Triangular Cooperation for Agricultural Development of the Tropical Savannah in Mozambique

SUPPORT AGRICULTURE DEVELOPMENT MASTER PLAN FOR NACALA CORRIDOR IN MOZAMBIQUE (PROSAVANA-PD)

TRIANGULAR WORK PLAN

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Abbreviations / Abreviaturas

	Inglês	Português
ABC	Brazilian Cooperation Agency	Agencia Brasileira de Cooperação
CAMPO	The company of Agricultural Promotion	Companhia de Promocao Agricola
CENACARTA	National Center of Cartgraphy and Remorte Sensing	Centro Nacional de Cartografía e Teledeteccão
C/P	Counterpart	Counterpart
CPI	Investment Promotion Centre	Centro de Promocao de Investimentos
CSR	Company's Social Responsibility	Responsabilidade Social da empresa
EIA	Environment Impact Assessment	Estudo de Impacto Ambiental
EMBRAPA	Brazilian Agricultural Research Corporation	Empresa Brasileira de Pesquisa Agropecuária
FGV	Getulio Vargas Fundation	Fundacao Getulio Vargas
F/S	Feasibility Study	Estudo de Viabilidade
GIS	Geographic Information System	Sistema de Informação Geográfica
GDP	Gross Domestic Product	Produto Interno Bruto
IIAM	Agriculture Research Institute of Mozambique	Instituto de Investigação Agrária de Moçambique
INAM	National Institute of Meteorology of Mozambique	Instituto National de Meteorologia de Moçqmbique
INE	National Statistic Institute	Instituto National de Estatistica
JCC	Joint Coordinating Committee	-
JICA	Japan International Cooperation Agency	Agencia de Cooperacao Internacional do Japao
MINAG	Ministry of Agriculture	Ministerio da Agricultura
NGO (ONG)	Non Government Organisation	Organização Não Governamental
OJT	On the Job Training	-
PAPA	Action Plan for Food Production	Plano de Acão para a Producão de Alimentos
PARPA	The Action Program for Reduction of Absolute Poverty	Programa de Ação para Redução de Pobreza Absoluta
PCM	Project Cycle Management	- 1
PDM	Project Design Matrix	-
PEDSA	The Strategic Plan for the Agricultural Sector Development	Plano Estratégico para oDesenvolvimento do Sector Agrário
ProSAVANA-JBM	Triangular Cooperation Programme for Agriculture Development of the African Tropical Savannah among Japan, Brazil, and Mozambique	Programa de Cooperação Triangular para o Desenvolvimento Agrícola da Savana Tropical de Moçambique – Japão, Brasil e Moçambique
QIP	Quick Impact Project	Projetos de Rápido Impacto
RAI	Responsible Agricultural Investment	Investimento Agrícola Responsável
R/D	Record of Discussion	Registro da Discussão
TICAD	Tokyo International Conference on African Development	Conferência Internacional de Tokyo para o Desenvolvimento Africano
TOR	Term of Reference	Termo de Referência
UNCDF	United Nations Capital Development Fund	Fundo de Desenvolvimento de Capital das Nações Unidas

CHAPTER 1 OUTLINE OF THE PROJECT

1.1. Background of the Project

The tropical savannah area in northern Mozambique is considered to have large potential for agricultural production due to adequate rainfall and vast arable land. However, in this area, many agricultural lands are not yet developed, and small-scale farmers apply traditional and extensive agricultural techniques so the productivities of self-consuming crops and commercial crops are low. Even for medium or large-scale farmers, the applied agricultural technologies are very limited and their productivity is not very high. Therefore, enhancement of the agricultural areas by introducing the proper agricultural techniques and investment strategies will significantly increase productivity and the produced amount.

Based on the background mentioned above, the basic framework for the program on the triangular cooperation for tropical savannah agricultural development in Mozambique (ProSAVANA-JBM) was signed in September 2009 and targeted poverty mitigation among small-scale farmers, food security, and agricultural development in the tropical savannah through the effective application of private investigation. Based on the framework, the Preparatory Study on Triangular Cooperation Programme started at the same time.

In promoting ProSAVANA-JBM, there are many constraints regarding support for small-scale farmers: an insufficient number and capacity of agricultural extension workers, a lack of agricultural input, post-harvest facilities, infrastructure for distribution systems and financial institutions, weak farmer organizations and the poor capacity of the Ministry of Agriculture.

With that, the Government of Mozambique has requested proposal of a correspondence plan for the constraints and to support preparation of an Agricultural Development Master Plan for the Nacala Corridor, which is located in the north tropic savannah in Mozambique from Nacala City, which has a good seaport, to Lichinga, the capital of Niassa Province in the northwest of the country. Upon this request, JICA and ABC implemented a preparatory study from July 2011 and the framework of the study was agreed upon by the Government of Mozambique, the Government of Brazil and Government of Japan.

Important background documents are shown below:

Basic Agreement on Technical Cooperation between the Government of Japan and the Government of Federal Republic of Brazil, signed on September 22, 1970

Basic Agreement: General Cooperation Agreement between Government of Federative Republic of Brazil and Government of Mozambique signed on September 15, 1981.

Record of Discussion on the Japan - Brazil Partnership Program, signed on March 28, 2000

Basic Agreement on Technical Cooperation between the Government of Japan and Government of Republic of Mozambique, signed on March 2, 2005

Memorandum of Understanding on the Technical Cooperation between Japan, Brazil and Mozambique, signed on September 12, 2009

Minutes of Meeting: on Triangular Cooperation for Agricultural Development of the Tropical Savannah in Mozambique, among Japan, Brazil and Mozambique, signed on September 17, 2009.

Minutes of Meeting on the Detailed Planning Survey on Triangular Agreement for Project of Agriculture Development Master Plan for the Nacala Corridor in Mozambique, agreed between JICA, ABC and authorities concerned of the Government of the Republic of Mozambique, signed on July 28, 2011

Minutes of the Meeting on Triangular Cooperation Programme for Tropical Savannah Agricultural Development in Mozambique among Ministry of Agriculture of Mozambique, Brazilian Cooperation Agency and Japan International Cooperation Agency, signed on August 29, 2011

Triangular Cooperation Project (TCP) Document between Japan - Brazil - Mozambique under the framework of Japan Brazil Partnership Programme - JBPP, BRA/04/44 JBPP/PCJ/011-ProSAVANA JBM, Support of Agricultural Development Master Plan for the Nacala Corridor in Mozambique (ProSAVANA-PD), signed on November 24, 2011.

Record of Discussions (R/D) on Support of Agriculture Development Master Plan for the Nacala Corridor in Mozambique agreed upon between Ministry of Agriculture, the Government of Republic of Mozambique and Japan International Cooperation Agency, signed on December 2⁹ 2011.

1.2. Objectives and Outputs of the Project

The objectives of the Study are:

To formulate an Agricultural Development Master Plan that contributes to social and economic development by engaging private investment to promote a sustainable production system and poverty reduction in the Nacala Corridor.

Many agricultural similarities are recognized between tropical savannah in Mozambique and the Cerrado in Brazil. Extensive and cumulative knowledge on Cerrado development has been obtained through 30 years of experience in Brazil and can be applied to agricultural development in tropical savannah areas. For agricultural development in the Nacala Corridor, each technique applied in Cerrado development could be transferable.

About half of the tropical savannah on the globe exists in Africa and vast amounts of unused potential arable land are available. The Government of Japan is supporting the development of Africa strongly as represented by the Tokyo International Conference on African Development (TICAD). Brazil is strengthening foreign assistance focusing on African Countries. Meanwhile, African countries are looking for a chance to improve economic growth through agricultural development. Moreover, the world market is looking for new food production and export bases. Therefore, the development of the "Nacala Corridor Model," is expected to direct benefit African countries and indirectly other countries of the world.

The Project summary is shown in Table 1-1 below.

Table 1-1 Project Summary

	Project Summary
Study Area	The Nacala Corridor area, consisting of 14 districts in 3 Provinces, Nampula, Niassa and Zambezia, in the northern part of Mozambique. (65,907 km², 8.7% of country) Study Area in Nampula: Malema, Ribaue, Murrupula, Nampula, Meconta, Mogovolas, Muecate, Monapo In Niassa: Cuamba, Mandimba, Ngauma, Lichinga In Zambezia: Gurue, Alto Morocue The discussion or investigation will be conducted in San-Paulo, Brasilia and other areas in Brazil if necessary.
Implementation Organization	Ministry of Agriculture: (MINAG)
Duration	For Japanese Side: February 2012 to September 2013.(about 19 months) For Brazilian Side: July 2012 to January 2014 (about 18 months)
Goal of the proposed plan	To promote economic and social development through agricultural development in the Nacala Corridor.
Purpose	To formulate an Agricultural Development Master Plan that contributes to social and economic development by engaging private investment to promote a sustainable production system and poverty

	reduction in the Nacala Corridor
Outputs	Data collection and analysis of agriculture in the Nacala Corridor
	2) Drawing of an overall picture of agricultural development plans
	3) Planning of Quick Impact Projects (QIPs) for selected areas in the Nacala Corridor
	4) Engagement simulation of stakeholders focusing on investment promotion
Activities	[Activities for Output 1: Data collection and information analysis]
	1-1 Analysis of the current legislation and framework on labor, land tenure, environmental regulation
	and taxes
	1-2 Review of socioeconomic census, existing overall economic development plans and agricultural
	development plans for the Nacala Corridor
	1-3 Study on social, gender and environment aspects
	1-4 Information gathering for functions and interventions of the governments, NGOs, donors and
	financing institutions for agricultural development
	1-5 Zoning of the Nacala Corridor area based on agricultural environment
	1-6 Study on current agricultural chains in the Nacala Corridor
	1-7 Situation survey on land use in the Nacala Corridor
	1-8 Study on overall infrastructure and supply chain for agriculture in the Nacala Corridor
	2. [Activities for Output 2: Drawing of an overall picture]
	2-1 Drawing an overall plan (blueprint) of agricultural development in the Nacala Corridor
	3. [Activities for Output 3: Quick impact project planning]
	3-1 Characterization of selected areas which have agricultural development potential based on basic survey as above
	3-2 Formulation of quick impact projects (QIPs) for target areas
	3-3 Prioritization of QIPs
	3-4 Attract investors for the implementation of prioritized QIPs
	4. [Activities for Output 4: Engagement simulation of stakeholders focusing on investment promotion]
	4-1 Elaboration and presentation of Data Book to private investors
	4-2 Holding seminars and workshops for stakeholders

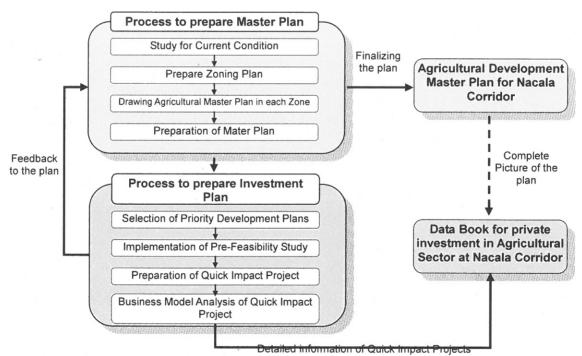


Figure 1-1 Concept of the Study for Support of Agriculture Development Master Plan for the Nacala Corridor in Mozambique

1.3. Related Projects for the Nacala Corridor Development

This Study will be implemented under the framework of "The Triangular Cooperation Programme for Agriculture Development of the African Tropical Savannah in Mozambique (ProSAVANA-JBM)," which was agreed among Japan International Cooperation Agency (JICA), Brazilian Cooperation Agency (ABC) and the Ministry of Agriculture (MINAG) of Mozambique in September 2009.

At present, one part of the ProSAVANA-JBM Program, "The Project for Improving Research and Technology Transfer Capacity for the Nacala Corridor Agriculture Development, Mozambique (ProSAVANA-PI)" has been started since 2011. Moreover, separate from this Study, "Technical Cooperation Project of Improvement of Agricultural Extension in the Nacala Corridor" is under preparation. The Master Plan Study and the other two ProSAVANA-JBM Projects are also categorized in "Nacala Corridor Development Program" of JICA. The Program aims at comprehensive socio-economical development in the Nacala Corridor through infrastructure development of road networks and port expansion in addition to the agricultural development through ProSAVANA-JBM. As a part of this Program, "The Study for Economic Development Strategies for the Nacala Corridor, Mozambique" will begin April 2012. Through this Economic Development Study, a comprehensive development plan for the Nacala Corridor will be prepared and this Study will specifically focus on agricultural development, so that as a result of the program, the integrated regional development approach can be expected.

Table 1-3 Implementation Schedules of Projects Related to the Nacala Corridor Development

Program of JICA

	Project Year	2010	2011	2012	2013	2014	2015
Nacala	ProSAVANA-JBM		1	 	l	1	1
Corridor	1) Preparatory Study on Triangular Cooperation Programme			!	ı	ı	:
Development	for Agricultural Development of the African Tropical		į	į			
Program	Savannah among Japan, Brazil and Mozambique		!			:	1
	(ProSAVANA-JBM)			1		'	
	2) The Project for Improving Research and Technology Transfer Capacity for the Nacala Corridor Agriculture			!			
9	Development, Mozambique (ProSAVANA-PI)						1
	Support of Agriculture Development Master Plan for the Nacala Corridor in Mozambique (ProSAVANA-PD)		! !	4	→	ı	1
	4) Technical Cooperation Project of Improvement of		1		-		
	Agricultural Extension in the Nacala Corridor (tentative		!		1	I	
	ProSAVANA-PE)				1	1	
	Economic Infrastructure Development		1			ı	
	Economic Development Strategies for the Nacala Corridor,		1	-		:	
	Mozambique (JICA)		!	1		ı	

Here, in the "Project for Improving Research and Technology Transfer Capacity for the Nacala Corridor Agriculture Development, Mozambique (ProSAVANA-PI)", the following outputs are included: 1) Capacity of IIAM research centers in Northeast and Northwest is strengthened, 2) Natural resources and socio-economic conditions in the Nacala Corridor are evaluated, 3) Soil improvement technology for the Nacala Corridor is developed, 4) Appropriate cultivation technology for the Nacala Corridor is developed, and 5) New agricultural technology developed/validated is implemented in the demonstration units. The land-use plan/ and selection of proper crop varieties are related to this Study, but most of outputs of the ProSAVANA-PI will not be able to be used for the master plan formulation due to their schedule. Therefore, the Study Team should communicate closely with the Project (PI) and reflect their progress results into the Study.

1.4. Structure of Project Implementation

The Study is implemented by the triangular cooperation among Mozambican, Brazilian and Japanese experts.

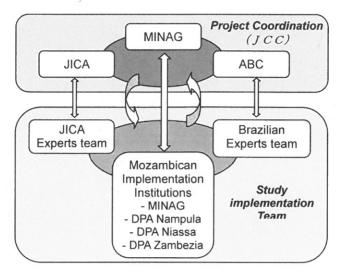


Figure 1-2 Implementation Structure of ProSAVANA-PD

Field of the experts are described in the BRA;04;044-JBPP;PCJ;011-PROSAVANA JBM signed on December 24, 2011 among three countries representative as follows:

Table 1-5 Divisions of the Roles of the Project among Mozambique, Japan and Brazil

Field	<i>-</i>	Assignment		Quarter							
Fleiu	Mozambique	Japan	Brazil	1	2	3	4	5	6		
Agricultural Development	0	0	0								
Agricultural Infrastructure	0	0	0								
Transportation and Social Infrastructure	0	0									
Farming	0	0									
Organization of Farmers	0	0									
Post Harvest	0	0									
GIS	0	0	0								
Analysis of Business Model	0	0	0								
Investment Promotion	0	0	0								
EIA	0	0									
Land Use System	0	0	0								
Law System	0	0	0								
Analysis of Agricultural Value Chain	0	0	0								
Agri-business	0	0	0								
Administrative Coordinator	0	0	0								

CHAPTER 2 METHODOLOGY OF THE STUDY

2.1 Consistency of Agricultural Development Strategy of Mozambique and Agricultural Development Master Plan in the Nacala Corridor

Among the related development policies of Mozambique, the "4th National Development Plan (Government 5-year plan: 2010 - 2014)" is the overall plan, and "The Action Program for Reduction of Absolute Poverty (Programa de Ação para Redução de Pobreza Absoluta: PARPA) III 2010 - 2014" and "The Strategic Plan for the Agricultural Sector Development (Plano Estratégico para o Desenvolvimento do Sector Agrário PEDSA 2011 - 2020)" are under it. Continuing these plans, there is a provincial development plan and a district development plan. Coordination between the central government, local governments, provinces and districts are assured through these plans.

The vision of PEDSA(2010-2020) is the "A prosperous, competitive and sustainable agriculture sector, capable of providing sustainable responses to food security and nutrition challenges and targets agriculture markets globally" The mission of PEDSA set as "Contribute to food security and income of agriculture producers in a sustainable and competitive manner ensuring social and gender equity". Main pillars are shown below.

- Increase productivity and production, competitiveness and its contribution to food security and nutrition
- Improve guiding framework and services for more market access
- Sustainable use of water, forests, fauna and land resources
- Strengthen institutions and organizations for agriculture development

On the other hand, the project purpose of Agriculture Development Master Plan for the Nacala Corridor is "contributes to social and economic development by engaging private investment to promote a sustainable production system and poverty reduction in the Nacala Corridor." As mentioned, PEDSA aims for "achievement of a sustainable agricultural sector with competitiveness. Therefore, agricultural development in the Nacala Corridor is in accordance with the agricultural development policy of Mozambique. Moreover, the plan to strengthen the competitiveness of agricultural products in the Nacala Corridor and measures to expand investment will be recommended in the Study based on analysis for agro-environment basis zoning and value chain. Therefore, this Study has high correlation with PEDSA aiming at strengthening the agricultural sector.

2.2 Development for High Value Added Agriculture

(1) Value Chain

Agriculture in the Nacala Corridor is presently characterized by small-size farming and a small-scale market. On the other hand, the agricultural products produced in the area issue high value through distribution. For maize, produced by small-size farmers for self-consumption, the final product was valued at 9 times the raw material if processed. On the other hand, sesame is exported as raw sesame seed and its added value is small, even though it can be processed into edible oil to obtain a high added value.

In a study on agricultural development, it is generally considered that increasing agricultural input, improving seeds, and increasing productivity with irrigation. However, in addition to the low agricultural productivity, it can be pointed out as a constraint of agriculture in the Nacala Corridor that the additional value of products is not increased during distribution so the value chain is not yet constructed. When value is added on the product through distribution, a stakeholder involved from production to selling can get a profit. If constraints exist in post-harvest or agricultural processing, the benefit originally intended for the farmer is consumed by the cost in distribution. As a result, the purchased price (farm gate price) of

products is kept low, and it prevents generation of income and growth of livelihood.

Therefore, it is reasonable to study how the agricultural processing industry can become the core of development strategy in the Agricultural Development Master Plan in the Nacala Corridor, when traditional agriculture and surrounding economical conditions in the area are considered.

By the growth of agricultural processing industry in the area, creation of a new market for agricultural products and new employment opportunities can be expected. In the Nacala Corridor, cashew nuts, tobacco and cotton are the existing processing industries. These industries function to improve the vulnerability of the rural economy and to prevent population drain to urban areas, which results in increased poverty in urban suburbs. With the objective of rural development, it is important to strengthen cooperation between agriculture production and the processing industry to protect rural society.

On the other hand, it is important to select crops that are easily usable and efficiently connected to the processing industry in the selection of target crops for agricultural development. In the examination of future agricultural processing industry, it is necessary to promote high level processing to produce the final product, not low processing like the primary or secondary processing currently being done in the Nacala Corridor. By increasing the level of processing for the final product, the added value will also increase. For example, animal meat (beef, chicken, pork) is a high profit export, so setting it as a final product will improve and strengthen the related industries. Thus, it is promoted as a development model project.

(2) Agriculture Cluster

In order to promote the agricultural processing industry, a synergetic effect of industrial development through agricultural products as raw material, primary, secondary and tertiary processed (final) products and related industries (agribusiness) is required. To achieve this, it is recommended to apply a strategic agriculture cluster for development. Here, the cluster means several groups of industries related to each other by input and output who are involved in the production process from the raw agricultural products to the final product. Defining "the Cluster" with a minor role, agricultural development in the Nacala Corridor can be focused on considering effective measures. Moreover, it is more realistic and applicable as a development model to strengthen competitiveness of the agricultural cluster than to study methods to increase yields of specific crops or export competitiveness of processed products.

The methodology for identification of cluster is shown in the following table:

Table 2-1 Methodology for Identification Cluster

Definitions

- 1) Development clusters drive and facilitate the growth of key industry sectors as identified in the Master Plan.
- 2) Management Level refers to potential land use and social and environmental sustainability. A weighted numeric evaluation system of key factors related to the land, to the society and to the environment permits identification of the most appropriate management structure for the development of the region.
- 3) This evaluation ensures coherent sizing and selection of the base development activity for the cluster. As an example, tobacco is a crop best undertaken by smallholders, while soybeans require large contiguous areas to be economically viable. Instruments to support regional planning will be generated.
- 4) Potential Clusters refer to potential regional industries and can be considered a "short list" prior to defining the base crop.
- 5) Cluster Definition is obtained by merging data from Management Level, Potential Clusters, Logistics, Commercial Viability, Public Policy, and other factors. Market security is the primary factor, after edafoclimatic suitability.
- 6) Clusters are divided by size and complexity of value chain into a) Strategic Clusters, and b) Tactical Clusters. Tactical Clusters are generally brownfield operations needing to expand or consolidate.

	Methodology
Step 1: Region Zoning	Separate target region into homogeneous zones. This is a high-level division without detail used as a start point. Development and conditions tend to vary due to major environmental and social conditions. High level mapping is used to identify "macro" zones within the region.
Step 2: Physical Analysis	Define agricultural potential and environmental vulnerability of zone using data from the following sources. A system of weighted value is used for each input. 1) Soil maps 2) Relief maps 3) Water balance 4) Altitude 5) Lat/Long 6) Soil use and cover 7) Environmentally protected areas 8) Water resources
Step 3: Social Analysis	Define structural potential and social vulnerability of zone using data from, and including the following. A system of weighted value is used for each input. 1) Use and occupation data 2) Existing players 2) Urban area extent 3) Economic infrastructure
Step 4: Determine Management Types	Based on results of Steps 1 to 3 using a numeric weight matrix when necessary, shall be established different Management Types, which correlate the Management Zones with the data on Land Use and Cover.
Step 5: Determine Markets	SWOT Analysis for districts, to identify local potentials and constraints. Define the potential crops for cluster focus and scope based on market information and edaphoclimatic suitability and agroclimatic risk. This market information includes: 1) Value chain security 2) Depth of purchase market Determine Base Crop: Use previous information to define the best crop to provide the base, basically the primary crop to drive the cluster development. Definition of microregions that summarize synergies for Agricultural Development Plans and Clusters. Cluster Definition: The full cluster is defined to include information related to 1) Size 2) Value chain 3) Ancillary crops
Step 6: Define Schedule and Steps	Cluster development must be divided into steps, with accompanying schedules and goals to serve as a road map. Development schedule and steps are linked to ensure that goals are realistic and that development is logical. The schedule must also be linked to the constraints to ensure that constraints are resolved prior to them blocking the operation.

2.3 Agriculture Development Master Plan

Nowadays the sustainability represents a challenge for the development processes, and to overcome that, it is necessary to use all available tools and technical subsidies. The ecological economic zoning (ZEE) represents one of the main subsidies that contributes to the: orientation of public policies; actions focused on the environment; definition of priority areas; and investments of the Government and the civil society according to the characteristics of each region. The ZEE is also an essential information tool to support the planning and territorial management.

The zoning process configures a critical activity on the draft master plan elaboration, since the generated spatial output permits the characterization of regions to adequately cluster identification. For the zoning process there will be selected objective indicators that allows the data spatial distribution separated in three mains axis: physical and environment diagnosis, socioeconomic

diagnosis and legal restrictions.

For the physical and environment diagnosis there will be evaluated the agriculture and livestock potential and it's vulnerability provided by the edaphic, agro-climatic and agricultural and livestock zoning, as well as an environmental vulnerability analysis provided by the protected areas identification, land use and coverage characterization and surface water distribution.

The socioeconomic diagnosis, by its way, will be supplied by an economic characterization and social potential and vulnerability analysis. For the economic characterization there will be evaluated relevant aspects such as production structure and management, economic development axis, supply chain and market analysis and the localization of industrial activities. Social and environmental potential and vulnerability analysis intend to evaluate demographic aspects, infrastructure, social potential (health and sanitation, education level and other relevant information), environmental restrictions and social and environment conflicts. The legal restrictions compilation and analysis will be provided by the compilation and interpretation of legal and institutional aspects and regional planning policies evaluation.

The information evaluated on the main axis will be gathered on a Cartesian system for management zones definition which will provide the physical, environmental, socioeconomic and legal characterization for the selection of management categories and areas for the adequate agribusiness development, as the following example:

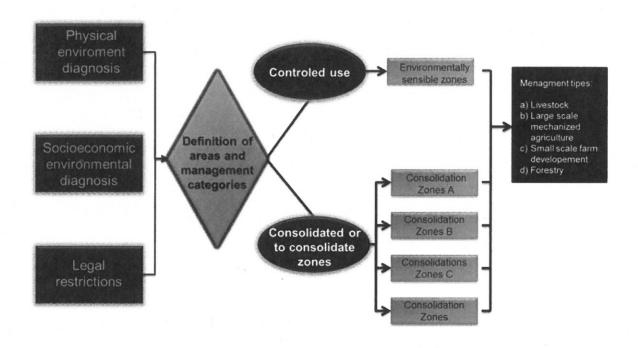


Figure 2.1 Flow of Zoning

2.4 Improvement of Agricultural Productivity by Private Investment and Poverty Alleviation in Small-Scale Farmers

At the Cerrado in Brazil, a huge agro-industry (agribusiness) with soybeans was established. In the industry, soybean oil is produced from beans and formula feed is produced as its residue product. Starting from this point, agriculture related industries (fertilizer, agrichemicals, transportation and distribution) are involved in trade resulting in developing supporting industries with a high synergetic effect. In a past report, it was noted that when soybeans were exported after processing,

the GDP become 1.7 times greater than when raw beans were exported because of the elicited effect of the processing industry and related industries. (The evaluation report of Agricultural Development in Cerrado, JICA 2000). For the Nacala Corridor, the best production arrangements must be identified and implemented in order to promote economic and social development so that the objectives of the master plan can be achieved.

The Agricultural Development Master Plan in the Nacala Corridor promotes formulation of a sustainable agricultural development model to contribute to improve the productivity through private investment, poverty alleviation for small-scale farmers and expansion of the industry. Therefore, the farming model should be examined to incorporate large-scale agricultural companies whose processing facilities have become the core of development. If the surrounding small farmers are involved in development, there will be a win-win situation to get profit.

"Chicken meat processing" has been developed in the Nacala Corridor and is a sample of cluster development with a combined value chain of "agriculture product" and "agriculture processing." Meat is produced for the northern area and there are some constraints such as insufficiency of raw material for formula feed and lack of contract farmers, but it will be studied as a business model.

This kind of business model will be established in each microregion. It means several business models with processing industries are studied in accordance to local agriculture potential (distribution of resources). Such models have been developed in Brazil, and might provide a good example to be applied in agricultural development for Mozambique.

Recently, the "Land Grabbing" on a global scale has attracted the attention of the international community. Because of soaring food prices, countries concerned about food security have purchased or borrowed arable lands in other countries. Regarding agricultural development, due to this large-scale investment, there are negative impacts on human rights, social

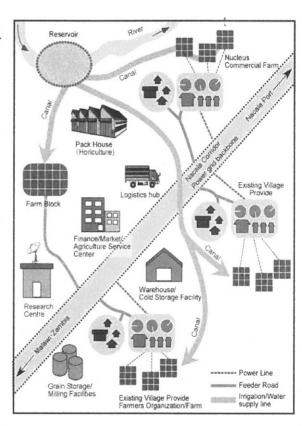


Figure 2-3 Image of Model Business

relations, sustainable food supply, food security and the environment. While on the other hand, RAI (Responsible Agricultural Investment) or CSR (Company's Social Responsibility) have been propounded. In the study of development plans, a model that is adjustable with investors and avoids land grabbing with profits for both large-scale farms and small farmers should be considered.

Nevertheless, the concept of "engaging private investment" should be understood not only by the attraction of new players, but also the verbalization of appropriation of the necessary resources so that local producers can develop practices that are more productive and sustainable. Thus, the producer must access technology, material, equipment, technical assistance and financial resources for its own investments in agricultural production.

2.5 Priority Development Plan for Private Investment and Quick Impact Projects (QIPs)

The "Priority agriculture development projects" are the projects given priority in the development

plan for the area and should be realized promptly. However, this does not mean that all of these projects will achieve their effect in a short period. On the other hand, the projects can be expected to achieve their effects sooner if categorized as "Quick Impact Projects (QIPs)", since they are quick, focused and relatively simple to implement projects, producing rapid results and supporting area and community development, to accelerate development plans and shorten times to established goals. Therefore, in the "Seminar for agricultural investment in the Nacala Corridor," the investor may want to hear the information about the overall picture of agricultural development (Contents of Master Plan) and details of QIPs for their study of examination. Therefore, the QIPs will comprise preparation of implementation plan, business model analysis and evaluation, and enrollment in the Data Book for agricultural investment. Moreover, a pre-F/S will be done for all priority projects and their feasibility will be reviewed.

This revision meets with the R/D signed on December 2, 2011 and satisfies the Investor's needs.

(1) Selection of Priority Agricultural Development Project and Adoption of QIPs

As aforementioned, the activities and implementation schedule of the project recommended in the Agriculture Development Master Plan for the Nacala Corridor is different for each microregion, even if some of the projects are similar. Therefore, priority projects will be selected from the agriculture development plans in each microregion.

The agriculture development plan in each microregion will consist of various projects. These projects will be proposed as a combination of activities; for example, combination of land consolidation, strengthening of improved seed production, improving of farming, and expansion of agriculture extension services. Several priority agricultural development projects will be selected from the plans in the microregion by selection criteria that enhance the effect on farm development, degree of economic impact, implementation structure and capacity of the Government of Mozambique, and environmental and socio-economical considerations.

Many priority projects will be selected from projects categorized in the short-term plan of the agricultural development plan in each microregion. Priority projects are to be selected from the projects to be implemented earlier or for high priority development areas. In order to verify the feasibility of the priority projects, a pre-Feasibility Study (pre-F/S) will be conducted.

A QIP is categorized as a project that will achieve its effect in a short period compared to other priority projects. For example, for private investment, large-scale farm development is envisioned on a former plantation farm that had been developed in the colonial era but is not operating now. This farm has a road network and water that can be maintained close by. Even with this assumption, it requires some preparatory works such as construction of a minimum irrigation system, cleaning of grass and cutting trees, soil improvement, etc. to achieve a stable agricultural production at least two harvest seasons. The project can begin sooner because it is not dependent on completion of other projects, like construction of key irrigation systems or access roads. As just described, QIPs will be selected from priority projects with the criteria: 1) easy to begin the project with effects being obtained sooner and 2) high priority.

(2) Business Model Analysis of QIPs and their Evaluation

Business model analysis verifies the effectiveness of QIPs selected from priority projects. The analysis will be carried out not only from the aspect for independent business of medium-large scale farmers or small-scale farmers but also for the possibility of a business model (development strategy) to contribute to agriculture and rural development, and poverty alleviation though involvement of surrounding small-scale farmers, as raw material suppliers or acting as agents in supplementary activities to the core business as well as owners of associative processing units.

Therefore, it is proposed to conduct analysis and evaluation for the following 3 types of business models categorized by structure of agriculture development project and beneficiaries. In this analysis, objective evaluation will be carried out using SWOT analysis and financial analysis.

1) Agricultural Development Intended for Small-Scale Farmers

This kind of project has implications of self support for small-scale farmers. In the analysis, based on the existing farming, it focuses on extension of farming improvement to obtain early effects (e.g. introduction of improved seed, fertilizer, agricultural chemicals, introduction of vegetables or fruit as cash crops, access to financing lines suited to small-scale activities, introduction of associative processing units, associative storage and distribution schemes, among others). A development model is established and its profitability and expected constraints (purchase of input material, access to distribution network and market, technical extension and rural finance, etc.) will be examined. Moreover, a financial analysis will be implemented to verify the profitability of each farming structure.

2) Agricultural Development for Medium-Large Scale Investment (Crop Production or Processing Industry)

The expected projects involve large-scale farming, the processing industry, or a combination of both in a large company. The business model analysis is conducted from multiple aspects. In addition to the financial analysis in order to evaluate profitability, relevance of the business model is verified with consideration of the investment environment (preferential taxation, procedure for applying for a business license or project approval, right of land-use, fund-raising, etc.), market environment (especially for export market), social and environmental suitability, supply chain, infrastructure for distribution and cooperation with small-scale farmers.

3) Agricultural Development with Medium-Large Scale Investment Involving Small-Scale Farmers

In the development project for agricultural products or in combination with the processing industry, business development based on crop cultivation contracted between medium and large-scale farms and small farmers is conducted to increase the feasibility of business, generate income and increase job opportunities for small farmers. As a result, it can be the new business model of note in the Nacala Corridor, where there is a large concentration of small-scale farmers. In the business model analysis, in addition to the financial analysis related to large-scale farm construction and operation, the analysis will be conducted from a social development aspect. Some examples include study on institution of rights of land use or water use in order to construct large farms, social consideration to avoid new disparity in the local community after small-scale farmers become involved in the business model and cooperation with a cooperative or farmers organization.

CHAPTER 3 IMPLEMENTATION

3.1 Summary

This Study will be implemented according to the following steps by August 2013. Major activities are described in the table below.

Table 3-1 Major Activities in Each Step

Outputs	Major Activities	Submission of report
[Output 1] Data collection and analysis of agriculture in the Nacala Corridor	 Discussion of Inception Report and Work Plan of the Study Preparation of technical transfer program Basic information survey for formulation of Master Plan on agricultural development Supporting the first stakeholder meeting Zoning of the Nacala Corridor area 	End of November
Output 1] Data collection and analysis of agriculture in the Nacala Corridor [Output 2] Drawing of an Overall Picture of Development Plans [Output 3] Planning of Quick Impact Projects (QIPs) for selected Areas in the Nacala Corridor [Output 4] Draft Master Plan Report and Preliminary Data Book for Investors [Output 4] Draft Master Plan Report and Preparation of Final [Output 4] Draft Master Plan Report and Preparation of Data Book for Preparation of Data Book for Preparation of Draft Master Plan Report and Preliminary Data Book for Preparation of Final [Output 4] Draft Master Plan Report and Preliminary Data Book for Preparation of Final [Output 4] Draft Master Plan Report and Preliminary Data Book for Preparation of Draft Master Plan Report, as Report (3)/Draft Final Report and Preliminary Data Book for Preparation of Final Master Plan Report and Data Book for Preparation of Final Master Plan Report and Data Book for Preparation of Final Preparation Data Book for Preparation Data Book for Preparation Data Book for Preparation of Final Preparation Data Book for Preparation Data Book f	2012	
Planning of Quick Impact Projects (QIPs) for selected Areas in	Selection of QIPs, formulation of implementation plan of QIPs, business model analysis and evaluation	Middle of February 2013
Draft Master Plan Report and Preliminary Data Book	Supporting the formulation of resettlement plan if required for QIPs • Supporting the 3 rd stakeholder meeting • Preparation of investment Data Book for agriculture sector of the Nacala Corridor and holding Investment Seminars • Finalization of Agricultural Development Master Plan in the Nacala Corridor • Preparation of Draft Master Plan Report, as Report (3)/Draft Final	Middle of June 2013
Preparation of Final Report	1	Mid-August 2013

3.2 Data collection and information analysis

Item [1]: Preparation and Discussion of Inception Report (JICA Study Team)

The Inception Report submitted to Mozambique and Brazilian institutions by JICA Study Team in March 2012. And the explanation and discussion on the Inception Report with MINAG and JICA Study Team was conducted on March 6, 2012. As a conclusion Mozambican basically agreed the contents of Inception Report and to proceed to preparation of the Work Plan of the Study.

Item [2]: Preparation and Discussion of Work Plan of the Study

The draft Work Plan will be prepared based on discussion of the Inception Report considering the expected input from the Brazilian side. It will be translated into Portuguese tentatively, then the

overall picture of the Study and its schedule will be shared with related intuitions in Mozambique and Brazilian experts through discussion. It was expected to be approved by the JCC of the ProSAVANA.

Item [3]: Preparation of Technical Transfer Program

The counterparts of the Study were selected by the Ministry of Agriculture in Mozambique from personnel of the Ministry of Agriculture and the agriculture departments in these provinces.

On the other hand, major activities of the Study are determining the process to formulate a series of plans and to examine investment strategies for agricultural development. Therefore, contents of the technical transfer program will focus on the process. Thus, the technical transfer program should be targeted not only for the counterparts from the Ministry of Agriculture and provincial agriculture departments, but also for related provincial departments for agricultural extension, investment planning or industry and trade, etc. The detailed program will be prepared after discussion.

Item [4]: Basic Information Survey

The basic information was collected in the "Program Preparatory Study" in March 2010 and in the "Detailed Planning Survey for the Master Plan Project" in August 2011. In order to understand the present condition of the Study Area and its problems, additional information will be collected from existing reports, statistics from National Statistic Institute (Year Book, population census in 2007, Agricultural census in 2010, etc.) and through interviews. In particular, data collection and discussion will focus on the Government of Zambezia Province, because this information was not gathered in the previous "Program Preparatory Study" by JICA. Moreover, related information for farming and existing results of field investigation in Brazil will be collected from the "The Project for Improving Research and Technology Transfer Capacity for the Nacala Corridor Agriculture Development, Mozambique (ProSAVANA-PI)." The data that the Brazilian side may hold will be required in the first discussion with Brazilian side mentioned in Item [1].

Item [5]: Inventory Survey of Farmers' Organizations

In the Master Plan, strengthening of farmers' organizations is important to alleviate the poverty of small-scale farmers. Therefore, an inventory survey of farmers' organizations will be carried out to study their current situation, constraints for development and potential for future activities. In the Study Area, different types of farmers' organizations exist (federation at province level, forum at district level and each individual organization). There may be 1,000 individual farmers' organizations.

Item [6]: Inventory Survey of Logistic Network and Value Chain Analysis

In order to formulate a sustainable agriculture production system in the Master Plan, the potentials and constraints in distribution or in increasing added values of agricultural products should be clarified. Therefore, an inventory survey of the logistic network and a value chain analysis will be implemented in the Study Area. The survey aims to understand the current situation of distribution, storage, processing, sales and consumption for each agricultural product in the Study Area.

In this inventory survey, an interview survey using a questionnaire prepared by the Study Team will be carried out with the distributor for major agricultural products. However, the Study Area is vast and agricultural products are distributed at various levels; therefore, it is not expected that the interviewees will know the whole distribution system in the Study Area. Therefore, the interviews will be carried out according to the categories below and questions should be limited to their activity territory. At the end of the survey, information of all categories will be combined and value chain analysis, including foreign trade, will be clarified in the Study Area.

According to the information obtained in this survey, value chain of agricultural products in the Study Area will be analyzed. In the analysis, the influence of neighboring countries, especially cross-border trade with Malawi in Niassa Province, will be considered.

Item [7]: Review on Development Partners' Activities

Both proceeding or completed activities of NGO and other donors in the Study Area will be reviewed. The extracted outcomes and lessons, including cooperation of donors and NGOs, and coordination methods, will be summarized. It will be considered how to apply them in the Master Plan.

Item [8]: Supporting the First Stakeholder Meeting (JICA Study Team)

Originally, the first stakeholder meetings were expected to be held in Maputo. But the strong requests of Mozambican counterparts to hold the meeting in the Study Area, the meetings were conducted in three provinces in the Study Area under the support of JICA Study Team.

The first Stakeholder Meetings (SHM) were organized by the MINAG/DPA, and the JICA Study Team supported them at Lichinga, Quelimane, Alto Molocue and .Nampula during April 1 to 12, 2012.

Based on the agreed Inception Report and the draft Work Plan, contents and methods of the Study were explained together with explanation of ProSAVANA-JBM. The attendees of the meetings included 1) relevant institutions, 2) other donors, 3) private sectors and NGOs, so that numbers of attendances were set around 50. Result of the first SHMs, this Draft Work Plan was modified and added the proposals and suggestions were referred.

Item [9]: Data Compiling and Analysis

The basic information collected in Item [4] and the results of the inventory survey in Items [5] and [6] are analyzed in each subsector. The current situation, constraints and causes will be summarized in the analysis. In the analysis, regional characteristics on the Study Area and areas that have similar constraints should be clarified.

Based on the above, key factors of agricultural development in the Study Area shall be identified.

Item [10]: Zoning of Agricultural Development in the Nacala Corridor

The zoning of the Nacala Corridor area will be decided considering the geographical distribution of the above key factors. In detail, a theme map for each indicator will be prepared using GIS, and the characteristics of the area shall be identified by overlapping the maps. Based on the identified characteristics of the area, promoted. Management Zones and Management Types will be defined in order to support the identification of micro-regions that should receive Agricultural Development Plans.

The use of the existing GIS database, developed in the Ministry of Planning, CENACARTA and DNTF of Ministry of Agriculture, or other tools will be also considered.

Item [11]: Preparation and Submission of Interim Report(1) (JICA Study Team)

The collected and analyzed basic information, results of inventory surveys and the zoning determined according to this data will be compiled by the JICA Study Team into Interim Report (I) in English.

The report will be translated into Portuguese provisionally, and used for the discussion with related institutes in Mozambique counterparts and Brazilian experts. The progress of the Study

3.3 Drawing of an Overall Picture of Development Plans

Item [12] : Study of the Agricultural Development Potential in the Nacala Corridor

The local potential to achieve the direction of development shall be analyzed based on the results of collection and analysis of basic information and inventory surveys mentioned in Items [4] \sim [6] in a district level. The analysis shall be carried out from multilateral standpoints considering the situation of agricultural production, market environment, infrastructure development, distribution of development resources, activity of farmers' organizations, progress or results of related studies for the Nacala Corridor development, activities of the Mozambique Government, activities of other donor organizations and NGOs and environmental and social sensitivity. Moreover, the potential to be used as a base of agricultural clusters, for example cooperation between medium-large scale investment and small-scale farmers will be examined. In particular, the results of the inventory survey of farmers' organizations (Item [5]) and the inventory survey of the logistic network (Item [6]) should be utilized effectively because the information on existing farmers' organizations or the existing distribution network is important for consideration of the agricultural potential. The analyzed potentials are summarized for each subsector to compare with constraints examined in Item [13].

Item [13]: Analysis of Constraints of Agricultural Development

The constraints disturbing development in each district will be examined by data subsector. In particular, subsectors that are not well developed but have potential will be focused on in the analysis and causes of disturbing the potential use and their background will be clarified.

The analysis will be examined focusing on the constraints for agricultural development clarified in the workshop with farmers (mentioned in Item [5]) or interviews with the distributor of the products (mentioned in [6]) and challenges understood in the interviews with government institutions, private companies or other donor organizations (mentioned in [4]).

The identified constraints for agricultural development shall be summarized together with the potential for agricultural development studied in Item [12]. The results will be used for the formulation of the overall picture (Item [14])

Item [14]: Formulation of Overall Picture on the Agricultural Development in the Nacala Corridor

Based on the information obtained through the aforementioned works, the Overall Picture on agricultural development in the Nacala Corridor area, which is also conducive to socio-economic growth, will be formulated. The Overall Picture is addressed to promote a sustainable agricultural development system by private investment and to fulfill poverty alleviation. The expected procedure for formulation of the Overall Picture is as follows.

(1) Definition of the Micro-regions and Formulation of Activities for Agricultural Development

The correlation of information obtained in items 4 to 10 with the analyzes carried out in items 12 and 13 should support the definition of Micro-regions. These Micro-regions should be characterized by features and conditions that enable a common Agricultural Development Plan,

preferably one that favors the creation or use of synergies.

The agricultural development potential will be reviewed based on the direction of development in each Micro-region. Then, the countermeasures will be examined in order to remove the constraints of subsectors effectively and efficiently and to develop the potential. The activities for countermeasures will be formulated. The main actors and beneficiaries of the formulated activities shall also be clarified.

The above works will be carried out for each micro-region, and activities for each Agricultural Development Plan will be tabulated.

(2) Settle on the Development Goal of Master Plan and its Target Year

The object of development in each Micro-region will be set and the development goal of the Master Plan on agriculture development in the Nacala Corridor will be settled.

Considering the experience of Cerrado agricultural development Project in Brazil, it was required around 30 years to achieve the planned agriculture development. Considering the recent socio-economic circumstance for agricultural development in the study area and the different approach adopted within the Master Plan, the target year shall be estimated about 15 years is required for agricultural development in the Nacala Corridor after considering system development, construction of basic infrastructure, improvement of agricultural productivity, and a stable supply of agricultural products/processing products for the international market. Therefore, the target year is expected to be 2030.

(3) Formulation of Project Focus in its Implementation

The activities examined in (2) above will be categorized according to the main actors and beneficiaries. The combinations will be studied to generate a direct effect conducive to achieving the development goal in the micro-region. As the result of this, the project will be formulated focusing on its implementation. The project should be formulated to ensure an increase in the value of agricultural products through a combination of activities and establishment of a system to promote cooperation between private investors and local farmers as well as financing institutions and local farmers, as aforementioned in the technical approach section.

The formulated projects are also classified into short-term, medium-term and long-term projects according to their target year. For each project, activities, operation plan, budget, implementation structure and expected financing source will be determined, as well as other relevant aspects. By gathering the projects, the Agricultural Development Plan in the micro-region will be prepared. As mentioned, the Development Plans will consist of projects crossing over the administration boundary, which may have several relations with Central Ministries in Mozambique, institutions in provincial or district governments, private companies and NGOs, etc. Therefore, establishing a new organization to coordinate stakeholders and evaluation and monitor the project implementation shall be studied and to be proposed as part of the Master Plan's recommendations.

(4) Evaluation of the Projects and Formulation of Master Plan

All of the agricultural development plans in the zone shall be integrated as the Master Plan of Agricultural Development in the Nacala Corridor. Among the plans in the Micro-region, similar projects will be organized and the projects will be integrated into one as a "cross-micro-region project," which may be done more efficiently if implemented in several micro-region or all areas at the same time.

The Overall Picture will be formulated with several recommendations for project implementation in addition to the formulated draft Agricultural Development Master Plan above. These recommendations include improving the investment environment in the agricultural sector in Mozambique, improving the system for agricultural development, improving the system for farmers' organizations including rural financing, and a recommendation to harmonize the projects with the 7 principles of Responsible Agriculture Investment (RAI). Moreover, the development projects and the studies like "The Study for Economic Development of the Nacala Corridor" carried out by JICA will be considered in the draft Master Plan.

The project evaluation of formulated projects in micro-regions and cross-micro-region projects will be calculated and some revisions will be done if necessary. Project evaluation should consider not only profitability but also various aspects of the effectiveness for rural development, future potential, impact and latent risk. Therefore, the project will be evaluated with 5 evaluation criteria (relevance, effectiveness, impacts, efficiency and sustainability). If the project is economically self-sustaining, an economic analysis will be calculated. Based on the respective evaluation of the projects, the draft Master Plan will be evaluated. The necessary revisions will be done on the projects if required, and implementation plans of the projects (activities, schedule, budget, implementation structure, expected financing source) will be summarized. Finally, the draft of the Master Plan of Agriculture Development in the Nacala Corridor will be formulated.

Item [15]: Supporting the Second Stakeholder Meeting

The second stakeholder meeting will be organized by the Ministry of Agriculture in Mozambique with support of the Study Team.

The Overall Picture, formulated in [14], shall be explained and the opinions from participants will be gathered. The presentation should be conducted by the Mozambique Counterpart as part of OJT for technical transfer with the Study Team's support. The second meeting will be held at Maputo in order to call on a wide range of participants, like investors for the agricultural sector in the Nacala Corridor or private companies interested in investment in addition to the attendees of the 1st stakeholder meeting. The invitees will be decided after discussion.

In order to inform implementation and output of the Study in public and to promote private investigation, public relations will be conducted for the second stakeholder meeting. Presently, the mass media, like newspapers, are expected to be invited to the meeting. Details will be discussed with the Ministry of Agriculture in Mozambique and Brazilian experts. Similar Public relations activities will be done for the third meeting too.

Item [16]: Preparation and Submission of Report on Output 1 and 2 of the Study

The results of data analysis and overall picture and discussion results in the second stakeholder meeting will be submitted as Report (I) on the Output 1 and 2 of the Study.

A draft version of the report will be available for discussion with related institutes in Mozambique and Brazilian experts. The progress of the Study shall be shared among them and the discussion will be reported in the minutes of the meeting.

3.4 Planning of Quick Impact Projects (QIPs) for Selected Areas in the Nacala Corridor

Item [17]: Formulation of Selection Criteria for Priority Projects

Based on the Overall Picture, formulated in Item [14], the priority projects will be selected following the procedure below.

As explained previously in sub-chapter 2.5, the projects of the Master Plan components classified into the short-term plan will be chosen as candidates for the priority projects, which are selected with consideration of priority of schedule and area in each zone. The selection criteria conforming to the development goal of the Master Plan will be prepared, and priority projects, which should be implemented on a preferential basis for agricultural development in the area, will be selected. They will be considered in preparation of the selection criteria that directly contribute to the development goal, impact the economy in the Nacala Corridor, have a spreading effect for small-scale farmers or medium-large scale agricultural development, follow the implementation structure and improve the capacity of related institutions in Mozambique, and consider Environmental Impact Assessment (EIA) and social impacts. It will also consider the private company's needs confirmed in Item [16] or the opinion of the Ministry of Agriculture in Mozambique and Brazilian experts. The details of selected priority projects will be examined such as activities, schedule, budget, profitability, benefits, economic impact and synergetic effects. After review of the possible priority projects, revisions will be fed back to the draft Master Plan if necessary.

Item [18] : Selection of Priority Projects and Quick Impact Projects (QIPs)

Among the priority projects examined in Item [17], the projects expected to bring the effect in a short time will be selected as QIPs. The priority projects are also selected from the short-term plan in the Overall Picture, and quick project effects are also expected. However, some of the projects may include activities that do not generate direct effects such as revision of system or infrastructure development.

Therefore, the projects are selected as QIPs, which do not require preparatory works and are expected to issue effects like increasing agricultural/processing product in a short time. The detailed criteria of QIPs, especially the relationship between scale of preparatory work and selection, will be decided with the Ministry of Agriculture in Mozambique and Brazilian experts based on discussions with private companies mentioned in Items [1] and [16].

The preference order of the selected QIPs will be studied according to expected financial resources, the project relevance and expected impacts. The order will be decided according to prepared criteria related to the investment effect. However, indicators for the investment effect are dependent on the financial resources. For example, low implementation risk and high profitability for investment cost is applied for private investment, but the number of beneficiaries and synergetic effect is good for the government or other donor organizations. Therefore, preparation of the criteria and

Table 3-2 Criteria for Prioritization of QIPs (draft)

Expected finding resources	Criteria (draft)
Medium and Large Scale	Investment Risk High Profitability for investment Project relevance and impact
Small Farmers	Investment Risk Minimum initial cost Project relevance and impact
Government Donor and NGO	Number of beneficiaries Direct impacts Expected spreading effects direct

prioritization will be carried out according to expected financial resources. The expected financial resources are shown on the right. In particular, the criteria for large-medium scale investment by private finance will be examined based on discussion with the private companies mentioned in Items [1] and [16].

Finally, the priority of QIPs will be decided after review of the results of the Pre-F/S determined in Item [17].

Item [19]: Formulation of Implementation Plan of QIPs

Implementation plans for the selected QIPs will be formulated upon reviewing activities, budget, implementation structure, expected financial resources for priority project, which are studied in Item [17]. The enticement plan will be recommended for the private investment projects based on discussion with the private companies mentioned in Items [1] and [16]. Operable enticement plans should only be recommended after careful discussion with the related institutions of the Government of Mozambique.

Item [20]: Business Model Analysis and Evaluation of Priority Projects Including OIPs

A business model analysis and evaluation will be applied for the QIPs selected in Item [18]. In the analysis and evaluation, profitability of the business model and balance in farming will be calculated. In addition, surrounding conditions of the business as legal framework, access to labor force and access to input material, will be clarified, among other relevant aspects. By those means the effectiveness of the business model will be verified.

Examining the characteristics, QIPs can be categorized into 1) agricultural development project aimed at local businesses and production, mostly based upon small farmers; 2) medium—large scale investment in production and adding value; and 3) major agricultural development investment cooperating with small-scale farmers.

In the evaluation of the business model will be considered, in addition to the business balance, profitability, internationally competitive power of the target products, market trend and rate of return of investment.

The analysis method and evaluation criteria for the business plan of QIPs will be decided based on the above and results of analyses in the field survey. In addition, the intentions or requests of private companies, which will be obtained through consultation with private companies operating in Mozambique, will be considered. The above analysis and results of evaluation are to be fed back to the QIPs and their implementation plans.

Item [21]: Preparation and Discussion of Report on Output 3 of the Study

The Plan of QIPs will be submitted as the Report (2) on Output 3 of the Study.

A draft version of the report will be available for discussion with related institutes in Mozambique and Brazilian experts. The progress of the project shall be shared among them and the discussion will be reported in the minutes of the meeting.

3.5 Draft Master Plan Report and Preliminary Data Book for Investors

Item [22]: Environmental Impact Assessment (Environmental and Social Considerations) for the Development Projects

Environment impact assessment shall be carried out two times, first after the Draft Master Plan is prepared when all activities have been clarified and second during preparation of the QIPs when details of the projects including location are being discussed. The impact assessment shall consider the Mozambican legal framework and good agricultural practices guidelines.

Item [23]: Supporting the Formulation of Resettlement Plan in the Case of the QIPs Require the Resettlement or Land Acquisition

Large-scale resettlement and change of land-use rights from current land users are not expected during implementation of QIPs. However, if some resettlement or land acquisition will be required, it will be supported by preparation of a simple resettlement plan in accordance with the Mozambican legal framework, JICA's Guideline for Environmental and Social Considerations (April, 2010) (hereinafter JICA Consideration Guideline) and other relevant guidelines.

The resettlement plan should be submitted by the Government of Mozambique to the Study Team. Therefore, if submission of a resettlement plan is required in the Study, it should be prepared and submitted by the Government of Mozambique. However, if this is difficult for the Government of Mozambique due to technical or financial reasons, then it may be necessary for the Stúdy Team to support implementation of the required survey and prepare the resettlement plan.

Presently, the scale of resettlement or land acquisition required for implementation of QIPs cannot be predicted. Therefore, the required workload cannot be estimated. Thus, if the survey is required, it must be immediately discussed with JICA and Brazilian experts and the work contents and methods including additional subcontracting will be discussed.

Item [24]: Supporting the Third Stakeholder Meeting

The third stakeholder meeting will be organized by the MINAG in Mozambique supported by the Study Team.

The QIPs and their implementation plans, prepared in Items [18] and [19], will be explained in the meeting. Any opinions on the plans by the attendees will be gathered. The presentation might be conducted by the Mozambique Counterpart as part of OJT for technical transfer with support of the Study Team. The attendance and location of the meeting are expected to be same as the second meeting, but details will be discussed among Study Teams, JICA/ABC and finalized with the Ministry of Agriculture.

Item [25]: Proposal for Capacity Building Plan of Mozambican Authorities to Implement the QIPs by Themselves

The recommendation for strengthening of project implementation is issued through review and analysis of challenges in implementation structure in Mozambique, which are identified during the preparation of QIPs.

In this recommendation for strengthening of the implementation structure, in addition to the recommendations found during preparation of the Master Plan in work Item [14], items newly recognized through examination of QIPs will also be incorporated. Moreover, it is recommended that the Mozambique Government ensure that the agricultural investment is carried out in accordance with the RAI.

Item [26]: Preparation of Investment Data Book for Agriculture Sector of Nacala Corridor

The Data Book includes not only information related to the QIPs but also all required information for investment. At present, the CPI (Investment Promotion Centre) is the contact for foreign investment. Therefore, for the preparation of the Data Book, both CPI and the counterparts of the Ministry of Agriculture will be involved.

The Data Book will contain the whole picture of the Master Plan on Agriculture Development in

the Nacala Corridor, QIPs and required process for agricultural investment in accordance to the laws/regulations of Mozambique. In addition, the "Agricultural Investment Blue Print in Beira Corridor," which has been published to promote investment in the Beira Corridor, will be consulted upon issuing of the Data Book. In accordance with the discussions with Japanese and private companies in work Items [1], [16] and [20], its contents will be decided after discussions with JICA, ABC, institutes in Mozambique and experts of Study Team.

Item [27] : Finalization of Agricultural Development Master Plan in the Nacala Corridor

The Master Plan is finalized by feedback of newly found items through examination of priority agricultural development plans and QIPs.

In particular, in order to maintain consistency between the Master Plan and QIPs, details of QIPs will be reflected in the Master Plan such as detailed activities plan, implementation schedule, result of business model analysis, recommendation for strengthening the implementation structure, etc., which will be examined during the preparation of implementation plans for selected QIPs.

Item [28]: Preparation and Discussion of Draft Final Report

All the results of the Study, from the beginning of the Study to finalization of the Master Plan, will be described in the Draft Final Report. The report will be explained in detail with related institutes in Mozambique, other donors, the private sector and NGOs. The comments stated in the explanation meeting will be recorded in the minutes and agreed on by the Ministry of Agriculture in Mozambique. Moreover, it is noted in the minutes that additional comments should be submitted in written form by the required date.

Item [29] : Investment Seminars and Presentation of Draft Master Plan

An Investment Seminar shall be held with private companies. In the seminar, the Master Plan and the investment Data Book for agricultural development in the Nacala Corridor will be explained, and the investment Data Book shall be distributed. The one day seminar will be hold in Mozambique and Japan respectively. The seminar in Mozambique will be held at the same time as the explanation of Draft Final Report. On the other hand, the seminar in Japan will be held after the explanation of the Draft Final Report in Mozambique is completed, awaiting for the comments on the Draft Final Report from Mozambican Government. The number of attendees is expected to be about 50 people in both seminars. At present, it is expected that a few administration officials of Mozambique will be jointed to the seminar in Japan.

3.6 Preparation of Final Report

Item [30]: Preparation of Final Report (Triangular Report (IV)

The comments on the Draft Final Report of the Ministry of Agriculture in Mozambique, JICA, ABC, and output of investment seminars will be reflected in the Final Report. The Final Report will be submitted to Government of Mozambique.

3.7 Work Schedule

The Work Schedule has been decided as shown in the table below. The Study will be carried out from the end of February 2012 to the end of August 2013.

Table 3-3 Work Schedule

Yea	r	2012											2013							
Work item Mont	Feb.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	S
《 [Output 1] Data collection and analysis of agriculture in Nacala Corridor	area	»																		
tem [1]: Preparation and discussion of Inception Report		ΔΔ																		Γ
tem [2]: Preparation and Discussion of Work Plan of the Project		-	VΔ																	T
tem [3]: Preparation of Technical Transfer Program					7.															T
tem [4]: Basic Information Survey			gActs	370E46	98.27															T
tem [5]: Inventory Survey of Farmers Organization																				T
tem [6] : Inventory Survey of Logistic Network and Value-Chain Analysis			90820	NO. STATE																T
Item [7]: Review on Development Partners' Activities																				T
tem [8]: Supporting the 1st Stakeholder Meeting	1		69																	T
tem [9]: Data Compiling and Analysis																				t
tem Zoning of Nacala Corridor Area		4																		T
tem [Preparation and Submission of Interim Report							ďΔ													t
《 [Output 2] Drawing of an Overall Picture of Development Plans》																				
tem [Study of the Agricultural Development Potential in the Nacala Corridor Area																				Γ
em [13] : Analysis of Constraints of Agricultural Development								230												Γ
tem [14]: Formulation of Overall Picture on the Agricultural Development in Nacala Corridor Area																				
tem [Supporting the 2nd Stakeholder Meeting																				L
tem [Preparation and Submission of Report									-											
《 [Output 3] Planning of Quick Impact Projects (QIPs) for selected Areas in	Nacal	a Co	rrido	r»																
tem I Formulation of Selection Criteria for Priority Projects																				
tem [18]: "Selection of Priority Projects and Quick Impact Projects																				Γ
tem [19] : Formulation of Implementation Plan of Quick Impact Projects																				Γ
tem [20] : Business Model Analysis and Evaluation of Priority Projects including Quick Impact Projects																				
tem [21] : Preparation and Discussion of Report												623	ΔΔ							L
《 [Output 4] Draft Master Plan Report and Preliminary Data Book for Inve	stors))																		
em [Environment 22 Impact Assessment for the Development Projects																				
Supporting the Formulation of Resettlement Plan in the Case of the tem [23]: Quick Impact Projects Require the Resettlement or Land Acquisition													200							
tem [24] : Supporting the 3rd Sstakeholder Meeting																				T
tem [25] : Proposal for Capacity Building Plan of Mozambican Authorities to Implement the Quick Impact Projects by Themselves									1											
em [26] : Preparation of Investment Data Book for Agriculture Sector of Nacala Corridor Area																				
Finalization of Agricultural Development Master Plan in Nacala Corridor Area															5	\neg				
tem Preparation and Dis@assion of Draft Final Report																	107	1		Γ
em [29] : Investment Seminars and Presentation of Draft Master Plan																				T
《Preparation of Final Report》																				
em I Preparation of Final Rejuert :																		-		Γ

CHAPTER 4 THE STUDY TEAM

4.1 Study Team Members

This study will be carried out by the Study Team below.

Table 4-1 Study Team Member List

		1 12335	Name	e		
Assignment		Mozan	nbican		ЛСА	ABC/FGV
	MINAG	NAMPULA	NIASSA	ZAMBEZIA	JICA	ABC/TGV
Team Leader/Agricultur e Development/		(IIAM)	Staperd.			
Agri-business	(DNSA)	1 100 may 2 12 may 2) (A)			
Agricultural Infrastructure	(DNSA)		74-14	actives.		
Transportation and Social Infrastructure	(CEPAGRI)	un haven ghadagen		The first of the second	The section page for the second	
Farming and Technical Extension	(DNEA)			arcastone that		
Rural Society/Farmers Organization	(DNEA)			(Value organization)	on the 19 has a district	
Post-harvest/Mark eting/Value Chain	(CEPAGRI)	(CEPAGRI)		Strawer Comment	e tund ostaka hande o	
Zoning/Land Use	(DNTF)	· Salarining of the	(300033)			Control of the contro
Zoning/GIS	(CENARCARTA) (IIAM)					A Company
Project Planning/Econom ic Business Model Analysis	(CEPAGRI)	(CEPAGRI)				
Investment Promotion/Legal System	(CEPAGRI)					
Environment and Social Consideration	(DNIF)				(63263)	
Admin. Coordinator/Rural Society						

4.2 Assignment Schedule of the Study Team Members

The Study period is expected by August 2013. The Assignment Schedule is shown in Table 4-2.

Table 4-2 Assignment Schedule (tentative)

Assignment	Name	February	March	April	May	June	2012 July	Augu	st Septemb	er October Nove	mber December	January	February	March	20 April	13 May	June	July	Augu
Team Leader /Agriculture Development/Agri-business			3/3 3/22	3 4/01 4 9days 24day	725	6/17			8/26		11/29	1/12 1/		3/			6/9 ₁ 6/23 15days		1
Agricultural Development			zidayo			CZ.	//Idaye		3	/	-:-	1				920	中		
Agricultural Infrastructure/Irrigation				4/14 20d		6/14	79days		8/31		11/29 Odays	1/26	61days	3/	27		6/9 6/23 15days		I
Agricultural Infrastructure						(3	-		:1	ļC:		- 0	==:						
Transportation and Social Infrastructure			3/3	4. 58daya	29	6/3	85daya		8/26	10/1 60days	11/29	1/12	77days	3/	29	1	6/9 6/23 15days		
Farming and Technical Extension (1)			3/17	58days	5/13	71	STATE OF	dayal	8/31	10/1 1 45 days	1/14	26.75	2 ISdays	27			i		i
Farming and Technical Extension (2)	1		3/2	3/31 4 rs 30days	29	6/9	75days	8	22	10/1 60days	11/29						i		
Rural Society/Farmers Organization			3/17	4/25 40days		6/3 34days	7/7 7/14 9days 22	B/G		10/1 60days	7.00	1/12 1/1 7days	48days	3/7			6/9 6/23 15days		
Post-harvest/Marketing/Value Chain			3/17		29	6/12	7/7 7/14 ys 9days			10/1 - 60days	11/29	1/14	2 I5days	27					
Agricultural Value Chain Analysis				. ,		i:=			ì			[]							
Agribusiness	1					CI				12:2:2:		CI	- -:				ф		
Zoning/Land Use			4/	1 6Dday	25077	730 7/	100	173	8/29	10/18 45day		1/14	2/ Sdays	27					i
GIS								<u>-i-</u>		1.			i	į			i		i
Zoning/GIS					5/6 5/2 15days			31 30day	8/29		1/15 11/29 5day s		į	į			i		į
Project Planning/Economic Business Model Analysis(1)							3 7/17 16days	-		11	3 11/22 Sdays		2/12 2/ 15day	, į			6/91 6/23 15days		-
Project Planning/Economic Business Model Analysis (2)						6/3	75days	8/16		80days	11/29		2/13 =45day	3/2	29		!		
Business Model Analysis						i=:=	===	= 17		1 :		,	=				\Box		
Investment Promotion/Legal System						6/3	75days	8/16		10/1 1 45daya	1/16	1/14 1/1 5clays	70days	3/27			6/9 6/23 15days		
Investment Promotion												Ε	- <u>i</u> -:	-:-::					j
Law and Institutional System								-11					i	i			i		i
Land Use System	Ÿ						===						!	!			!		į
Environment and Social Consideration						34days	7/7 7/14 9days 3	12days		10/16 45day	8	1/14	75days	3/2	29		!		!
Admi. Coordinator/Rural Society				,		8/3 6/2 21days	5days	34days		10/31 30da)	11/29		2/22 Odays				6/9 6/23 15days		-
			3/15	days	Í	6/3 6/17		i						į			_		Ļ
Administrative Coordinator						CZ.	-:-	ΞĒ	::::::			:=:=	ij	‡		===	:: <u> </u> ::		i
Interpreter			40day		,			-		30days	/14	200		i			6/9= 6/23 15days		į
Report		IC I	∆ µR	W/P				Di	ta Anal	rais and		Impact		Draft I	Vlaster ment	Plan Pr		Final ster P	
Stakeholder Meeting			SH	IM(1				Takes of	ywrail?	SHM		ects		SHM(3	_		1448	-will	elli
Investment Seminar		-		- Contract					_					and the latest designation of the latest des	-	ISI	Maputo, 1	okyp, B	razil)

4.3 Tasks for the Study Team Members

The tasks for the Study Team members are shown in the table below.

Table 4-3 Tasks for the Study Team Members

		Assignment	Team Leader/ Agricultural development/Agri-busine	Agglantura Dividependal	Agricultural influstructures Irrigation	Agricultures in the second section	Traffic and social infrastructures	Farming/Agricultural technical extension(;	Farning/Agricultural technical extension	Rural society/Fumers organization	Post-harvestMarketingNalue-chair	Amalysis of Agricultured (Yanks) (States)	(See a) professors	Zoning/Land us	\$	Zoning/GIS	Business model planning and analysis(1	Business model planning and analysis(2	Assistation of Discisling Header	Investment promotion/Legal framework	In Comments Secure dem	Law System	Kang Use System TT-7	Environment and social consideration	Adm. Coordinator/Rural society	
Work Dec	zi\$																									
	[1]	Preparation and discussion of Interpton Report	(0)		-		0			0	,									0					0	
	121	Preparation and Discussion of Work Plan of the Project	0				Ó	0		0	0			,											0	
	[3]	Preparation of Tecluses Transfer Program	(9)				0	0		0	0			0											0	
[Output 1] Data Collection and Information Analysis for Agriculture Development In Bacelo Outpider Area	[4]	Basic Information Survey	0	O	*	ŏ	ιĐ	0	@	0				0		0		Œ	fit.	•				0	0	100
	151	Inventory Durway of Farmers Organization	0	O	-	-		0	9	0																
	161	Surerzory Survey of Logatic Network and Value-Chain Analysis	0	O	-	-	,	0	0		Ð								Tig.							
	[7]	Review on Development Portures' Activities	(b)	O	0	-	0	0		0	0			0	******			-	112		-		-	-	0	
			®	O	0	-	0	a	-	0	0			à	-				5.24						0	-
	tal	Supporting the 1" Stakeholder Meeting	0	o	0	-	9	(9)	6	9	0			0	Ö.	0	0	9	O	(3)		0	0	(g)	D	9.33
	[9]	Data Compiles and Analysis	-	1	-	-	-	-	-			-		_	100	-		-	17 18 19			0	1961	0	0	2.1
	[10]	Zerang of Hecala Comder Area	0	O	(9)	-	0	(9)	0	0	0			0	.0	(9)	0	0	0	0		11665	0	-	-	10.00
	[11]	Preparation and Submanian of Interim Report (!) Ithidy of the Agricultural Development Potential or the Nocali Comden	0	0	0	while	0	(4)	0	0	0	r schehr i	9000	0		(9)	0	0	O	0	-	0	O	C	0	EVI.
[Output 2]	[12]	Area	0	O	(6)	0	0	(6)	0	0	0	O	O	(9)			0	0	0	@	ļ	O	0		0	M. F
Formulation of Master Plan	[13]	Analysis of Constructs of Agricultural Development	(9)	0	0	0	(E)	@	0		0	O	0	@			0	0	O	0		O	О		0	BALA
on the Agriculture	[14]	Formulation of Draft Master Plan on the Agricultural Gevelopment at Nacula Comdar Area	9	O	0	0	@	0	0	0	0	O	O	0		10	0	0	O	0		O	O	0	0	ev.e
in Macais Corridor Area	t151	Supporting the 2nd Stakeholder Meeting	0	0	0	O	0	0	0	0	0	O	O	0				0	Q	0		0	0	0	0	
Corridor Area	[16]	Preparation and Schemission of Interim Report (II)	@	0	0	0	9	0	0	@	0	O	O	•				0	0	@		Ο.	0	0	0	100
	1171	Formulation of Selection Criteria for Priority Projects	9		0	0	0	0	0	0	0	o	0	9				0	O.	•		0	0	0	0	製養
[Output 3] Formulation	[18]	Selection of Priority Projects and Queck Impact Projects	0		0	0	0	•	0	@	0	0	٥	0				0	0						0	2016
of implementatio	[19]	Formulation of Implementation Plan of Quick Impact Projects	0		0	0	0	0	0	6	(6)	0	0	0		-		0	0	-					0	
n plan of Quick impact Projects	[20]	Burness Model Analysis and Evaluation of Priority Projects including	0	-	0	0		0	0		-	12					9	@	o							2017
	[21]	Quick Impact Projects Prop aration and Discussion of Interim Report (III)	0		0	0	0	9		0	0	o	o	@						0					0	
(Output 4)	[22]	Environmental Impact Assessment for the Development Projects	0	-	-	316,00		-	-	-						-					-			0		
	[23]	Supporting the Forundation of Resettlement Plan is the Case of the Quick Impact Projects Require the Recottlement or Land Acquisition	0											-						. 1		-		0		
Preparation of investment	[24]	Supporting the 3th Satakeholder Meeting	9				0					0	0				0	0	Ó	.0				0	0	識從
Data Book for Agricultural Sector of Naceda	[25]	Proposal for Capacity Building Plan of Mezambocas Authorates to Implement the Quick Iropact Properts by Themselves Preparation of Investment Duta Book for Agriculture Sector of Nacaba	•		0		0	0		٥	0	O	O	0			0	0	0	0				٥	0	
Corridor Area and Holding	[26]	Cerridor Area Finalization of Agricultural Development Marter Plan in Nacala	-	19925/4	-	-		-	-			18/2/10	WAY:	,		_	0	0	0	0			-		0	海田県 野産権
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	[28]	Preparation and Discussion of Draft Final Report	0	0	0	-	0	0	_	•		0	0			,	0		器	0	0			-	0	100
	{29]	Investment Seminars and Presentation of Marter Plan	0	0	0		@	0		0		o.	O			,	•		羅	0	O		-		0	
Preparation of Final Report	[30]	Preparation of Final Report	•		0		(9)			0									100							撥

4.4 Reports Submission

The reports to be submitted in the Study are shown below.

Table 4-4 Report List

Times	Type of Report	Topics							
End of November 2012	Report No.1	Data Collection and Analysis of Agriculture in the Nacala Corridor and Drawing of an Overall Picture of Development Plans							
Middle of February 2013	Report No.2	Planning of Quick Impact Projects for selected areas in the Nacala Corridor							
Middle of June 2013	Draft Final Report:	Draft Master Plan Report and Preliminary Data Book for Investors							
Middle of August 2013	Final Report	Final Master Plan Report and Data Book for Investors							

4.5 Other Outputs of the Study

The material below will be submitted at the end of the Study:

- 1) Results of inventory survey of farmers' organizations
- 2) Results of inventory survey of logistic network and value chain analysis
- 3) Data Book for Agricultural Investment in the Nacala Corridor. They will be distributed at the investment seminars at Maputo, Tokyo and in Brazil.