to support franchisees in obtaining loans for start-ups (each franchisee would need up to USD 30,000 to purchase milling equipment and the franchise fee to the company.) The size of a loan will depend on the milling equipment the franchisee candidate already has.

Conclusion (Credit Demand and its Prerequisites)

It is premature to evaluate the feasibility of providing a loan to this company since its operations are still in the pilot stage.

C-8	Province	District	Type of Business	Year of Establishment
	Zambézia	Alto Molocue (40 km from the main road)	Farming, seed production, and contract farming	2008

Type of Produce/Services	Land		No. of Employees	
<u>Own Farm</u> (2009/10) • Seed ➢ Maize: 110 tonnes ➢ Cow pea: 50 tonnes ➢ Sorghum: 4 tonnes ➢ Soybean: 5 tonnes • Various vegetables (cabbage, green pepper, tomato, carrot, etc.) <u>Contract farming</u> (2009/10) • Soybean: 350-450 tonnes	Owned	1,250 ha (the company also owns 100 ha in Maputo)	Permanent	15
			Seasonal	60-100
	Used	200 ha	Out-growers	450
	Annual Revenue (Estimate)		**Ownership Type**	
	(2009) • Sales of crops: MZN 1.9 million • Grants from donors: MZN 2.9 million		Private company (Mozambican)	

Constraints to Growth

Accessing loans has been a challenge for the company.

Credit Needs

Amount	MZN 54 million	Use	The company would like to use the loan for: (1) construction of a warehouse; (2) purchase of various agricultural machinery and equipment (e.g. seed processing machines and tractors); (3) land expansion for seed production; and (4) contract farming.

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this company because: (1) it has sufficient assets for collateral; (2) the owner has good business skills; and (3) the market is secured since the company has bargaining power, owning a warehouse and trucks. The company has been working closely with various international NGOs and government projects in supporting the establishment of farmers' associations and providing extension services.

C-9.	Province	District	Type of Business	Year of Establishment
	Zambézia	Alto Molocue (in Alto Molocue Town)	Farming and processing	2007

Production	Land		No. of Employees	
• Processing of cashew nut: 288 tonnes/year. • Production and processing of maize. • Production of pigeon pea sesame, and soybean.	Owned	3,480 ha	Permanent	10
	Used	4 ha (site for processing plant) 2,000 ha (production of maize, sesame and soybean)	Seasonal	400
	Annual Revenue (Estimate)		**Ownership Type**	
	MZN 40 million Selling price of cashew nut: 130-150 MZN/kg.		Private company (Indian)	

Constraints to Growth

This company is providing a sales outlet to local small-scale cashew nut farmers since there are no other cashew processing plants in Alt Molocue. One of the issues in the production process is that the quality of harvested raw cashew nut varies because of a lack of proper treatment of the trees. Therefore, the company purchases cashew nut at a low price, expecting that a certain portion of the purchased raw cashew nut is of lower quality. Low quality cashew nut is sorted out in the grading process in the plant and is sold only at a lower price after the processing. A holistic approach, including techniques and finance, will be needed to improve the quality of raw cashew nut, which will lead to an increase in farmers' income.

Credit Needs

Amount	N/A	**Use**	N/A

Conclusion (Credit Demand and its Prerequisites)

This company does not need any external funding since its funds are provided by its parent company.
Support to farmers for better treatment of old cashew trees as well as for the renewal of cashew trees will benefit both the company and farmers.

C-10	Province	District	Type of Business	Year of Establishment
	Zambézia	Alto Molocue (in Alto Molocue City)	Member services	2008

Type of Services	Coverage	Members
• Collective procurement and distribution of inputs • Extension services • Free transportation • Free storage service • Facilitation of market linkage Maize: 3,000 tonnes/year (2011-2012)	Alto Molocue District.	1,258 members in total from 55 associations.
	Annual Revenue (Estimate)	**Ownership Type**
	• Membership fee (MZN 301,920 a year in total) (MZN 50 as a registration fee required) • Sales of maize: MZN 21 million	Farmers' union (registered in 2008)

Constraints to Growth

- The major constraint to growth for the company is the high cost for land preparation (plowing, leveling). It usually costs more than MZN 4,000 / ha to prepare land using private company's services, and most of the member associations cannot afford to use these services.
- There is no seed shop in Alto Molocue. Because of the absence of a seed shop, farmers cannot sow seed at proper times at proper quantities.

Credit Needs

Amount	MZN 2 million	**Use**	The union would like to purchase a processing unit for maize (a packing machine, a building for a plant, and a generator).

Conclusion (Credit Demand and its Prerequisites)

It would be financially viable to provide a loan to this union because:(1) the union has stable buyers and sufficient collateral to secure the loan. The union also has experience in repaying loans; and
(2) the sale of processed maize is also secured. Demand for processed maize is relatively high in Alto Molocue partly because there are only small-scale maize mills with limited processing capacity and partly because there is a high demand for maize flour in the coastal areas of Zambézia (Pebane, Bajone, Moebase). Both maize flour and animal feed will be sold in Nampula City to which access from Alto Molocue is easy via National Road No.8.