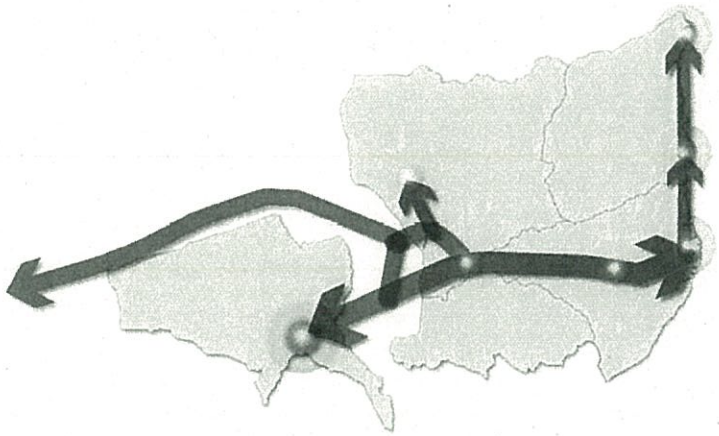
資料1-2

MINISTRY OF PLANNING AND DEVELOPMENT (MPD)
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

THE PROJECT
FOR

NACALA CORRIDOR

ECONOMIC DEVELOPMENT STRATEGIES
IN
THE REPUBLIC OF MOZAMBIQUE



PEDEC-NACALA

Draft PEDEC Strategies Report - Version 3 -

Main Text: Volume 1

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The Project for Nacala Corridor Economic Development Strategies in the Republic of Mozambique

Draft PEDEC Strategies Report
Main Text

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LIST OF ABBREVIATION

ADM ····· Mozambique Airports
AFCAP ····· African Community Access Programme
AfDB ····· African Development Bank
AIAS ····· Management Infrastructure for Water Supply and Sanitation
AIFM ····· Integrated Assessment of Forest in Mozambique
ANE ····· National Road Administration
ARA-CN ···· ARA-Centro Norte
ARA-N ····· ARA-Norte
ARA-Z ····· ARA-Zambeze
ASNANI ····· Integrated Water Supply and Sanitation
CENACARTA ····· National Remote Sensing & Cartography Centre
CEPAGRI ··· Agriculture Promotion Centre
CFM ····· Mozambique Ports and Railways
CFP ····· Vocational Training Centres
CIDA ····· Canadian International Development Agency
CIQ ····· Customs, Immigration, and Quarantine
COMESA ··· Common Market for Eastern and Southern Africa
CPI ····· Investment Promotion Centre
CSR ····· Corporate Social Responsibility
DfID ····· Department for International Development of United Kingdom
DICES ····· National Directorate of Higher Education
DINAPOT ··· National Directorate of Territorial Planning
DINET ····· National Directorate for Primary Education
DGM ····· Discussion Group Meeting
DNAP ····· National Directorate of Studies and Policy Analysis, Ministry of Planning and Development
DNA ····· National Water Directorate
DNTF ····· National Directorate of Land and Forestry
DPA ····· Provincial Directorate of Agriculture
DPOT ····· Department of Territorial Planning
DUAT ····· (The rights to use and profit from the land)
EAP ····· Economically Active Population
EDM ····· Mozambique Electricity Company
EIA ····· Environmental Impact Assessment
EL ····· Earth Level
EMP ····· Environmental Management Plan
ENDE ····· National Development Strategy
ENH ····· Mozambique National Hydrocarbons Company
EU ····· European Union
EXIM Bank of China ····· Export-Import Bank of China
FAO ····· Food and Agriculture Organization (UN)
FARE ····· Economic Rehabilitation Support Fund
FDI ····· Foreign Direct Investment
FEMATRO ·· Mozambican Federation of Association of Transporters
FIPAG ····· Water Supply Investment and Assets Fund
FS ····· Feasibility Study
FTRAB ····· Integrated Survey on the Labour Force
FUNAE ····· Energy Fund
GAZEDA ··· Special Economic Zones Office
GDP ····· Gross Domestic Products
GER ····· Gross Enrolment Ratio
GIS ····· Geographic Information System
GRDP ····· Gross Regional Domestic Product
HCB ····· Cahora Bassa Hydro-Power Plant
HDI ····· Human Development Index
HDPE ····· High-Density Polyethylene
HIV ····· Human Immunodeficiency Virus
IFC ····· International Finance Corporation
IFZ ····· Industrial Free Zone
IMF ····· International Monetary Fund
INAM ····· National Institute of Meteorology
INATUR ····· Tourism Development Authority
INATTER ··· National Land Transport Institute
INCM ····· National Institute of Communications
INE ····· National Statistics Institute
INEFP ····· National Institute for Employment and Vocational Training
IPP ····· Independent Power Producer
IPPF ····· Infrastructure Project Preparation Facility
ISP ····· Internet Service Providers
ITR ····· Interim Report
ITU ····· International Telecommunication Union
IUCN ····· International Union for Conservation of Nature and Natural Resources
IWRM ····· Integrated Water Resources Management
JICA ····· Japan International Cooperation Agency
LDPE ····· Low-Density Polyethylene
LNG ····· Liquified Natural Gas
MAE ····· Ministry of State Administration
MAR ····· Mean Annual Rainfall
MCA ····· Millennium Challenge Account
MCC ····· Millennium Challenge Corporation
MCJI-TIZ ··· Matibane-Crusse-Jamail Island Tourism Interest Zone
MDC ····· Maputo Development Corridor
MDG ····· Millennium Development Goals
ME ····· Ministry of Energy
MIC ····· Ministry of Industry and Commerce
MICE ····· Meetings, Incentives, Conferences, and Exhibitions
MICOA ····· Ministry of Coordination of Environmental Affairs
MICS ····· Multiple Indicator Cluster Survey (UNICEF)
MINAG ····· Ministry of Agriculture
MINED ····· Ministry of Education
MINTRAB ·· Ministry of Labour
MIPAR ····· Rural Water Supply Manual
MIREM ····· Ministry of Mineral Resources
MISAU ····· Ministry of Health

MITUR ····· Ministry of Tourism
MOPH ····· Ministry of Public Works and Housing
MPD ····· Ministry of Planning and Development
mt ····· Million tons
MT ····· Meticas
MTC ····· Ministry of Transport and Communication
MTPA ····· Million Tons Per Annum
MW ····· Mega watt
NDS ····· National Development Strategy
NEDO ····· New Energy and Industrial Technology Development Organisation
NEPAD ····· New Economic Partnership for African Development
NER ····· Net Enrolment Rate
NGN ····· Next Generation Network
NGO ····· Non-Government Organisation
NRW ····· Non-Revenue Water
NSO ····· National Statistical Office, Malawi
OD ····· Origin-Destination
OJT ····· On the Job Training
OSBP ····· One Stop Border Post
PAPA ····· Food Production Action Plan
PARP ····· Poverty Reduction Action Plan
PATI ····· Priority Areas for Tourism Investment
PCD ····· Cabo Delgado Ports
PEDEC-Nacala ····· The Project for Nacala Corridor Economic Development Strategies
PEDSA ····· Strategic Plan for Development of the Agriculture Sector
PEI ····· Poverty Environmental Initiative
PEP ····· Provincial Development Strategy
PEPIP ····· Strategic Plan: Promotion of Private Investment in Mozambique
PES ····· Payment for Ecosystem Services
PESA-ASR ·· Strategic Plan for Rural Water Supply and Sanitation
PII ····· Integrated Investment Programme
PPP ····· Public-Private Partnership
PR ····· Progress Report
PRISE ····· Integrated Road Sector Programme
ProSAVANA Triangular Cooperation for Agricultural Development of the Tropical Savannah in Mozambique
PSAA ····· Small Water Supply System
PSTN ····· Public Switched Telephone Network
PVC ····· Polyvinyl Chloride
RAI ····· Responsible Agricultural Investment
RD ····· Record of Discussion
REDD ····· Reducing Emissions from Deforestation and Forest Degradation
ROW ····· Right of Way
RSA-DTI ···· Department of Trade and Industry of South Africa
RSDIP ····· Regional Spatial development Initiative Programme
RSS ····· Road Sector Strategies
SADC ····· South African Development Community
SADCC ····· South African Development Coordination Conference
SAIDI ····· System Average Interruption Duration Index
SAIFI ····· System Average Interruption Frequency Index
SARI ····· System Average Restoration time Index
SC ····· Steering Committee
SCADA ····· Supervisory Control and Data Acquisition
SDC ····· Swiss Agency for Development and Cooperation
SDI ····· Spatial Development Initiatives
SDP ····· Spatial Development Programme
SEA ····· Strategic Environmental Assessment
SEZ ····· Special Economic Zone
SME ····· Small and Medium-Sized Enterprises
SPGC ····· Provincial Service of Geography and Cadastral
SPFFB ····· Provincial Services of Forest and Wildlife
SVC ····· Static VAR(Volt-ampere ractive) Compensators
TIA ····· National Agricultural Survey
TDM ····· Telecommunications of Mozambique
TEU ····· Twenty Foot Equivalent Unit
TFCA ····· Trans Frontier Conservation Areas
TIZ ····· Tourism Interest Zones
TRL ····· Transport Research Laboratory
TVE ····· Technical and Vocational Education
TVET ····· Technical and Vocational Education and Training
UCODIN ···· Coordinating Agency for Integrated Development of Nampula
UK ····· United Kingdom
UNDP ····· United Nations Development Programme
UN-HABITAT ····· The United Nations Human Settlements Programme
UNICEF ····· United Nations Children's Fund
UNIDO ····· United Nations Industrial Development Organisation
USA ····· United States of America
USAID ····· United States Agency for International Development
USD ····· United States Dollar
WB ····· World Bank
WG ····· Working Group
WHO ····· World Health Organisation
ZAE ····· Zonamento Agro-Eocologico National
ZMM-GT ···· Zambia-Malawi-Mozambique Growth Triangle

PART I

INTRODUCTION

PART I

INTRODUCTION

Chapter 1 Introduction

1.1 PEDEC-Nacala

PEDEC-Nacala (the Project for Nacala Corridor Economic Development Strategies in the Republic of Mozambique) is a study project for formulating "Integrated Development Strategies" for the Nacala Corridor and its surrounding areas including five provinces related to the Nacala Corridor (hereinafter referred to as the Nacala Corridor Region).

The improvement of the transport capacity of the Nacala Corridor is expected to become an important trigger to initiate regional development. Development strategies of PEDEC are formulated to take advantage of development opportunities and potentials to emerge due to the upgraded transport function of the Nacala Corridor.

PEDEC-Nacala seeks to promote "Dynamic and Inclusive Development" by paying attention not only to the dynamic relation between mineral resources development, transport corridor development and other economic sector development, but also to the inclusive need for environmental management, human resources development and institutional development. Furthermore, PEDEC-Nacala is also concerned about socially vulnerable people and remote area people who might not be able to participate development opportunities to emerge due to such mineral resources development, transport corridor development and other economic sector development.

PEDEC-Nacala provides a "Long-Term Vision and Spatial Structure" for the Nacala Corridor Region. PEDEC-Nacala recommends "Essential Development Strategies" that are required for triggering/initiating development and leading the initiated development to a further development so that development can be continuously realised leading to a region-wide development in the Nacala Corridor Region.

1.2 Background of PEDEC-Nacala

Historically, the Nacala Corridor was an international transport corridor consisting of Nacala Port, the Northern Railway and the Malawian Railway System. The Nacala Corridor used to be the most important export route for Malawi. However, the rail transport was disrupted by Mozambique's prolonged civil war (1977-1992).

In the 1990s, the deteriorated rail facilities and rolling stock of the Northern Railway were rehabilitated with international assistance. However, the railway rehabilitation could not so strongly drive economic development in the areas along the Nacala Corridor. Moreover, road connection was poor between the inland areas and Nampula/Nacala. Although there are a variety of resources and potentials for development in the Northern Region, considering the malfunctioning cargo rail

and road transportation, it had been difficult to envision future development in the areas along the Nacala Corridor and its surrounding areas by recent years.

In the late 1990s and 2000s, for international corridor development in southern Africa, private sector initiatives got considerable attention for their possibility to promote development including infrastructure. In fact, the operation of the Northern Railway and that of Nacala Port have been privatised since 2005. However, the private operator had not been able to secure sufficient funds to rehabilitate the rail facilities and rolling stock due to low demand for cargo transport in the Northern Region. This is because railways and roads were still in poor condition, private investments did not come into the region in those years, including for infrastructure development. As a result, private sector development did not get enough momentum built up to be able to lead regional development in the Northern Region.

This situation has changed since the late 2000s, when the Nacala Corridor began to attract attention

including the road sections between Nampula–Cuamba and Lichinga–Montepuez have been going on with the co-financing from Japan International Cooperation Agency (JICA), the African Development Bank (AfDB) and other banks. They have also decided to finance upgrade projects of the road sections of Cuamba-Mandimba-Lichinga. As a result, private investments in agriculture and tree planting sectors have also increased in the provinces of Nampula, Niassa and Zambezia.

Furthermore, another factor has arisen to bring development in the Nacala Corridor and its surrounding areas. The factor is large-scale coal exploitation projects in Tete Province. The coal reserve found in Tete Province is huge and of high quality. The expected coal production in Tete Province amounts to over 50 million tons/year by 2016 and 75 million tons/year by 2020. At present, several coal mines are operating and several coal mines will start their operation within five years.

This massive coal production requires at least three export routes consisting of railways and seaports. They are currently transporting the coal on Sena Railway to Beira Port. The export of coal from Tete was started in 2012. The capacity of Sena Line and Beria Port, however, is limited and will not be able to accommodate the increasing coal production in Tete. In addition to the Sena Line and Beira Port, there are currently three more alternative export routes. One of the most promising routes is the route using the Nacala Corridor, which runs from Moatize through Malawi and the Nacala Corridor up to Nacala Port.

The coal transport through the Nacala Corridor requires upgrading of the railway of the Nacala Corridor, as well as the construction of a green field section between Moatize and the Malawi Railway System and another new section to connect to a new coal terminal in Nacala-a-Velha. Although Tete and Malawi are not part of the conventional route of the Nacala Corridor, it would be Tete's coal that could revitalise the Northern Railway (Lichinga-Cuamba-Nampula-Nacala Port) so as to transport not only coal but also general cargo and containers. This is considered a very important factor to create development opportunities and potentials to initiate and promote regional development along the Nacala Corridor and its surrounding areas.

In this context, it is very critical to take proper actions to take advantage of these emerging

development opportunities and potential for effectively promoting the development of the Nacala Corridor Region. While such an increase in investments is expected both in private and public sectors and desirable for development of the Nacala Corridor Region, there are growing concerns about unplanned and uncoordinated development. The concerns include how to enhance the effectiveness of ongoing and planned projects. Unless proper measures are taken by the government to guide and coordinate development activities, a variety of development opportunities and potential of the Nacala Corridor Region may be underutilised. On the other hand, it is necessary to prepare measures to prevent or mitigate urban environmental deterioration and industry-related pollution, as well as land conflicts and depletion of environmental resources.

Under these circumstances, the Government of Mozambique recognised the importance and necessity of preparing a set of strategies for the entire Nacala Corridor Region. The Government of Mozambique requested that the Government of Japan provide technical assistance to the Project for Nacala Corridor Economic Development Strategies in the Republic of Mozambique (hereinafter referred to as "PEDEC-Nacala"), and both governments have agreed to implement the Project.

1.3 Goals and Objectives of PEDEC-Nacala

The Record of Discussions (RD) between Mozambique's Ministry of Planning and Development (MPD) and Japanese International Cooperation Agency (JICA) for the Project defines the goals and objectives of PEDEC-Nacala as follows.

The objective of PEDEC-Nacala is defined as "to formulate development strategies to guide appropriate development and investment in the Nacala Corridor." The development strategies of PEDEC-Nacala are selective and integrated in the coverage of economic sectors, infrastructure sectors and social service sectors. PEDEC Strategies are prepared raising valid points at the regional level. But PEDEC Strategies do not compose a comprehensive development plan.

The goals to be attained by utilising the development strategies of PEDEC are defined as follows:

- To enhance social capacity and economic growth in the Nacala Corridor Region
- To effectively guide appropriate development in the Nacala Corridor Region
- To promote private investment in the Nacala Corridor Region
- To appropriately manage resources of the Nacala Corridor Region

By following the defined goals, PEDEC-Nacala is to seek dynamic and inclusive development widely in the Nacala Corridor Region. PEDEC-Nacala pursues economic growth by creating dynamic relations between economic sectors and the transport development of the Nacala Corridor. PEDEC-Nacala recommends strategies for mitigating social and environmental problems, as well as institutional frameworks for effective and efficient regional development.

The RD defines the outputs of PEDEC-Nacala as follows:

- Integrated development strategies for the Nacala Corridor Region
- Database on socio-economy and various sectors in the Nacala Corridor Region, including GIS data
- Topographic maps (at a scale of 1: 10,000) for Nampula Area and Nacala Area

1.4 Guiding Principles of PEDEC-Nacala

Guiding principles for PEDEC-Nacala are a set of statements on "values" that have been developed and used for considering the future of the Nacala Corridor Region and for formulating strategies of PEDEC-Nacala. The guiding principles are influenced by the vision statement for the Nacala Corridor Region, "A peaceful, prosperous, equitable and sustainable region free from poverty in harmony with the environment". The guiding principles are also based on the understanding of the present situation and past development of the Nacala Corridor Region.

(1) Sustainability

PEDEC concerns itself with "Sustainable Development." PEDEC addresses the concept of "Sustainable Development" for the Nacala Corridor Region should have a multifaceted feature as follows:

approach:

- Maintaining the peace and social order
- Conserving the natural environment
- Maintaining traditional and cultural norms
- Developing diversified economic sectors

(2) Diversification

PEDEC emphasises the importance of diversification in the regional economy, rather than heavily depending on the mining sector. This diversification in development of economic sectors could create various opportunities in which more people could participate. Moreover, a diversified regional economy has remarkable resilience to external shocks compared to an economy more dependent on a single sector.

(3) Benefits to a Wide Region

PEDEC concerns itself with development to bring "benefits to a wide region" and "benefits to a wide range of societies." PEDEC does not aim to bring benefits just along the corridors. Corridor development should be a means to bring benefits to a wide region.

(4) Dynamic Development

PEDEC seeks "dynamicity" in development. Dynamic development is interrelated or integrated development between different economic sectors, different infrastructure and different groups of people. In dynamic development, furthermore, it is expected that one development induces another development, one sector development is conducive to development of another sector, or one area development is related to another area development. PEDEC concerns itself with ways to promote "dynamic relationship" in development.

(5) Inclusive Development

Dynamic development for the Nacala Corridor Region should be promoted not only by strategies

designed for economic and infrastructure development, but also by strategies designed for environmental management, social development and capacity development. PEDEC concerns itself with this way of "inclusiveness" in development. PEDEC is aware that both "dynamicity" and "inclusiveness" in development are required for sustainable development. PEDEC is also aware that economic development with dynamic features is not always almighty or capable of bringing sufficient benefits to a wide region, as well as to a wide range of societies.

PEDEC understands that economic development based on the upgraded transport corridor cannot always solve various social and environmental problems to arise in the Nacala Corridor Region. Moreover, such economic development based on corridor development might cause many problems. Therefore, PEDEC is required to pursue a wide range of development goals, namely those of capacity development (individual, institutional and social capacity), environmental management, social development, economic development and spatial development. This is a way to seek "Inclusive Development".

(6) Exogenous Development and Endogenous Development

PEDEC understands the importance of both endogenous development (development based on internal potential and effort) and exogenous development (development to be driven by external factors).

Since the economy and society of the Nacala Corridor Region started transformation of its economy and society by getting foreign investments, especially in the mining sector, it is necessary to cope with impacts and changes due to such exogenous development. It is also necessary to take advantage of development opportunities arising due to exogenous development.

On the other hand, PEDEC concerns itself with the necessity and importance of promoting endogenous development utilising a variety of inherent potential in the Nacala Corridor Region. It is partly because foreign investments and corridor development cannot necessarily solve problems of vulnerable people and remote areas.

As for investments in agricultural and forestry development, PEDEC concerns itself with not only how to protect existing people's rights (including those of small-scale farmers) from influences of incoming investments and how to maintain good relationships between investments from outside and existing people's livelihood/their land use, but also how to utilise development opportunities to arise due to private sector development in agriculture and forestry sectors.

(7) Beyond Geographical Distances: Ports and Corridors

For promoting development to benefit a wide region and going beyond geographical distances, PEDEC seeks ways to promote development by upgrading and utilising transport corridors. PEDEC considers how to extend transport corridors for organising a network to efficiently and effectively cover a wide region. To go beyond geographical distances, PEDEC also sees the importance of dynamic ports with efficient hinterland connections.

(8) Mining Development as the Initial Driving Force for Regional Development

PEDEC sees the exploitation of mineral resources as the initial driving force toward a wide regional development in the Nacala Corridor Region. PEDEC understands the importance of taking advantage of the following opportunities to arise due to coal and natural gas exploitation for

regional development:

- Possibility to upgrade railways in order to transport coal from Tete to Nacala Port
- Possibility to develop chemical industries by utilising natural gas

Therefore, the sustainability of mining operations for coal and natural gas is essential for sustainable development for the Nacala Corridor Region.

(9) Sustainability of Mining Operations

Mining operation always has risks of damaging the environment. Coal exploitation and coal transport, as well as natural gas exploitation and LNG production might also have negative impacts on the environment. Therefore, it is necessary to take measures to mitigate negative impacts on the environment and societies, including the expected negative impacts of the railway transport of coal on the social environment in Nampula and other cities whose central areas are disturbed by trains

1.5 Approach of PEDEC-Nacala

PEDEC-Nacala used a set of approach to formulate development strategies for the Nacala Corridor Region. This section describes the key features of the approach adopted by PEDEC-Nacala.

(1) Sectoral and Regional Perspectives

For development planning and implementation, there are two types of approach. One is sector approach, by which situational analysis, planning and implementation are vertically conducted within a sector. The other is regional approach, by which situational analysis and planning are horizontally conducted for a particular area from different sectors.

In the early phases, sector approach was adopted in this Project. This is because existing activities and plans are mostly based on the sector approach and it is easier to understand the present situation using the sector approach. On the other hand, at the planning stage for development strategies, the regional approach was emphasised. The recommended development scenario and overall development strategies were formulated by using the regional approach.

The priority for implementing sectoral strategies/measures was adjusted by considering selected development scenarios and overall development strategies which were formulated using the regional approach. Sector strategies/measures are important to be formulated because in actuality, most programmes and projects are implemented within their individual sectors.

(2) Strategic Environmental Assessment (SEA)[1]

Strategic environmental assessment (SEA) was done in parallel with strategy formulation in PEDEC-Nacala. Environmental and social aspects were taken into account from the earlier phases

[1] In Mozambique, several SEAs have been done on a trial basis by MICOA. The official SEA framework in Mozambique is yet to be established and approved. In PEDEC-Nacala, SEA has been done in the course of strategy formulation. However, the resul and process of the SEA for PEDEC-Nacala are not official. The methodology and process for SEA is shown in Chapter 21.

of strategy formulation. Evaluation and selection of development scenarios was conducted by looking at their environmental and social impacts, as well as other aspects. Furthermore, for development strategies proposed by PEDEC-Nacala, a set of analyses were conducted for SEA including environmental risk and opportunity matrix analysis, compatibility matrix analysis and compound matrix analysis.

In the course of strategy formulation, a series of stakeholder meetings (Working Group Meetings and Roadshows for provinces) were organised for getting various opinions at different stages, such as present situation analysis, identification of sector issues, identification of overall issues, formulation of overall development strategies, and formulation of essential development strategies.

The implications from these analyses and stakeholder meetings were submitted for further review and revision of the proposed strategies.

(3) Enforcement of Systems for Environmental Protection and Environmental Management

In strategy formation, development strategies that have risks of causing negative environmental and social impacts, as well as positive benefits, are not rejected simply because they have risks of negative impacts. For strategy formulation, it is assumed that enforcement of existing systems for environmental protection, environmental impact assessment (EIA) and environmental management is done properly to prevent environmental impacts through necessary capacity development of government officers for such enforcement activities.

PEDEC-Nacala seeks ways to prevent environmental and social impacts both by regulation enforcement (including implementation of EIA) and to mitigate negative impacts by implementing adequate measures against negative impacts.

(4) Consideration of Socially Vulnerable People and Geographically Remote Areas

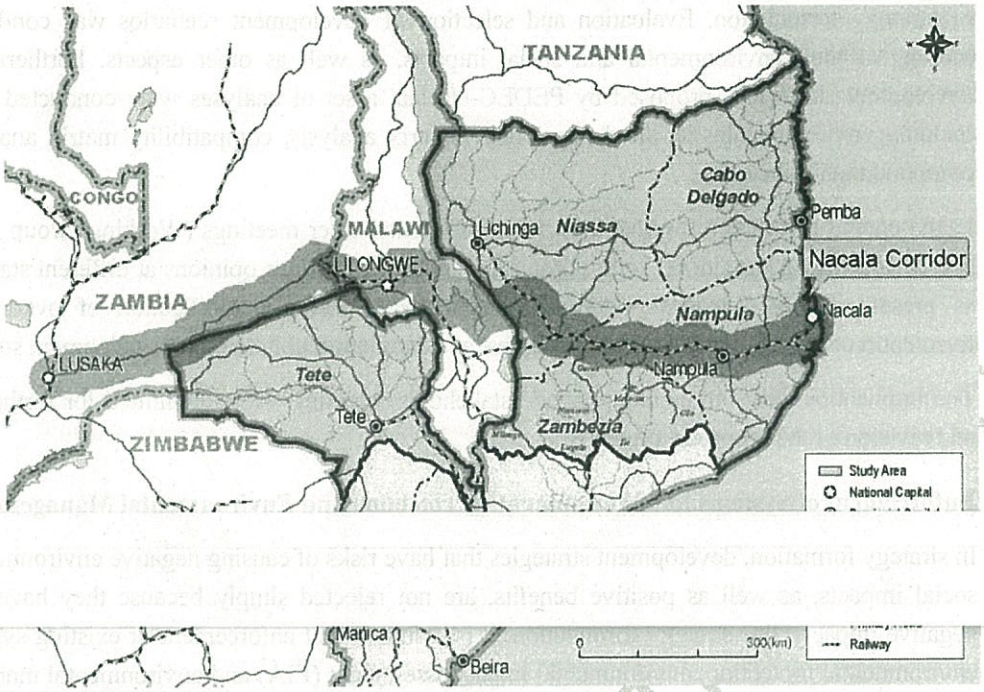
PEDEC-Nacala Study Team is aware of the difficulties of bringing benefits to vulnerable people and remote areas by encouraging them to take advantage of emerging development opportunities due to the corridor development and other economic sector development. Therefore, special attention was paid to such vulnerable people and remote areas in the present situational analysis and strategy formulation.

1.6 Study Area (Nacala Corridor Region)

The target area (study area) of PEDEC-Nacala comprises the four provinces of Nampula, Cabo Delgado, Niassa, Tete and the seven northern districts of Zambezia Province, which are districts of Alto Molocue, Gile, Gurue, Ile, Lugela, Milange and Namarroi. See Figure 1.6.1.

These areas have been selected for formulating a set of integrated regional development strategies (PEDEC Strategies). It is because these areas are expected to receive substantial impacts of the upgrading of the transport function and capacity of the Nacala Corridor and these areas can take advantage of development opportunities and potential to arise due to the upgraded Nacala Corridor.

The provinces and districts that are related to the Nacala Corridor are defined as the Nacala Corridor Region.



Source: JICA Study Team

Figure 1.6.1 Target Area (Study Area) of PEDEC-Nacala: Nacala Corridor Region

1.7 Project Framework and Organisations

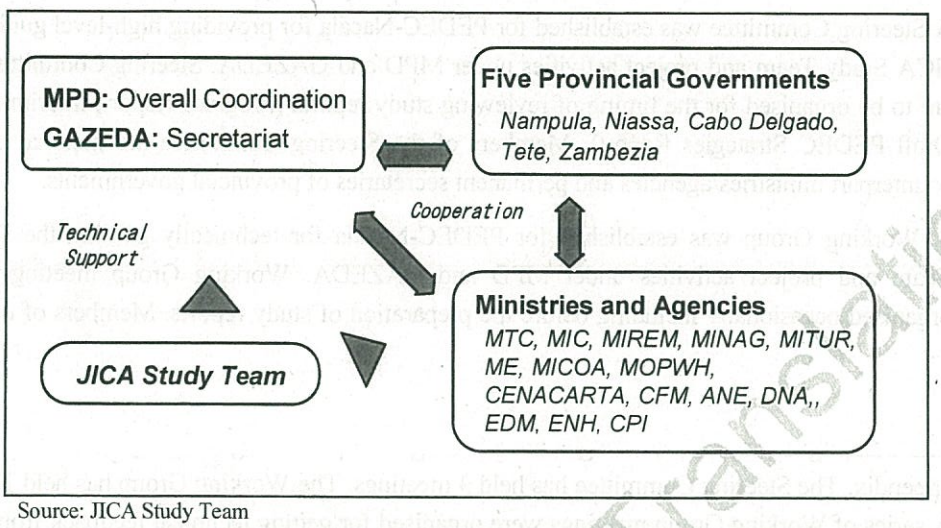
The Ministry of Planning and Development (MPD) is the executing agency for PEDEC-Nacala. The Special Economic Zones Office (GAZEDA) under MPD is functioning as the secretariat for the Project. The governments of the five provinces of Nampula, Niassa, Cabo Delgado, Tete and Zambezia are counterpart organisations at the provincial level. Other organisations participating in PEDEC-Nacala include the following:

- Ministry of Transport and Communication (MTC)
- Ministry of Industry and Commerce (MIC)
- Ministry of Mineral Resources (MIREM)
- Ministry of Agriculture (MINAG)
- Ministry of Tourism (MITUR)
- Ministry of Energy (ME)
- Ministry of Coordination of Environmental Affair (MICOA)
- Ministry of Pubic Works and Housing (MOPH)
- National Remote Sensing & Cartography Centre (CENACARTA)
- Mozambique Ports and Railways (CFM)
- National Road Administration (ANE)
- National Water Directorate (DNA)
- Mozambique Electricity Company (EDM)
- Mozambique National Hydrocarbons Company (ENH)
- Investment Promotion Centre (CPI)

These organisations are the members of the steering committee and working group for the Project.

JICA signed a contract with a team of consulting firms, which is represented by Oriental

Consultants Co., Ltd. and joined by RECS International Inc., International Development Centre of Japan, Kokusai Kogyo Co., Ltd., and Eight-Japan Engineering Consultants Inc. (hereinafter "JICA Study Team") to give technical assistance to the Mozambican counterpart agencies for PEDEC-Nacala.



Source: JICA Study Team

Figure 1.7.1 Project Organisations

1.8 Process and Schedule for formulating PEDEC Strategies

1.8.1 Phases of PEDEC-Nacala

PEDEC-Nacala was initiated in April 2012. For the purpose of formulating development strategies, the following four phases are to be implemented:

Phase 1: Analysis of Present Situation including that of Potential and Constraints

Phase 2: Formulation of Short-Term Development Strategies

In Phase 2, short-term development strategies are formulated considering how to enhance development potentials to emerge due to a variety of ongoing projects and planned projects (economic sector projects and infrastructure projects), and how to mitigate negative impacts of those projects.

Phase 3: Formulation of Draft Integrated Development Strategies (Short-Term and Mid and Long-Term Strategies) and Possible Measures (Ideas on Programmes/Projects)

Phase 4: Consultation with Civil Societies to Get Feedbacks on the Draft Integrated Development Strategies and Possible Measures

In the previous phase (Phase 3), future directions of development and the possibility of implementing the proposed development strategies have been identified. Then it will become possible to submit the draft PEDEC strategies to civil societies for consultation.

Phase 5: Finalisation of Integrated Development Strategies and Ideas on Priority Programmes/Projects

By incorporating the views and proposals of civil societies, integrated development strategies for the Nacala Corridor Region will be finalised.

PEDEC-Nacala has finished Phases 1 to 3. PEDEC-Nacala will go through Phases 4 and 5 from now on.

1.8.2 Steering Committee Meetings and Working Group Meetings

A Steering Committee was established for PEDEC-Nacala for providing high-level guidance to the JICA Study Team and project activities under MPD and GAZEDA. Steering Committee meetings are to be organised for the timing of reviewing study reports (Progress Report, Interim Report and Draft PEDEC Strategies Report). Members of the Steering Committee are national directors of counterpart ministries/agencies and permanent secretaries of provincial governments.

A Working Group was established for PEDEC-Nacala for technically guiding the JICA Study Team and project activities under MPD and GAZEDA. Working Group meetings are to be organised occasionally including before the preparation of study reports. Members of the Working

appendix. The Steering Committee has held 3 meetings. The Working Group has held 13 meetings. A series of Working Group meetings were organised for getting technical feedback from provinces and national ministries/agencies.

1.9 Organisation of the Draft PEDEC Strategies Report

The present Draft PEDEC Starateges Report was prepared based on the findings of data analyses and field investigations and integrates the views of the Mozambican counterparts expressed at working group meetings, steering committee meetings and occasional meetings with the JICA Study Team. Views of the representatives from Malawi and Zambia were also duly considered. The Draft PEDEC Strategies Report developed preliminary strategies presented in the Interim Report into a more cohesive set of strategies and proposed ideas on priority programmes and projects.

The Draft PEDEC Strategies Report is composed of the following textss:

Summary

Main Text: Volume 1

Volume 2

The Main Text of the Draft PEDEC Strategies Report is composed of 21 chapters under the following 7 parts and 3 appendices:

<u>Main Text: Volume 1</u>

Part I: Introduction

Part II: Present Conditions

<u>Main Text: Volume 2</u>

Part III: Vision, Goals, Overall Objectives and Overall Issues

Part IV:	Development Framework
Part V:	Development Strategies
Part VI:	Implementation Plan
Part VII:	Strategic Environmental Assessment
Appendix A:	Supporting Works
Appendix B:	Capacity Development Activities
Appendix C:	International Seminars

PART II

PRESENT CONDITIONS

PRESENT CONDITIONS

Chapter 2 Existing Conditions of Mozambique and Neighbouring Countries

2.1 Existing Conditions of Mozambique

2.1.1 Socioeconomy

(1) Population

In 2011, the population of Mozambique is estimated to be 23,05 million.

The population of Mozambique amounted to 20.63 million, based on the General Census of Population and Housing in 2007. It has rapidly increased with an annual growth rate of approximately 2.5% between 1997 and 2007. However between 1980 and 1997, the annual growth rate dropped by almost one per cent. This is due to the civil war. The past population trend is described in Table 2.1.1.

Table 2.1.1 Past Population Trend in Mozambique

	1950	1960	1970	1980	1997	2007
Population (Million)	6.47	7.60	9.41	12.13	16.08	20.63
Growth Rate (Annual %)	-	1.62	2.16	2.57	1.69	2.53

Source: INE, 1997 and 2007, General Census of Population and Housing and INE HP

(2) GDP and GDP per Capita

Since the end of the civil war in 1992, gross domestic product (GDP) of Mozambique has had a high growth rate of over 7 % per annum up to 2012. GDP per capita has also increased to 652.0 USD in 2012, which is equal to almost five times of the value in 1992. Table 2.1.2 shows the trend of GDP and GDP per capita in Mozambique.

Table 2.1.2 GDP and GDP per Capita in Mozambique

	1992	1997	2002	2007	2012
GDP (Current, USD billion)	1.9	3.8	4.2	8.1	14.6
Real GDP Growth (Annual %)	-5.2	11.1	9.2	7.3	7.5
GDP per Capita (Current, USD)	130.9	229.1	228.0	399.3	652.0
Growth Rate of GDP per Capita (Annual %)	-7.0	8.4	7.1	5.2	5.4

Source: IMF, 2012, World Economic Outlook (http://mozambique.opendataforafrica.org/tyjuuvg/mozambique-gdp-per-capita)

(3) GDP Structure

The GDP structure by broad sector in 2011 was 27% agriculture, 23% industry and 50% services. Agriculture and services grew steadily during the period between 2000 and 2011 more or less in parallel with GDP growth, while industry grew more rapidly during 1995–2005. The expansion of

the industrial sector is attributable to the aluminium refining plant, which was constructed in the latter part of the 1990s (See Table 2.1.3 and Table 2.1.4).

The share of the agricultural sector slightly decreased from 34.3% in 1995 to 27% in 2011. The manufacturing sector and electricity and water supply sector, on the contrary, grew sharply during 1995–2005. The share increased from 11.3% in 1995 to 23.3% in 2011 (See Table 2.1.3 and Table 2.1.4) .

Table 2.1.3 Annual Growth Rate of GDP by Economic Sector (%)

	1995	2000	2005	2010	2011
Agriculture	3.2 %	3.5 %	7.5 %	8.0 %	7.7 %
Industry	0.2 %	22.7 %	13.2 %	5.1 %	6.5 %
Services	4.0 %	6.5 %	8.2 %	7.9 %	5.9 %
Total	2.8 %	9.4 %	8.8 %	7.2 %	7.3 %

Source: Instituto Nacional de Estatistica (INE)

Agriculture	34.3 %	27.9 %	25.8 %	26.7 %	27.0 %
Industry	11.3 %	21.5 %	25.7 %	23.3 %	23.3 %
Services	54.3 %	50.7 %	48.5 %	50.0 %	49.7 %
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

Source: Instituto Nacional de Estatistica (INE)

(4) Economically Active Population (EAP)

As shown in Table 2.1.5, among the number of economically active population (EAP), the share of the agriculture sector is dominant although it decreased from 80.9% in 1997 to 75.2% in 2007. The shares of industry and services increased from 1997 to 2007.

Table 2.1.5 Number of Economically Active Population (EAP) in 1997 and 2007

	1997		2007	
	Persons	%	Persons	%
Agriculture	4,742,508	80.9 %	5,543,928	75.2 %
Industry	334,007	5.7 %	489,298	6.6 %
Service	788,905	13.5 %	1,337,733	18.1 %
Total	5,865,420	100.0 %	7,370,959	100.0 %

Source: Instituto Nacional de Estatistica (INE), General Census of Population and Housing 1997 and 2007

(5) Unemployment Rate, Poverty and Inequality

While Mozambique has succeeded in maintaining steady macro-economic growth, the official unemployment rate in the country was 18.7% in 2004/05, with 31% unemployment rate in urban areas and 13% in rural areas. This is due to the extremely high unemployment rate of the age group between 15-24.

The poverty ratio based on consumption declined significantly from 69% to 54% between 1997 and 2003, while the level of poverty in 2009 remained essentially the same as in 2003. The Gini coefficient, an indicator for measuring income disparity, increased from 0.40 in 1997 to 0.415 in 2003, indicating widening disparity, and remained at almost the same level until 2009 (0.414).

2.1.2 Existing Development Plans at National Level

There are a number of national development plans and goals as follows:

- National Development Strategy 2015–2035 (draft)
- Millennium Development Goals by 2015
- Government Five Year Programme 2011–2014
- Poverty Reduction Strategy Paper 2011–2014

In PEDEC-Nacala, one of the important aspects of the future vision for the Nacala Corridor Region is poverty reduction. In this sense, the Five-Year Development Plan 2011–2014 and Poverty Reduction Strategy Paper 2011-2014 are of high relevance to PEDEC-Nacala.

On the other hand, the National Development Strategy (NDS) for 2015-2035 under preparation by the Ministry of Development and Planning (MDP) is an official policy paper indicating the overall direction of development for Mozambique in the long term. The NDS emphasises the importance of industrialization by calling for the structural transformation of the economy (including agriculture), institutions, physical basis and human capital. In this sense, PEDEC Strategies are in line with the NDS 2015-2035.

PEDEC-Nacala is expected to serve as the implementation tool of the NDS for a specific region, the Nacala Corridor Region.

2.2 Mozambique and Neighbouring Countries

Mozambique and some of the surrounding countries are compared by selected indices in Table 2.2.1.

Table 2.2.1 Condition of Mozambique and Surrounding Countries

Indicator	Unit	Mozambique	Malawi	Zambia	Zimbabwe	Tanzania	South Africa
Population[1]							
Population (2010)	million	23.4	14.9	12.9	12.6	44.8	50.0
Population Growth Rate (2004-2010)	% per annum	2.4	3.0	2.4	0.0	2.9	1.1
Surface Area	thousand km^2	799.4	118.5	752.6	390.8	947.3	1,219.1
Population Density (2010)	person/km^2	29.3	125.7	17.2	32.2	47.3	41.0
Rate of Urban Population	%	38	20	36	38	26	62
Economy[1]							
Human Development							
HDI in 2012[2]	index	0.327	0.418	0.448	0.397	0.476	0.629
HDI Rank in 2012[2]	rank out of 187 countries	185	170	163	172	152	121
Literacy Rate in 2009[3]	%	55.1	73.7	70.9	91.9	72.9	88.7
Infant Mortality Rate[3]	Number of deaths under 5 years old per 1,000 births	135.0	92.1	111.0	79.8	92.4	56.6

Source 1: World Bank, World Development Indicators
Source 2: UNDP, International Human Development Indicators
Source 3: UNESCO Institute for Statistics

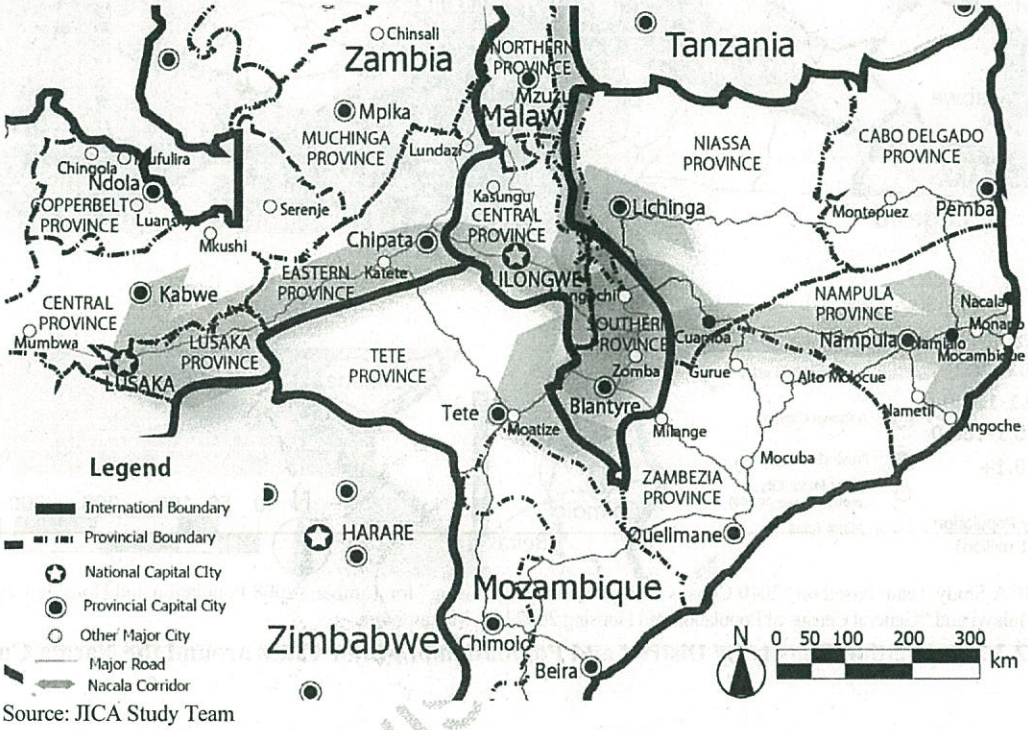
The population of Mozambique at 23.4 million is larger than those of Malawi (14.9 million), Zambia (12.9 million) and Zimbabwe (12.6 million), but more or less half of those of Tanzania (44.8 million) and South Africa (50.0 million). The surface area of Mozambique at 799 thousand km^2 is comparable to that of Zambia (752 thousand km^2) and almost seven times larger than Malawi (119 thousand km^2). Population density of Malawi at 125 persons per km^2 is much higher than the other countries including Mozambique at 29 persons per km^2. Urbanization in Mozambique is relatively high at 38%.

South Africa is outstanding in the size of its economy with its GDP at 363 billion USD in 2010, about 38 times that of Mozambique at 9.6 billion USD. Mozambique experienced the highest GDP growth among the seven countries at 7.8 % per year between 2000 and 2010. GDP per capita of Mozambique at 394 USD in 2010 is the second lowest, next to Malawi at 339 USD.

The human development index (HDI) of Mozambique was the lowest at 0.327, with its position at 185th among 187 countries in the world. Literacy rate at 55% and the mortality rate of children under 5 years of age at 135 deaths per 1,000 births were also the worst among the seven countries.

2.3 Spatial Characteristics of Mozambique, Malawi and Zambia along Nacala Corridor

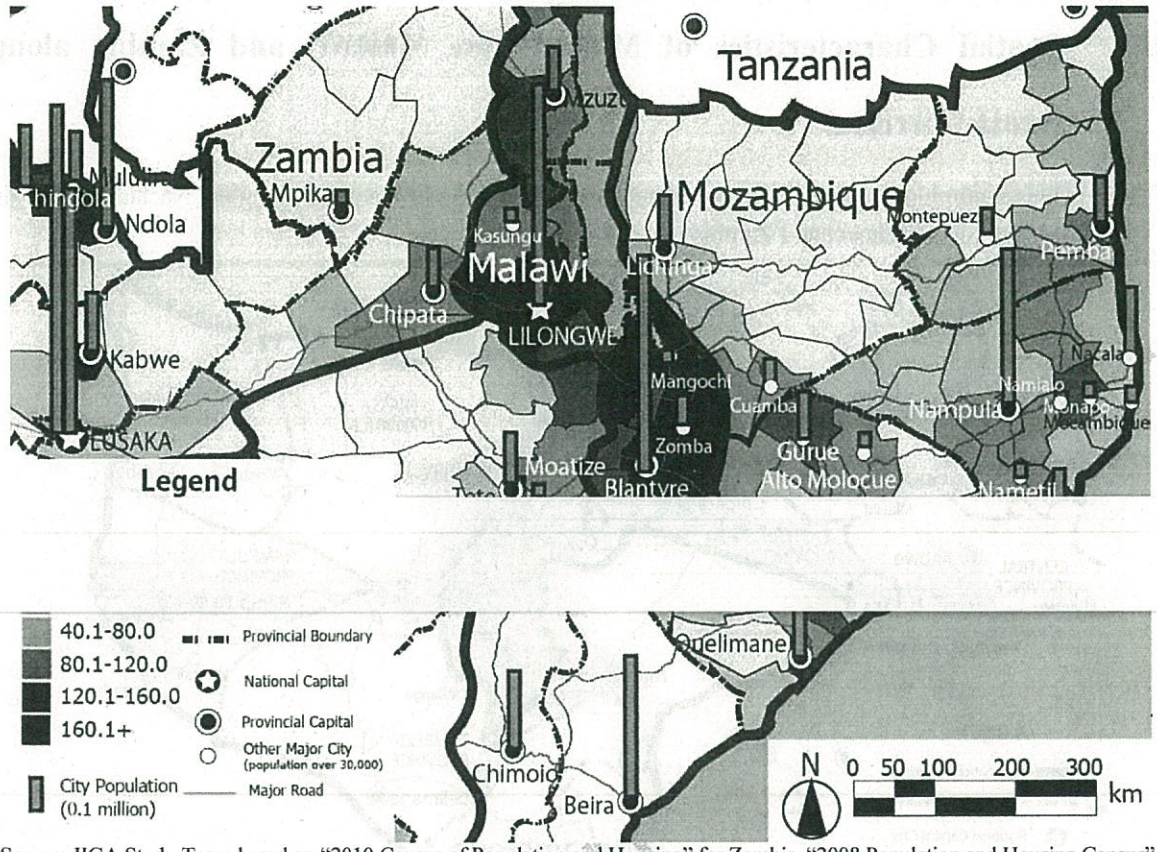
This section looks further into the current spatial situation of the areas along the Nacala Corridor in Mozambique, Malawi and Zambia.



Source: JICA Study Team

Figure 2.3.1 Areas in Mozambique, Malawi and Zambia along Nacala Corridor

The largest city in the Nacala Corridor is Lusaka, with over 1.7 million inhabitants as of 2010. Other large cities are Lilongwe and Blantyre in Malawi, and Nampula and Nacala in Mozambique. There are also several smaller cities along the corridor. The cities and district centres closer to the Nacala Corridor in Mozambique are relatively more populated than the other areas in the Nacala Corridor Region (See Figure 2.3.2). The actual number of each cities' population of Malawi and Zambia are shown in Table 2.4.2 and Table 2.5.2 respectively.



Source: JICA Study Team based on "2010 Census of Population and Housing" for Zambia, "2008 Population and Housing Census" for Malawi and "General Census of Population and Housing 2007" for Mozambique

Figure 2.3.2 Population Density by District and Population of Major Cities around the Nacala Corridor

2.4 Existing Conditions of Malawi along the Nacala Corridor

(1) Population Trend of Malawi

In the past decades the population of Malawi has been increasing, especially in the Northern Region and the Central Region with the annual population growth rate of over two per cent. On the other hand population density of the Southern Region is higher than that of the other two regions with 184.7 person/km^2. The Northern Region's population density is much below the country's average.

Table 2.4.1 Population Trend of Malawi by Region

Region	Population			Annual Population Growth Rate		Surface Area (km^2)	Population Density (person/km^2)
	1987	1998	2008	1987-1998	1998-2008		2008
Northern	911,787	1,233,560	1,708,930	2.8%	3.3%	26,931	63.5
Central	3,110,986	4,066,340	5,510,195	2.5%	3.1%	35,592	154.8
Southern	3,965,734	4,633,968	5,858,035	1.4%	2.4%	31,753	184.7
Malawi	7,988,507	9,933,868	13,077,160	2.0%	2.8%	94,276	138.7

Source: : National Statistical Office of Malawi, 2008 Population and Housing Census

The major cities of Malawi are also mostly located in the Central and Southern Regions including Lilongwe and Blantyre which have much larger population than all other cities in Malawi. However, Mzuzu, the capital city of Northern Region has been growing its population rapidly for over two decades.

Table 2.4.2 Population of Major Cities in Malawi along Nacala Corridor

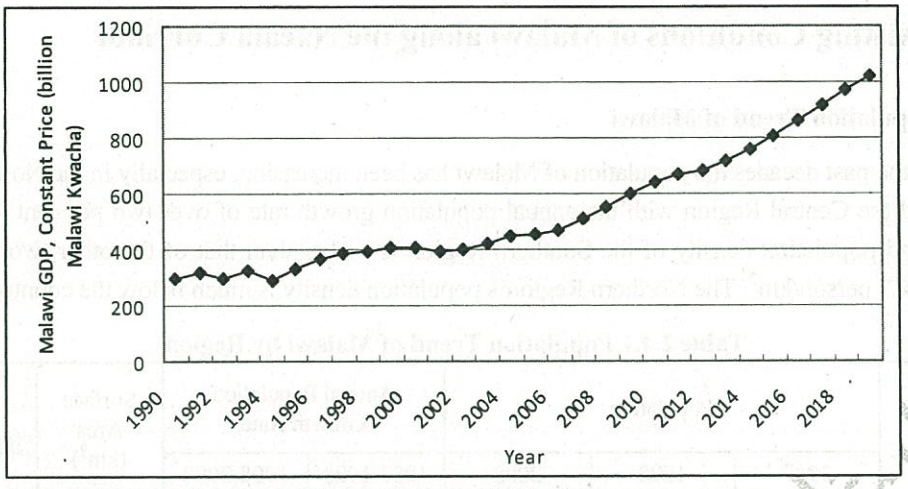
City	Region	Population			Annual Population Growth Rate	
		1987	1998	2008	1987-1998	1998-2008
Lilongwe	Central	223,318	440,471	674,448	6.4%	4.4%
Blantyre	Southern	333,120	502,053	661,256	3.8%	2.8%
Mzuzu	Northern	51,904	86,980	133,968	4.8%	4.4%
Zomba	Southern	43,250	65,915	88,314	3.9%	3.0%
Kasungu	Central	11,591	27,754	39,640	8.3%	3.6%
Mangochi	Southern	14,758	26,570	39,575	5.5%	4.1%

Source: National Statistical Office of Malawi, 2008 Population and Housing Census

(2) GDP Trend of Malawi

Malawi has been growing its GDP mainly with tobacco exports. The country's economy also relies on tea and sugarcane production. Due to its agriculture dependent economy, the economy of Malawi is very vulnerable. In addition to the natural condition, the antismoking trend around the world is said to have had a negative impact on the economy.

The GDP of Malawi was growing slowly including years with some decline until the beginning of the 2000s. From the middle of the 2000s the GDP has been growing steadily and is projected to keep growing.



Source: IMF, World Economic Outlook Database, April 2014 Edition

(3) Major Industries and Potentials of Malawi

As mentioned before, the major industry of Malawi is tobacco. Other major items exported from Malawi are sugar, tea, coffee and uranium. On the other hand, Malawi depends highly on imported products, such as fuel and fertiliser from South Africa. Recently the import route for fuel has been mainly via Beira Port. Other ports in Tanzania, as well as land transport via South Africa and Zambia, are also used. The international trading of Malawi, which needs to rely on land transport through a third country, is a great potential for the Nacala Corridor.

Currently, most of the products such as tobacco and tea are transported to South Africa for containerization along with other products exported to Europe and the United States via Durban in South Africa; goods are transported by land, to and from Durban, through Mozambique and Zimbabwe. However, prior to the independence war in Mozambique, Malawi's main international trading ports were Nacala and Beira. These routes would be a much more economical choice for Malawi if Malawi was connected with these ports by railway. Other major trading partners of Malawi besides Europe, North America and the African countries are India, China and Korea. Ports on the eastern African side have a great potential for international trading with these countries.

(4) Development Plans for Malawi

The following plans are development plans which are preferable for Malawi within Nacala Corridor.

- **Railway rehabilitation by Vale (Cuamba-Nayuchi):** It is preferable for Malawi to secure the transportation route to the sea by the rehabilitation. Through taking this chance, Malawi is thinking about industrial development and the development of Malawi.
- **Utilizing Water Transportation of Malawi Lake:** It can also be considered to develop the Multi-Modal Transport Node of roads, rail and water transport (Logistics Centre).

2.5 Existing Conditions of Zambia on the Nacala Corridor

(1) Population Trend of Zambia

Lusaka Province which has the capital city of Zambia, Lusaka has been increasing its population rapidly in the past decades. Other provinces, except Copperbelt Province, have also increased in population at over 2.5% per annum in the past two decades.

Table 2.5.1 Population Trend of Zambia along the Nacala Corridor by Province

Province	Population			Annual Population Growth Rate		Surface Area (km^2)	Population Density (person/km^2)
	1990	2000	2010	1990-2000	2000-2010		2010
Central	771,818	1,012,257	1,307,111	2.7%	2.6%	94,394	13.8
Copperbelt	1,458,459	1,581,221	1,972,317	0.8%	2.2%	31,328	63.0
Eastern	949,521	1,231,283	1,592,661	2.6%	2.6%	51,476	30.9
Lusaka	991,226	1,391,329	2,191,225	3.4%	4.6%	21,896	100.1
Muchinga	400,492	524,186	711,657	2.7%	3.1%	87,806	8.1
Zambia	7,759,117	9,960,481	13,092,666	2.0%	2.8%	752,612	17.3

Source: Central Statistical Office of Zambia, 2010 Census of Population and Housing, 2012

Like most counties around the world, urbanization is also occurring in Zambia and Lusaka the capital city is not an exception. The population of Lusaka has been growing rapidly at almost five per cent annual population growth rate during the last decade and its population reached 1,747,152 in 2010. Other cities which have been growing rapidly in the past decade are cities mainly in Eastern Province and Muchinga Province. However the population of these cities are still relatively small when compared with the largest city in Eastern Province, Chipata with a population of 116,627.

On the other hand cities in Copperbelt Province, which is the centre of the mining industry, have been increasing their populations steadily with growth around two percent per annum.

Table 2.5.2 Population of Major Cities in the Provinces along the Nacala Corridor in Zambia

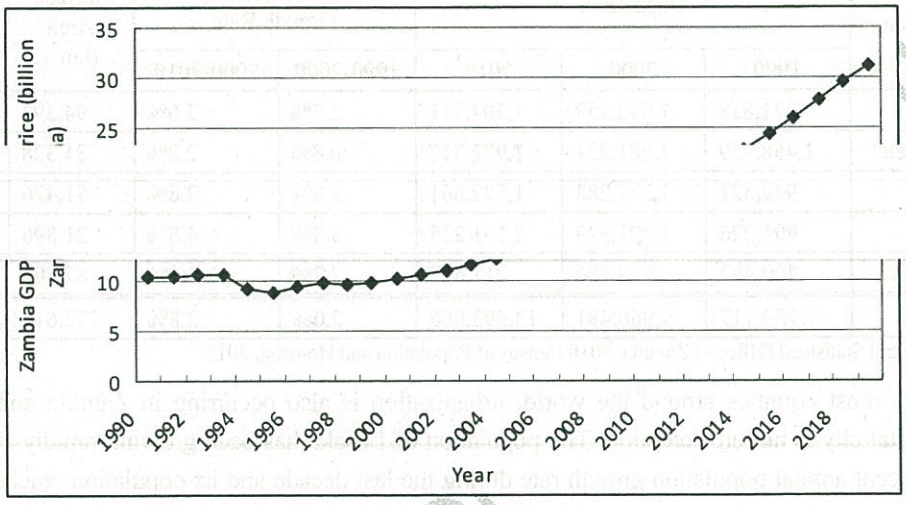
Major City	Province	Population			Annual Population Growth Rate	
		1990	2000	2010	1990-2000	2000-2010
Lusaka	Lusaka	769,353	1,084,703	1,747,152	3.5%	4.9%
Ndola	Copperbelt	329,228	374,757	451,248	1.3%	1.9%
Kabwe	Central	154,318	176,758	202,360	1.4%	1.4%
Chingola	Copperbelt	142,383	147,448	185,246	0.4%	2.3%
Mufulira	Copperbelt	123,936	122,336	151,309	-0.1%	2.1%
Chipata	Eastern	52,213	73,110	116,627	3.4%	4.8%
Mpika	Muchinga	20,950	25,856	39,724	2.1%	4.4%
Katete	Eastern	7,165	10,413	21,459	3.8%	7.5%
Mumbwa	Central	11,015	15,949	20,390	3.8%	2.5%
Mkushi	Central	7,804	10,597	19,196	3.1%	6.1%
Serenje	Central	8,265	8,577	17,754	0.4%	7.5%

Lundazi	Central	5,590	9,159	15,902	5.1%	5.7%
Chinsali	Muchinga	7,509	11,507	15,198	4.4%	2.8%

Source: Central Statistical Office of Zambia, 2010 Census of Population and Housing, 2012

(2) GDP Trend of Zambia

The economy of Zambia has long been relying on copper-mining. The decline in the copper output and the low copper price had caused Zambia's economy to stagnate in the 1990's. From 2004 the increase in the copper price pushed the GDP of Zambia to increase steadily and is also projected to continue to keep its growth.



Source: IMF, World Economic Outlook Database, April 2014 Edition
Note: Estimated figures from 2013

Figure 2.5.1 GDP Trend of Zambia

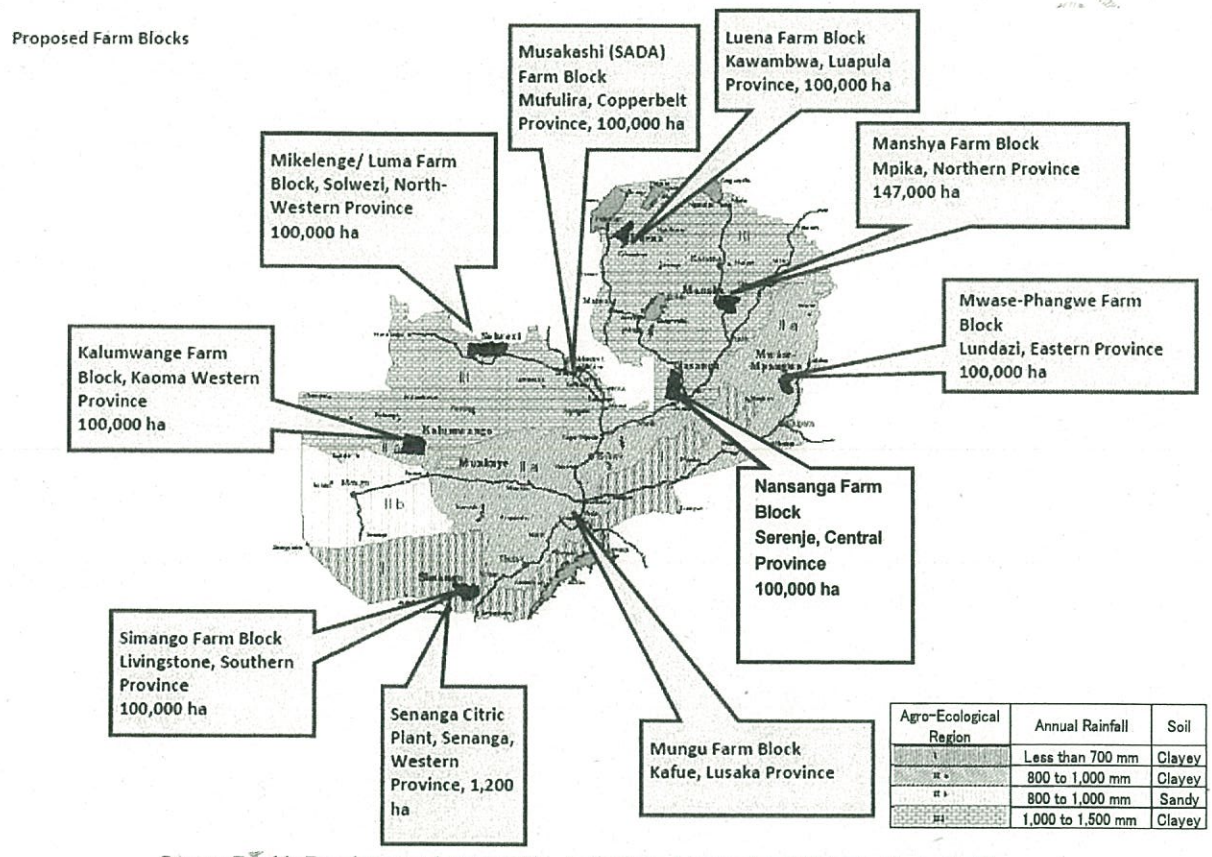
(3) Major Industries and Potential of Zambia

With a larger urban population and GDP than Malawi, Zambia has an even larger potential for the development of Nacala Corridor. The economy of Zambia has been heavily relying on copper mining and trading, mainly with Europe and China. However, having eight neighbouring countries in Africa, Zambia has a slogan, "From Landlocked Country to Land-Linked Country," for trying to increase export of other products besides copper and related products to the neighbouring African countries.

Some of the major export products of Zambia are copper, metal processing products, sugar, chemicals, and cement. Approximately one third of exports from Zambia go to Europe (mostly to Switzerland which imports copper), another third to African countries and the rest to China and other countries such as in the Middle East. Originally, export to China was transported by the Tazara Railway line, which was developed by China, to Dar es Salam Port in Tanzania. However, currently, due to the condition of Tazara Railway, most international trading is done via Durban Port in South Africa. Although Tazara Railway has a plan for rehabilitation, Nacala Corridor will have a chance to capture some share of the transport market during such period when Tazara Railway is not functioning.

Although the share of export of agricultural products is much smaller compared with that of the metal industry, which amounts to about 77% in dollar value, Zambia is currently exporting various

agriculture products, such as tobacco, sugar, wheat and flowers mainly to China, African counties and European countries. The Government of Zambia also has a plan to increase agro-processed products, which includes the plan for transforming Chipata, the capital city of Eastern Province into an agricultural processing centre of Zambia. Eastern Province in Zambia is an agricultural province with tobacco, cotton and pig farming being some of its major industries. As part of the plan to develop agriculture, the government has embarked on a land development programme which involves opening up new farming blocks for commercial development and expansion of the agriculture sector. Mwase-Phangwe Farm Block at Lundazi District in Eastern Province is one of the proposed farm blocks.[1]



Source: Zambia Development Agency, 2011, Agriculture, Livestock and Fisheries Sector Profile

Figure 2.5.2 Proposed Farm Blocks in Zambia

In addition to the development of Chipata as the agro-processing centre, Zambia also has a plan to extend the railway from Chipata to Serenje, which will connect the Nacala Railway line to the Tazara Railway. There is also a plan to develop Chipata Dry Port and the railroad freight cars will also be purchased soon for the railway transport between Chipata and Mchinji in Malawi.

(4) Development Plans for Zambia

Some of the major development plans in Zambia are as follows:

[1] "Farm Blocks" are a tool for inviting investors for commercial agriculture. The government of Zambia started a land development programme which provides potential investors with new farming blocks for commercial agriculture. Each farm block is designed to have at least one large-scale farm around 10,000ha.

- **Railway Development (Serenje-Chipata):** Railway connection from Serenje on the Tazara Rail to Chipata in the Eastern Province on the Nacala Corridor is currently planned along with the development of the processing industry centring in the Eastern Province (Chipata).
- **One Stop Border Post (OSBP):** Efforts at OSBPs are currently taking place in Zambia.
- **Farm Block:** Large-scale farm programme embarked on by the government for commercial development and expansion of the agriculture sector.

2.6 Development of International Corridors

Initiatives of several international corridors have been discussed in Southern Africa since the 1980s including the South African Development Coordination Conference (SADCC), which later changed its name to South Africa Development Community (SADC), Spatial Development Initiatives (SDI) and New Partnership for Africa's Development (NEPAD).

This section summarizes these initiatives on international corridors in Southern Africa.

(1) Transport Corridors by South Africa Development Community (SADC)

In the 1980s, the Southern African Development Coordination Conference (SADCC) designated major transportation routes connecting land-locked counties with major ports by railways, roads and pipelines as corridors and gave high priority to implementing necessary infrastructure for forming the corridors. The objectives for developing the transport corridors are to provide efficient access to inland countries, to reduce prices of consumer goods and intermediate goods, and to integrate neighbouring countries into a larger economy.

The SADC was established in 1992 to promote sustainable and equitable economic growth and socioeconomic development. In 1997, the Southern Africa Development Community (SADC) identified the following seven corridors which focus on transport in the region:

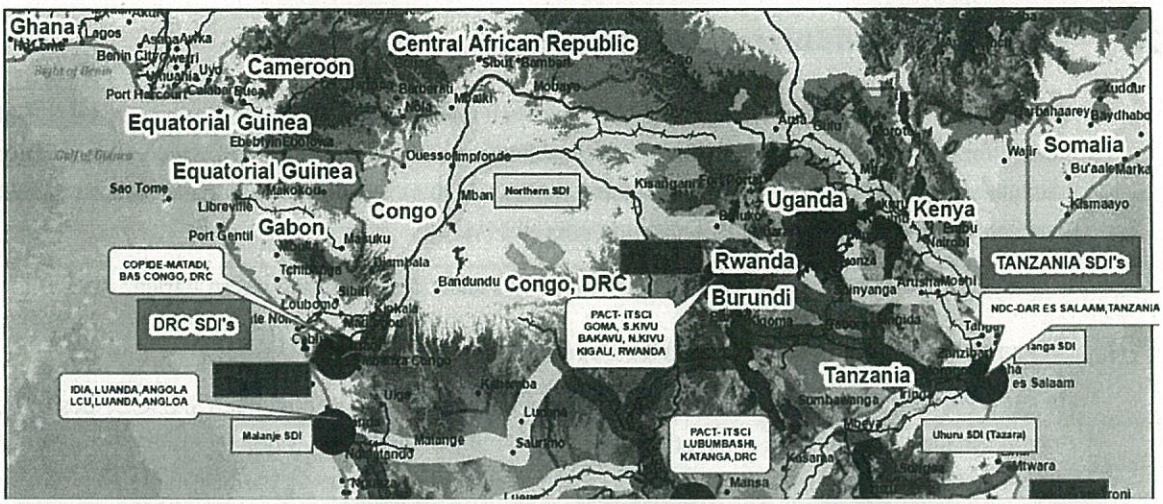
- Southern Corridor (South Africa-Botswana-Zimbabwe-Zambia-Congo)
- Maputo Corridor (Mozambique-South Africa)
- Walvis Bay Corridor (Botswana-Karahari-Cabribi
- Beira Corridor (Mozambique-Zimbabwe)
- Nacala Corridor (Mozambique-Malawi-Zambia)
- Tazara Corridor (Tanzania-Zambia)
- Liboto Corridor (Angola-Congo-Zambia)

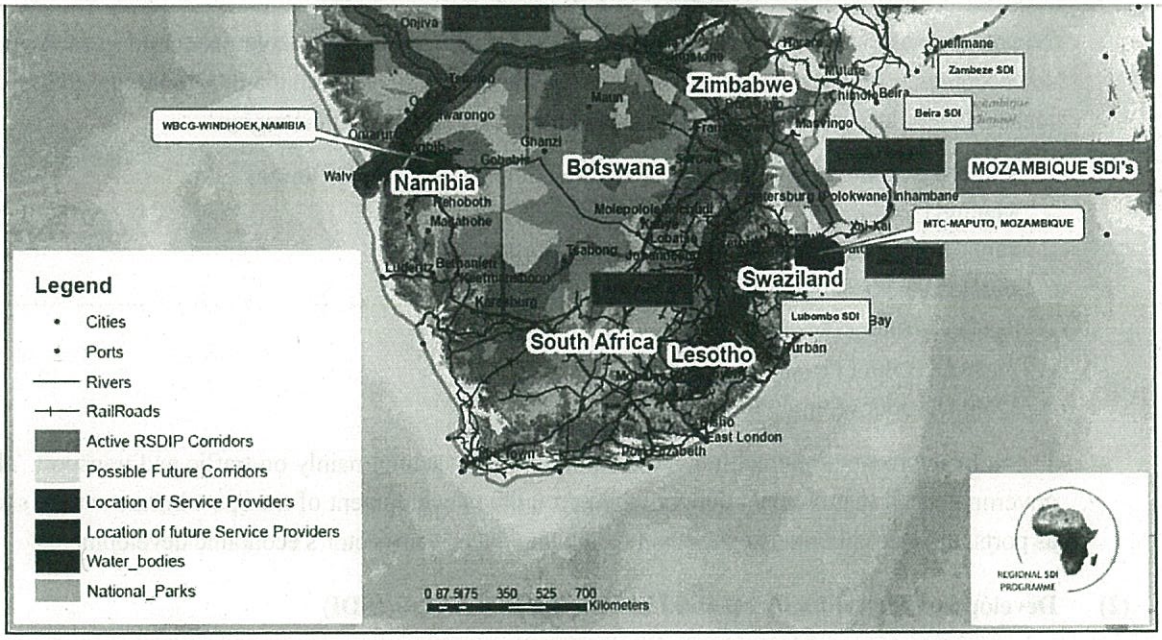
These corridors were regionally integrated initiatives focusing mainly on traffic and transport. The governments and international donors focused on the development of transport infrastructure, such as ports, railways and roads rather than facilitating the private sector's economic development.

(2) Development Corridors by Spatial Development Initiative (SDI)

The Spatial Development Initiatives (SDI) Programme was launched by the Department of Trade and Industry (DTI) of South Africa in 1996. Unlike the traditional comprehensive development strategy approach promoted based on government programmes and projects, in the SDI Programme the government provides a flexible technical assistance facility to establish a series of measures designed to attract private investors and to promote PPPs into a bundle of financially bankable projects. The Regional SDI Programme started the "Maputo Development Corridor" between South Africa and Mozambique in 1996.

In Southern Africa, there are as many as 19 development corridors that were identified in the Regional SDI Programme (RSDIP). However only eight out of these are currently identified as active RSDIP corridors (Figure 2.6.1). Out of the 19 corridors, Mozambique is part of eight SDIs including Nacala Corridor which is currently categorised as a "possible future corridor" along with Beira Corridor and Zambeze Corridor.





Source: Regional SDI Programme

Figure 2.6.1 Current Regional SDI Corridors

(3) Development Corridors by NEPAD Spatial Development Programme (SDP)

In 2002, the New Partnership for Africa's Development (NEPAD) was ratified by the African Union (AU) to address Africa's development problems including poverty reduction and sustainable development of Africa. The aim of NEPAD is to promote regional economic integration by bridging Africa's infrastructure gap. In order to achieve its aim, the NEPAD Framework was developed which also includes NEPAD Spatial Development Programme. The objectives of this Programme are as follows:

- Stimulate investment-led economic growth and development;
- Catalyse other (sustainable) sectors;
- Facilitate intra-and extra-African trade;

- Promote regional economic cooperation and integration;
- Optimize the provision and utilization of infrastructure;
- Encourage beneficiation and economic diversification;
- Enhance competitiveness of African economies; and
- Stimulate employment and wealth creation.

(4) From Transport Corridors to Development Corridors

With the defined approach of SDI as well as the success of Maputo Corridor, SDI has succeeded in changing the attitudes and policies of governments and international development partners toward private sector initiatives. Unlike the traditional development approach of national governments, the approach of SDI is rather feasible when bankable packages2 and government programmes for strategic infrastructure implementation are both brought together.

However, even in a developing country like Mozambique, private sectors are always facing global competition. Therefore, it is not easy for private sectors to mobilize sufficient funds for rehabilitating railways or ports for corridor development. In fact, no other corridors besides the Maputo Corridor have been able to achieve the formulation of a "development corridor". In other words, all other corridors except Maputo Corridor still remain underdeveloped and they are not functioning even as "transport corridors".

(5) Development of Nacala Corridor

In order to promote the formulation of "development corridors" in Africa, private sector projects should play a significant role as an initial driving force for developing "transport corridors" and at the same time, private economic investors should be able to make profits along the transport corridors. In this way, transport corridors will be transformed to become development corridors.

The private sector projects which can fulfil the required condition of being a starting project are as follows:

In order to establish "development corridors", the following conditions are required for making a private sector project become the initial driving force for formulating "transport corridors" in the beginning:

- There is a relatively large demand for transport in the beginning phase just after transport infrastructure, such as railways, roads, and ports, is completed. In other words, transportation needs a large demand from the beginning of the corridor development. (ex. Maputo Corridor had a relatively large demand for transport, including steel, aluminium, ferro-alloys, coal, wood and granite from South Africa)
- It is possible for private sectors to own or mobilize sufficient funds to fulfil infrastructure construction, maintenance and operation necessary for starting-up a transport corridor.
- The financial gains from economic development to be enabled by the formation of a transport corridor must be large enough to fund transport infrastructure development for the transport corridor.

[2] Bankable package is a package of economic sector projects and infrastructure projects which can be financed by banks.

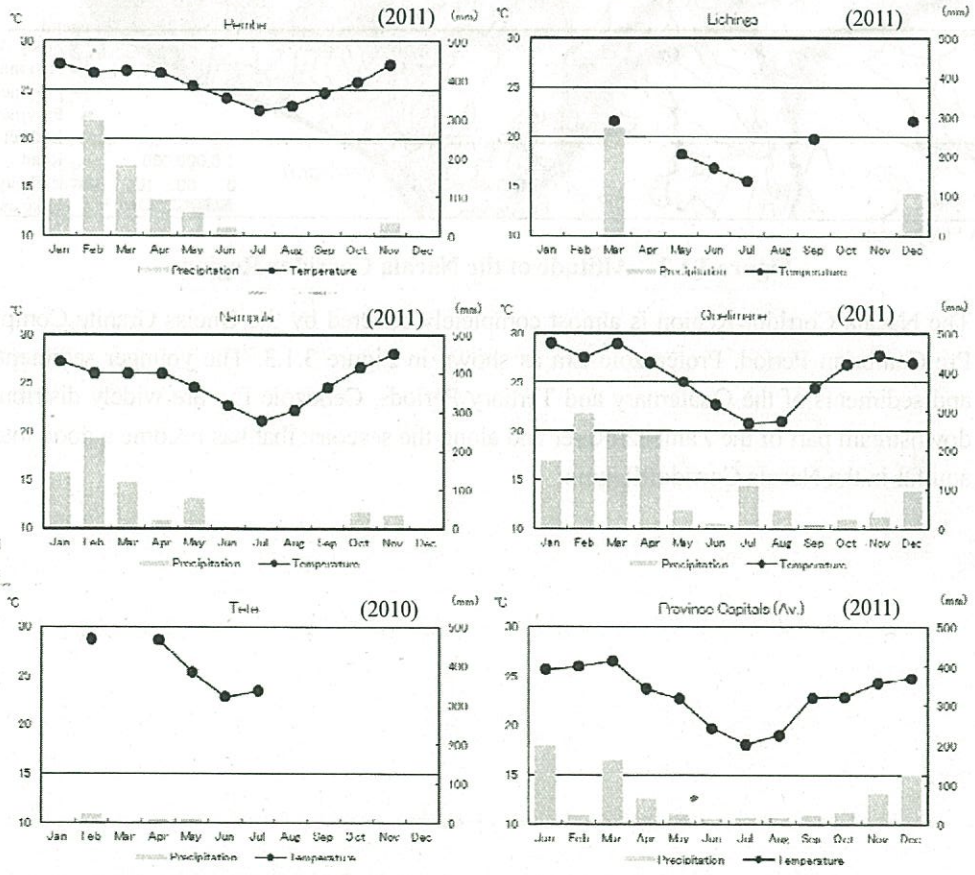
Nacala Corridor is one of the few development corridors which can satisfy the requirements mentioned above. It will be made possible by coal mining in Tete and their need to transport the coal from Tete to Nacala Port in addition to Beira Port.

Chapter 3 Existing Conditions of the Nacala Corridor Region

3.1 Natural Conditions and Water Resources of the Nacala Corridor Region

Mozambique is a long country stretching between the latitudes of 10°27' and 26°52' south and longitudes 30°12' and 40°51' east with a surface land area of 786,380 km^2. The Nacala Corridor Region is located in the northern part of the country and covers 444,458 km^2 with a maximum length of approximately 900 km in the north–south direction and approximately 1,100 km in the east–west direction.

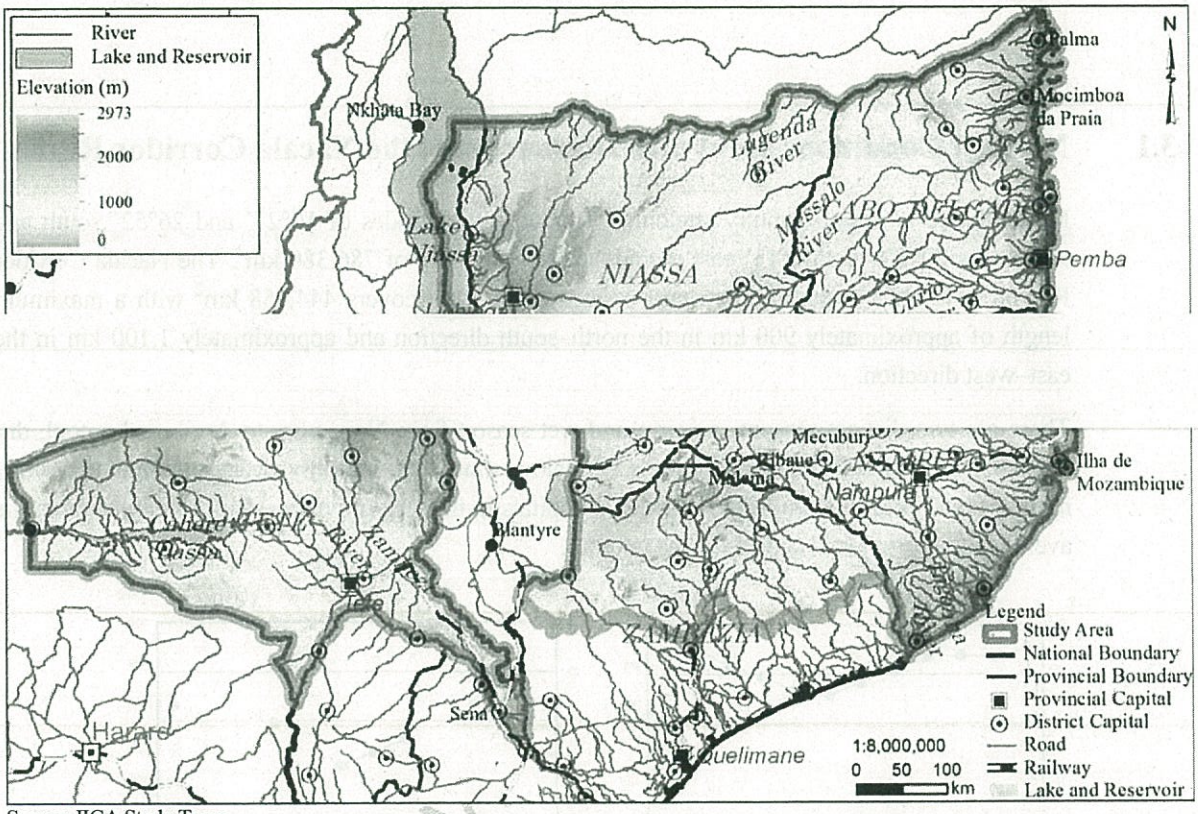
There are two distinct seasons, a warm and wet season from November to April, and a cool, dry season from May to October. Figure 3.1.1 below shows the monthly average temperatures and monthly total precipitation of the provincial capitals in the five provinces, and for comparison, the average of all provincial capitals in the country.



Source: National Methodology Institute, 2010 for Tete, 2011 for others

Figure 3.1.1 Monthly Average Temperature/Monthly Total Precipitation of the Provincial Capitals

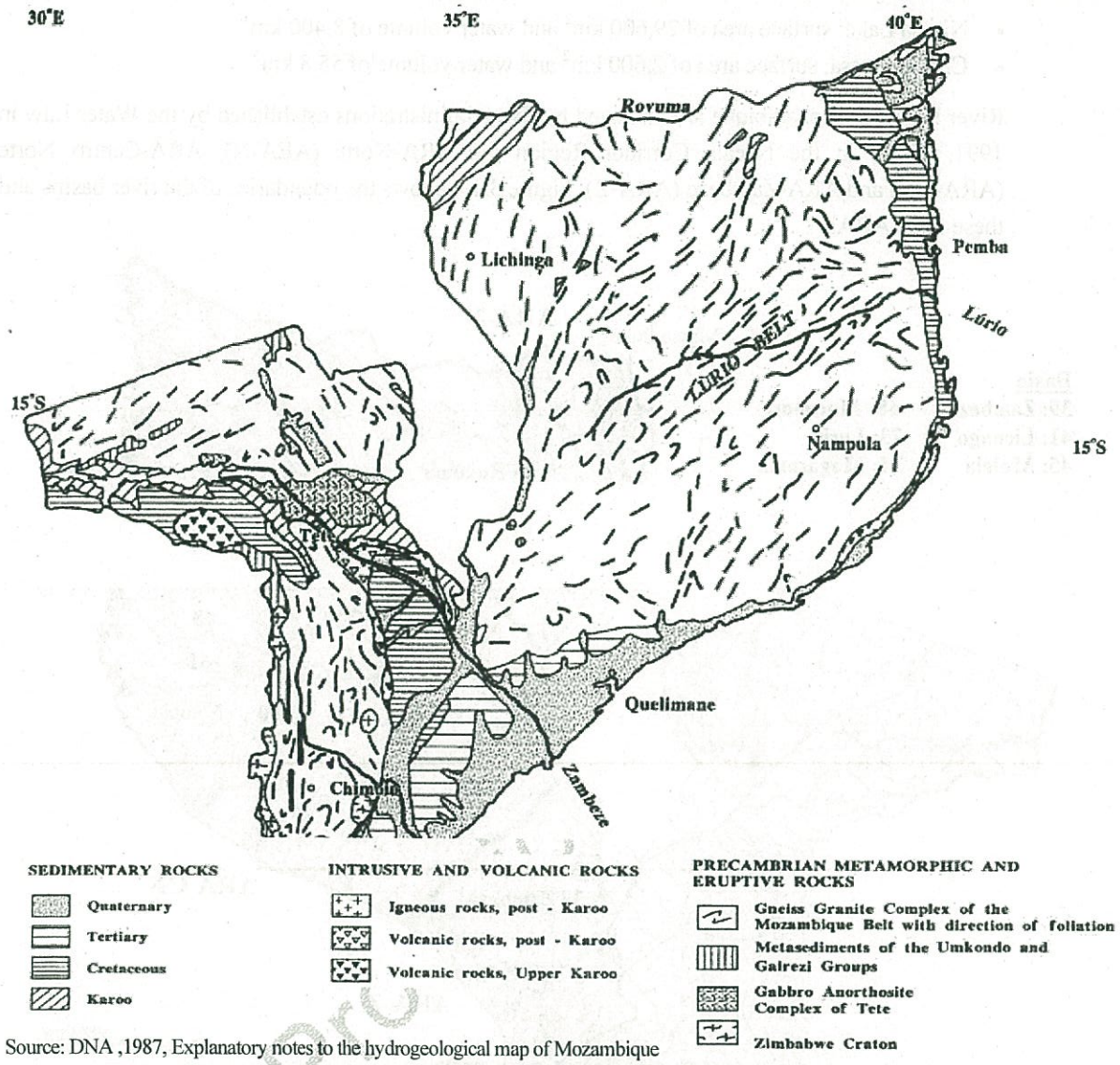
The Nacala Corridor Region is generally low-lying in the coastal areas of Cabo Delgado and Nampula Provinces. Highlands ranging from 1,000 m and above are found inland in the west of Niassa, and in the northern parts of Zambézia and Tete Provinces as shown in Figure 3.1.2. The highest altitudes in the provinces are 1,219 metres in Cabo Delgado, 1,848 metres in Niassa, 1,801 metres in Nampula, 2,419 metres in Zambézia and 2,095 metres in Tete.



Source: JICA Study Team

Figure 3.1.2 Altitude of the Nacala Corridor Region

The Nacala Corridor Region is almost completely covered by the Gneiss Granite Complex of the Pre-Cambrian Period, Proterozoic Era as shown in Figure 3.1.3. The younger sedimentary rocks and sediments of the Quaternary and Tertiary Periods, Cenozoic Era are widely distributed in the downstream part of the Zambezi River and along the seacoast that has become a good intergranular aquifer in the Nacala Corridor Region.



Source: DNA ,1987, Explanatory notes to the hydrogeological map of Mozambique

Figure 3.1.3 Schematic Geological Map in and around the Nacala Corridor Region

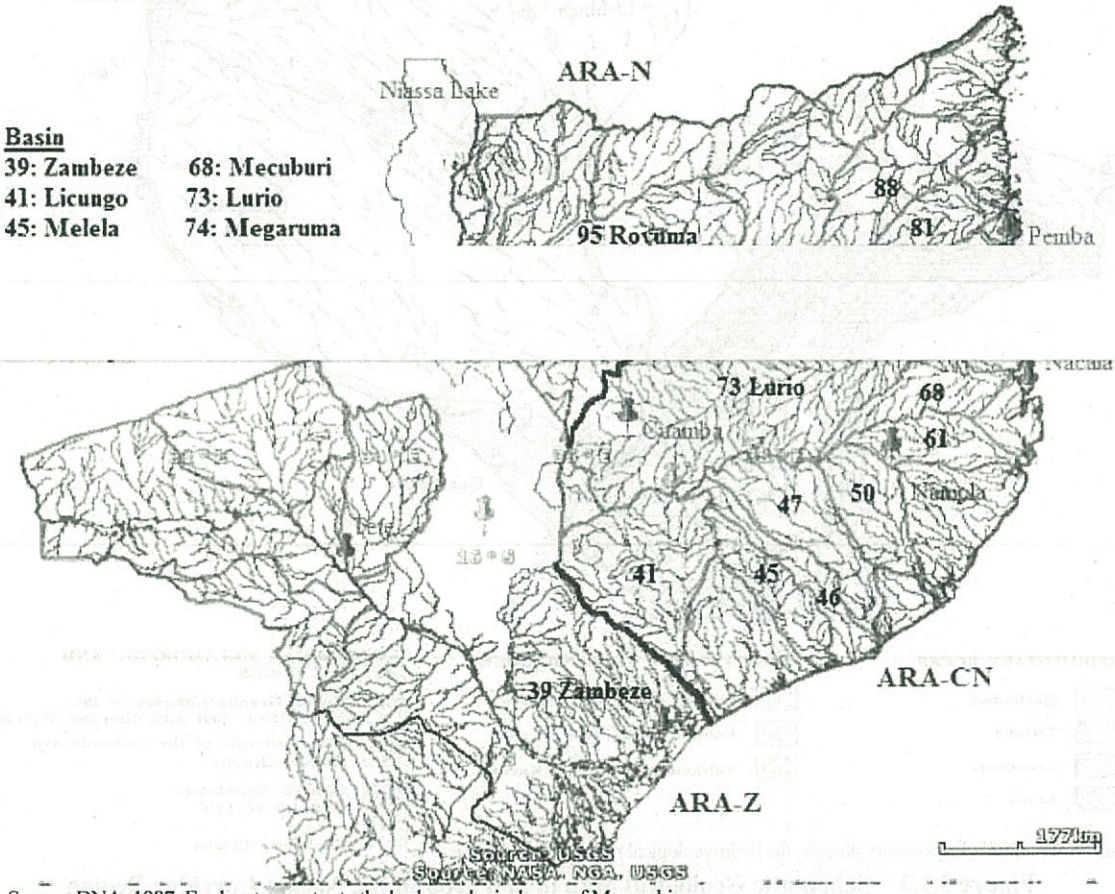
Limited data on meteorology of the Nacala Corridor Region indicates that mean annual precipitation ranges from 900 to 1,100 mm in the Rovuma River basin, whereas precipitation ranges from 1,030 mm in the Lúrio River basin to 1,400 mm in the Licungo River basin. The amount of precipitation of Luia sub-basin, which is located in the upper part of the Zambeze basin, is less than the other basins with an average of 615 to 753 mm per year excluding the yearly maximum of 1,110 mm recorded in 2007.

The following major rivers and lakes of Mozambique are located in the Nacala Corridor Region.

- Zambezi River: catchment area of 1,390,000 km^2 and average runoff of 107,979 million m^3 per year or 3,424 m^3 per second
- Rovuma River: catchment area of 155,500 km^2 and average runoff of 14,980 million m^3 per year or 475 m^3 per second
- Lúrio River: catchment area of 61,423 km^2 and average runoff of 8,722 million m^3 per year or 277 m^3 per second

- Niassa Lake: surface area of 29,600 km^2 and water volume of 8,400 km^3
- Cahora Bassa: surface area of 2,600 km^2 and water volume of 55.8 km^3

River basins in Mozambique are managed by five administrations established by the Water Law in 1991. Those in the Nacala Corridor Region are ARA-Norte (AEA-N), ARA-Centro Norte (ARA-CN) and ARA-Zambeze (ARA-Z). Figure 3.1.4 shows the boundaries of the river basins and these three ARAs.



Source: DNA ,1987, Explanatory notes to the hydrogeological map of Mozambique

Figure 3.1.4 ARA Management Areas and Main Basins in the Nacala Corridor Region

3.2 Socio-Economy of the Nacala Corridor Region

3.2.1 Population

(1) Past Trend of Population Growth

According to the result of the Population and Housing Census conducted in 2007, the total population in Mozambique amounted to 20,632 thousand. On the other hand, the population in the Nacala Corridor Region amounted to 10,548 thousand. The share of population in the Nacala Corridor Region accounted 51% in the national population in 2007.

Among the five provinces related to the Nacala Corridor Region, the population of Nampula Province is the largest at 4,085 thousand, followed by Zambézia Province, Tete Province, Cabo Delgado Province, and Niassa Province. In terms of annual growth rate of population, Niassa Province marked the highest at 4.84 %, followed by Tete Province, Nampula Province, Zambézia Province, and Cabo Delgado Province (See in Table 3.2.1).

Table 3.2.1 Population and Growth Rate by Province in Mozambique

	Population		Annual Growth Rate (%)
	1997	2007	1997-2007
Niassa Province	808,572	1,213,398	4.14
Cabo Delgado Province	1,380,202	1,634,162	1.70
Nampula Province	3,063,456	4,084,656	2.92
Zambézia Province	3,096,400	3,890,453	2.31
Only 7 districts in Zambézia Province	1,360,831	1,808,220	2.88
Tete Province	1,226,008	1,807,485	3.96
Manica Province	1,039,463	1,438,386	3.30
Sofala Province	1,368,671	1,685,663	2.11
Inhambane Province	1,157,182	1,304,820	1.21
Gaza Province	1,116,903	1,236,284	1.02
Maputo Province	830,908	1,225,489	3.96
Maputo City	987,943	1,111,638	1.19
Sub Total (5 Provinces)	9,574,638	12,630,154	2.81
Sub Total (Nacala Corridor Region)	7,839,069	10,547,921	3.01
Sub Total of Other Area	8,236,639	10,084,513	2.04
Mozambique	16,075,708	20,632,434	2.53

Source: INE, Population and Housing Census, 1997 and 2007

(2) Urban Population in Five Provinces

The urbanization ratio in the five provinces was 21% as opposed to 30% in Mozambique in 2007. It ranged between 14% in of Zambézia Province to 29% in Nampula Province.

The urbanization ratios in Zambézia and Tete were quite low compared with other provinces. Provinces in the northern part of Mozambique is rather less urbanized than other provinces (See Table 3.2.2).

Table 3.2.2 Urban and Rural Population by Province in Mozambique, 2007

Unit: Persons / Unit: %

	Urban	Rural	Total	Urban	Rural	Total
Niassa Province	277,838	935,560	1,213,398	23%	77%	100%
Cabo Delgado Province	340,707	1,293,455	1,634,162	21%	79%	100%
Nampula Province	1,167,813	2,916,843	4,084,656	29%	71%	100%
Zambézia Province	679,073	3,211,380	3,890,453	17%	83%	100%
Tete Province	247,178	1,560,307	1,807,485	14%	86%	100%
Manica Province	363,844	1,074,542	1,438,386	25%	75%	100%
Sofala Province	645,413	1,040,250	1,685,663	38%	62%	100%
Inhambane Province	289,458	1,015,362	1,304,820	22%	78%	100%
Gaza Province	314,471	921,813	1,236,284	25%	75%	100%
Maputo Province	832,188	393,301	1,225,489	68%	32%	101%
Maputo City	1,111,638	0	1,111,638	100%	0%	100%
Sub Total (5 Provinces)	2,712,609	9,917,545	12,630,154	21%	79%	100%
Sub Total of Other Province	3,557,012	4,445,268	8,002,280	44%	56%	100%

3.2.2 Past Trend of Economic Growth

(1) GRDP

The total GRDP in the five provinces amounted to MT 74,248 million in 2011 (2003 constant prices), which accounted for 38% of the GDP in Mozambique. The proportions of the GRDP of each province in Mozambique were 14.8% for Nampula, followed by Zambézia (9.4%), Tete (5.7%), Cabo Delgado (4.7%) and Niassa (3.0%).

The economic growth rates for three periods (1997-2000, 2000-2007, 2007-2011) are shown in Table 3.2.3. As seen in the table, most province have marked steady high growth rates at 7-8% since 2000, which is the same trend as Mozambique as a whole.

Table 3.2.3 GRDP and Growth Rate of GRDP by Province in Mozambique

	GRDP (Million MT, 2003 Constant Prices)				Annual Growth Rate (%)		
	1997	2000	2007	2011	1997-2000	2000-2007	2007-2011
Niassa Province	2368.3	2651.9	4587.0	5930.7	3.8	8.1	6.6
Cabo Delgado Province	3518.2	4038.1	6904.0	9198.6	4.7	8.0	7.4
Nampula Province	10634.7	13118.0	22192.3	29321.3	7.2	7.8	7.2
Zambézia Province	7250.0	8102.3	13977.4	18505.8	3.8	8.1	7.3
Tete Province	3552.6	5730.6	9218.0	11291.3	17.3	7.0	5.2
Manica Province	2826.8	3285.0	5538.4	7490.5	5.1	7.7	7.8
Sofala Province	7456.5	9077.9	15852.5	20875.1	6.8	8.3	7.1
Inhambane Province	4607.7	5290.5	11735.4	15223.0	4.7	12.1	6.7
Gaza Province	3684.4	3745.4	7039.1	9420.3	0.5	9.4	7.6
Maputo Province	10283.5	13046.5	26182.7	33020.4	8.3	10.5	6.0
Maputo City	12890.9	16903.0	28073.0	37247.5	9.5	7.5	7.3
Sub Total (5 Provinces)	27323.8	33640.9	56878.7	74247.6	7.2	7.8	6.9
Other Provinces	41749.9	51348.4	94421.2	123276.8	7.1	9.1	6.9
Mozambique	69073.7	84989.3	151299.9	197524.4	7.2	8.6	6.9

Source: INE, 1997, 2000, 2007 and 2011

Table 3.2.4 Proportion by Province in Mozambique's GRDP in Mozambique (1997-2011)

	Proportion in Mozambique's GRDP (%)			
	1997	2000	2007	2011
Niassa Province	3.4%	3.1%	3.0%	3.0%
Cabo Delgado Province	5.1%	4.8%	4.6%	4.7%
Nampula Province	15.4%	15.4%	14.7%	14.8%
Zambézia Province	10.5%	9.5%	9.2%	9.4%
Tete Province	5.1%	6.7%	6.1%	5.7%
Manica Province	4.1%	3.9%	3.7%	3.8%
Sofala Province	10.8%	10.7%	10.5%	10.6%
Inhambane Province	6.7%	6.2%	7.8%	7.7%
Gaza Province	5.3%	4.4%	4.7%	4.8%
Maputo Province	14.9%	15.4%	17.3%	16.7%
Maputo City	18.7%	19.9%	18.6%	18.9%
Sub Total (5 Provinces)	39.6%	39.6%	37.6%	37.6%
Other Provinces	60.4%	60.4%	62.4%	62.4%
Mozambique	100.0%	100.0%	100.0%	100.0%

Source: INE, 1997, 2000, 2007 and 2011

(2) GDP per Capita

As shown in Table 3.2.5, the GRDP per capita in the five provinces was 4,503 MT in 2007, which is far below the national average of about MT 7,333. It indicates that the economic activity per person in the northern part of Mozambique is rather small than other southern provinces.

Table 3.2.5 GRDP per Capita by Province

	GRDP per Capita (MT at 2003 Constant Prices)		Proportion of GRDP to the Whole Country		Annual Growth Rate (%)
	1997	2007	1997	2007	1997-2007
Niassa Province	2,929	3,780	0.68	0.52	2.6
Cabo Delgado Province	2,549	4,225	0.59	0.58	5.2
Nampula Province	3,471	5,433	0.81	0.74	4.6
Zambézia Province	2,341	3,593	0.54	0.49	4.4
Tete Province	2,898	5,100	0.67	0.70	5.8
Manica Province	2,719	3,850	0.63	0.53	3.5
Sofala Province	5,448	9,404	1.27	1.28	5.6
Inhambane Province	3,982	8,994	0.93	1.23	8.5
Gaza Province	3,299	5,694	0.77	0.78	5.6
Maputo Province	12,376	21,365	2.88	2.91	5.6
Maputo City	13,048	25,254	3.04	3.44	6.8
5 Province	2,854	**4,503**	0.66	0.61	4.7
Other Provinces	6,422	11,799	1.49	1.61	6.3
Mozambique	4,297	**7,333**	1.00	1.00	5.5

Source: JICA Study Team, Based on data from INE, 1997 and 2007

(3) Share of Economic Sector

The five provinces are relatively more specialised in agriculture in terms of value added generation, accounting for 42% of the GRDP. Nampula and Tete, however, are different from the other three provinces in that Nampula's economic structure is characterised by its lower proportion of agriculture (40%). Tete is similar with agriculture accounting only for 20%, while electricity and water account for 37%. This situation for Tete stems from the power supplied to all of Mozambique

by Cahora Bassa. This structure of economic sector have not been changed a lot for a decade in the five provinces (See Table 3.2.6) .

Table 3.2.6 Share of GRDP by Economic Sector by Province in 2000 and 2011

	2000				2011			
	Agriculture	Industry	Service	Total	Agriculture	Industry	Service	Total
Niassa Province	47.6%	10.2%	42.2%	100.0%	49.5%	7.2%	43.4%	100.0%
Cabo Delgado Province	49.5%	12.2%	38.3%	100.0%	51.2%	12.5%	36.3%	100.0%
Nampula Province	38.7%	15.4%	45.9%	100.0%	39.9%	17.0%	43.1%	100.0%
Zambézia Province	49.8%	11.4%	38.8%	100.0%	50.8%	12.3%	36.9%	100.0%
Tete Province	25.9%	40.2%	33.9%	100.0%	20.0%	43.3%	36.7%	100.0%
Manica Province	36.1%	22.0%	41.9%	100.0%	37.0%	21.7%	41.3%	100.0%
Sofala Province	22.8%	19.5%	57.7%	100.0%	22.7%	20.0%	57.3%	100.0%
Maputo Province	15.2%	43.9%	40.9%	100.0%	17.5%	47.5%	35.0%	100.0%
Maputo City	2.5%	15.8%	81.7%	100.0%	2.7%	11.7%	85.6%	100.0%
5 Provinces	41.1%	18.0%	40.9%	100.0%	41.7%	18.5%	39.8%	100.0%
Other Provinces	19.1%	23.8%	57.1%	100.0%	19.3%	26.9%	53.8%	100.0%
Mozambique	27.9%	21.5%	50.7%	100.0%	27.7%	23.7%	48.6%	100.0%

Source: INE, 2000 and 2011

3.2.3 Labour Force

(1) Economically Active Population (EAP)

The economically active population of the five provinces was 4,586 thousand in 2007. The agriculture sector employed the highest portion at 85% with a small variation among provinces, between 82.9% in Nampula Province and 87.5% in Zambézia Province, while that for all of Mozambique was 75.2% (See Table 3.2.7).

Table 3.2.7 Economically Active Population (EAP) by Economic Sector by Province in 2007

	Agricul -ture	Industry	Service	Total	Agricul -ture	Industry	Service	Total
Niassa Province	337,235	15,288	53,080	405,603	83.1%	3.8%	13.1%	100.0%
Cabo Delgado Province	584,853	22,489	62,908	670,250	87.3%	3.4%	9.4%	100.0%
Nampula Province	1,219,450	65,872	185,191	1,470,513	82.9%	4.5%	12.6%	100.0%
Zambézia Province	1,218,809	54,721	120,106	1,393,636	87.5%	3.9%	8.6%	100.0%
Tete Province	546,888	26,468	72,829	646,185	84.6%	4.1%	11.3%	100.0%
5 Provinces	3,907,235	184,838	494,114	**4,586,187**	**85.2%**	4.0%	10.8%	100.0%
Other Provinces	1,636,693	304,460	843,619	2,784,772	58.8%	10.9%	30.3%	100.0%
Mozambique	5,543,928	489,298	1,337,733	7,370,959	**75.2%**	6.6%	18.1%	100.0%

Source: INE, 2000 and 2011

(2) Unemployment Ratio

The unemployment ratios by province in 2004/05 are shown in Table 3.2.8. The ratios in all the provinces related to the Nacala Corridor Region except for Niassa Province are below the national

average of 18.7%. The ratio of Niassa Province (31.7%) is significantly high compared to the other provinces.

Table 3.2.8 Unemployment Ratio by Provinces in 2004/5

	Unemployment Ratio(%)
Niassa Province	**31.7**
Cabo Delgado Province	10.9
Nampula Province	15.7
Zambézia Province	11.2
Tete Province	16.5
5 Provinces	17.2
Sub Total of Other Provinces	20.2
Mozambique	**18.7**

Source: INE , 2006, Integrated Survey on the Labour Force (IFTRAB) 2004/05

3.2.4 Poverty and Inequality

(1) Poverty Ratio

The poverty rate decreased significantly between 1997 and 2009 except in Zambézia: 71% to 32% in Niassa, 57% to 37% in Cabo Delgado, 69% to 55% in Nampula and 82% to 42% in Tete. That in Zambézia rose from 68% in 1997 to 71% in 2009.

Table 3.2.9 Poverty Ratio by Province in Mozambique

	Poverty Ratio (%)			Gap of Poverty Ratio		
	1997	2003	2009	1997-2003	2003-2009	1997-2009
Niassa Province	70.6	52.1	31.9	-18.5	-20.2	-38.7
Cabo Delgado Province	57.4	63.2	37.4	+5.8	-25.8	-20.0
Nampula Province	68.9	52.6	54.7	-16.3	**+2.1**	-14.2
Zambézia Province	68.1	44.6	**70.5**	-23.5	**+25.9**	**+2.4**
Tete Province	82.3	59.8	42.0	-22.5	-17.8	-40.3
Manica Province	62.6	43.6	55.1	-19.0	**+11.5**	-7.5
Sofala Province	87.9	36.1	58.0	-51.8	**+21.9**	-29.9
Inhambane Province	82.6	80.7	57.9	-1.9	-22.8	-24.7
Gaza Province	64.6	60.1	62.5	-4.5	**+2.4**	-2.1
Maputo Province	65.6	69.3	67.4	3.7	-1.9	**+1.8**
Maputo City	47.8	53.6	36.2	5.8	-17.4	-11.6
5 Provinces	69.5	54.5	**47.3**	-15.0	-7.2	-22.2
Other Provinces	69.3	53.7	**62.1**	-15.6	**+8.4**	-7.2
Mozambique	69.4	54.1	54.7	-15.3	+0.6	-14.7

Source: INE, 1997, 2003 and 2009

(2) Inequality

The Gini[1] coefficient, an indicator for measuring the distribution of income, showed mixed trends of expanding and narrowing disparity. In the Provinces of Niassa, Nampula and Zambézia, the Gini coefficients rose, indicating widening income disparity, while those in Cabo Delgado and Tete declined, indicating narrowing income disparity.

[1] Gini index of 0 represents perfect equality, while an index of 1 implies perfect inequality

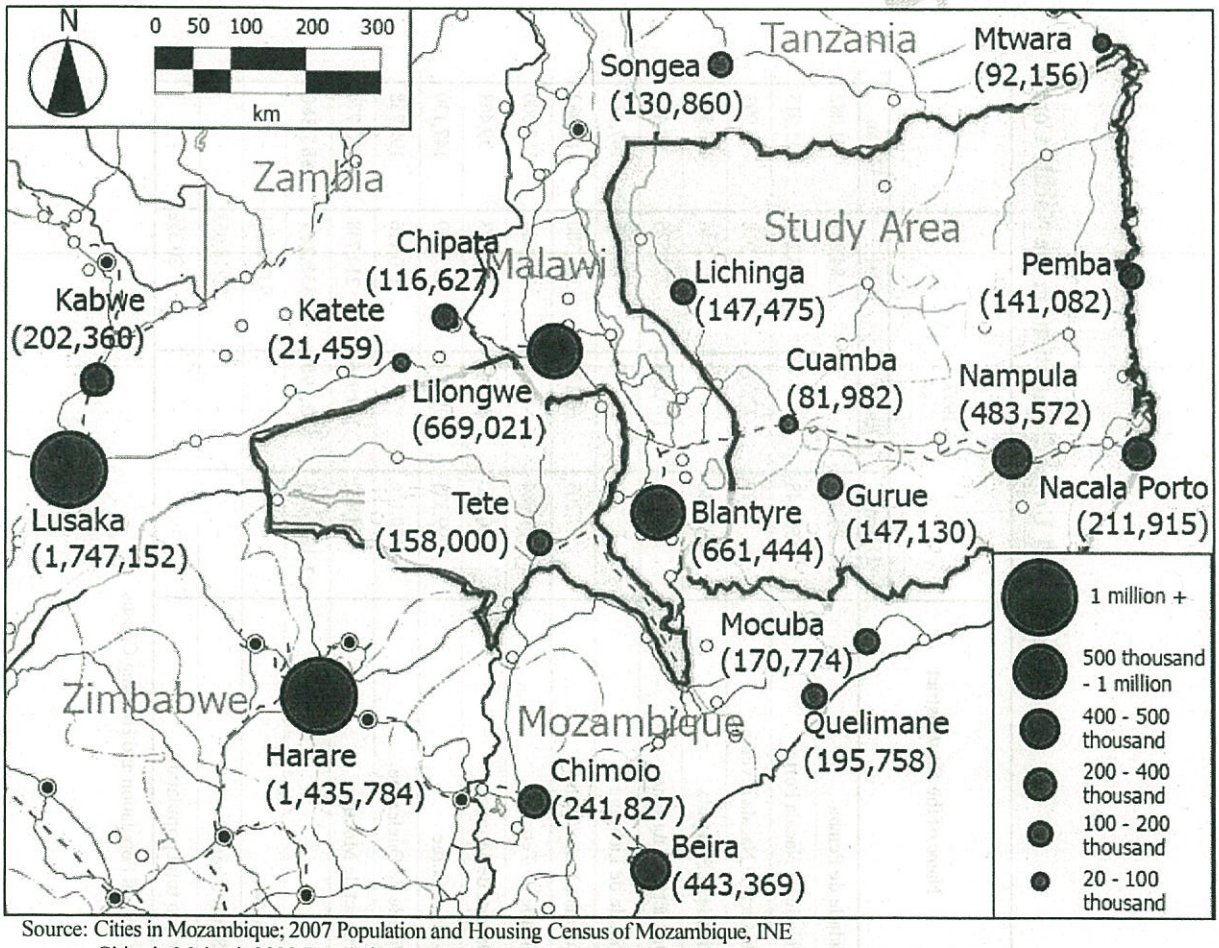
Table 3.2.10 Gini Coefficient by Province in Mozambique

	2003	2008	Gap b/w 2003-2008
Niassa Province	0.357	0.427	**+0.070**
Cabo Delgado Province	0.445	0.347	-0.098
Nampula Province	0.361	0.419	**+0.058**
Zambézia Province	0.351	0.365	**+0.014**
Tete Province	0.399	0.323	-0.076
Manica Province	0.400	0.345	-0.055
Sofala Province	0.427	0.456	**+0.029**
Inhambane Province	0.443	0.383	-0.060
Gaza Province	0.406	0.427	**+0.021**
Maputo Province	0.433	0.387	-0.046
Maputo City	0.524	0.512	-0.012
5 Provinces	0.383	0.376	-0.006
Other Provinces	0.439	0.418	-0.021

3.3 Urban Centres in the Nacala Corridor Region

There are a number of large towns with a population of more than 500 thousand in the inland neighbouring countries adjacent to the Nacala Corridor Region. Figure 3.3.1 shows the populations of Blantyre at 661 thousand, Lilongwe at 669 thousand, Lusaka at 1.7 million and Harare at 1.4 million. Chipata of Zambia, located close to the border with Malawi, has a population of 452 thousand.

The largest city in the Nacala Corridor Region is Nampula with a population 484 thousand in 2007, followed by Nacala Porto at 212 thousand and Tete City with 158 thousand. As shown in Table 3.3.1, the total urban population in the five provinces increased from 1.2 million in 1997 to 1.9 million in 2007, a growth rate of 4.8% per year on average. Since the growth rate of the rural population in the same period was 3.2 % per year, urbanization rate rose from 20.3% in 1997 to 21.6% in 2007.



Source: Cities in Mozambique; 2007 Population and Housing Census of Mozambique, INE
Cities in Malawi; 2008 Population and Housing Census of Malawi, NSO
Cities in Zambia; 2010 Population and Housing Census of Zambia, Central Statistical Office
Cities in Zimbabwe; Zimbabwe National Population Census 2012, Zimbabwe National Statistical Office
Cities in Tanzania; 2012 Population and Housing Census, National Bureau of Statistics

Figure 3.3.1 Major Urban Centres in the Nacala Corridor Region and Neighbouring Countries

Table 3.3.1 Urban Populations in the Nacala Corrid

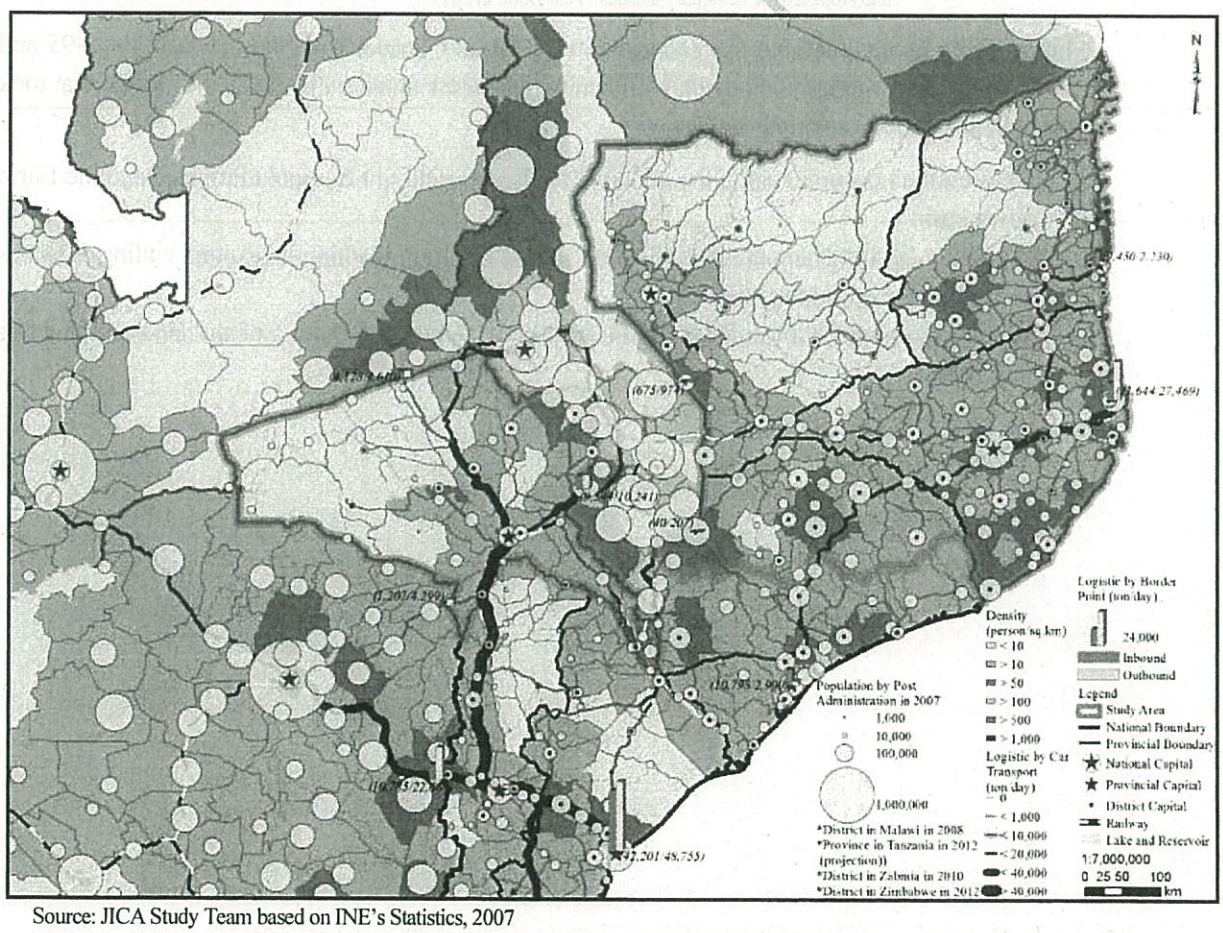
Province	Name of the City/District	1997				Annual Average Growth Rate of Urban Population (%/year)			
		Urban	Rural	Total	Urban	Total	Urban	Rural	Total
Cabo delgado	Cidade de Pemba	84,897	0	84,897	141,082	141,082	5.2	-	5.2
Nampula	Cidade de Nacala Porto	158,248	0	158,248	211,915	211,915	3.0	-	3.0
	District de Nacala a Velha	4,899	73,019	77,918	15,993	90,991	12.6	0.3	1.6
	Cidade deNampula	303,346	0	303,346	483,572	483,572	4.8	-	4.8
	District de Angoche	58,263	170,263	228,526	92,411	283,520	4.7	1.2	2.2
Niassa	Cidade de Lichinga	85,758	0	85,758	147,475	147,475	5.6	-	5.6
	Cuamba Municipality	57,205	69,175	126,380	81,982	191,642	3.7	4.7	4.3
Tete	Cidade de Tete	101,984	0	101,984	158,000	158,000	4.5	-	4.5
	District de Moatize	26,560	82,543	109,103	39,468	217,608	4.0	8.0	7.1
Zambizia	District Gurue	99,335	97,844	197,179	147,130	301,034	4.0	4.6	4.3
	Cidade de Quelimane	150,116	0	150,116	195,758	195,758	2.7	-	2.7
	District de Mocuba	54,802	159,946	214,748	170,774	303,973	12.0	-1.8	3.5
Total		**1,185,413**	**652,790**	**1,838,203**	**1,885,560**	**2,726,570**	**4.8**	**2.6**	**4.0**
Total population of the Study Area		-	-	9,056,261	-	12,630,154	-	-	3.4
Total rural population of the Study Area		-	-	7,218,058	-	9,903,584	-	-	3.2
Proportion of urban population to total population		-	-	20.3%	-	21.6%	-	-	-

Source: INE,1997 and 2007, General Population and Housing Census

The highest growth rate of urban population took place in Nacala-a-Velha District at 12.6 % per year between 1997 and 2007. This was followed by the growth in Mocuba District in Zambézia Province at 12% per year. The growth of urban population in other areas was milder with a range between 2.7% and 5.6% per year.

Figure 3.2.2 presents population densities by district and size of population of administrative posts in the Nacala Corridor Region and neighbouring countries. It shows relatively higher population densities in most areas of Nampula Province and Zambézia Province, the areas along the coast and those bordering Nampula Province in Cabo Delgado Province and the areas bordering Malawi in Tete Province and Niassa Province. Most of the areas in Niassa Province, the north-western part of Cabo Delgado Province and the western part of Tete Province have lower population densities of less than 10 persons per square kilometre. Population densities in central and southern Malawi are high at more than 100 persons per square kilometre.

Higher concentrations of population in administrative posts are observed in the southern half of Nampula Province and along the north-south axis in the middle of Zambézia Province. There are some concentrations in the southern part and northern part of Cabo Delgado Province. Concentration of population is limited to capital cities and nearby administrative posts in Niassa Province and Tete Province.



Source: JICA Study Team based on INE's Statistics, 2007

Figure 3.3.2 Population Density and Population of Administrative Posts in the Nacala Corridor Region and Neighbouring Countries

3.4 Spatial Pattern of the Nacala Corridor Region

3.4.1 Land Use

The distribution of land uses in the Nacala Corridor Region is classified as shown Table 3.4.1 and shown in Figure 3.4.1. Land covered with forests, woody formations and prairies accounts for 79%. This estimate is subject to elaboration based on the results of the "Zoneamento Agro-Ecológico Nacional (ZAE)" project that is currently underway by Mozambique's Ministry of Agriculture,.

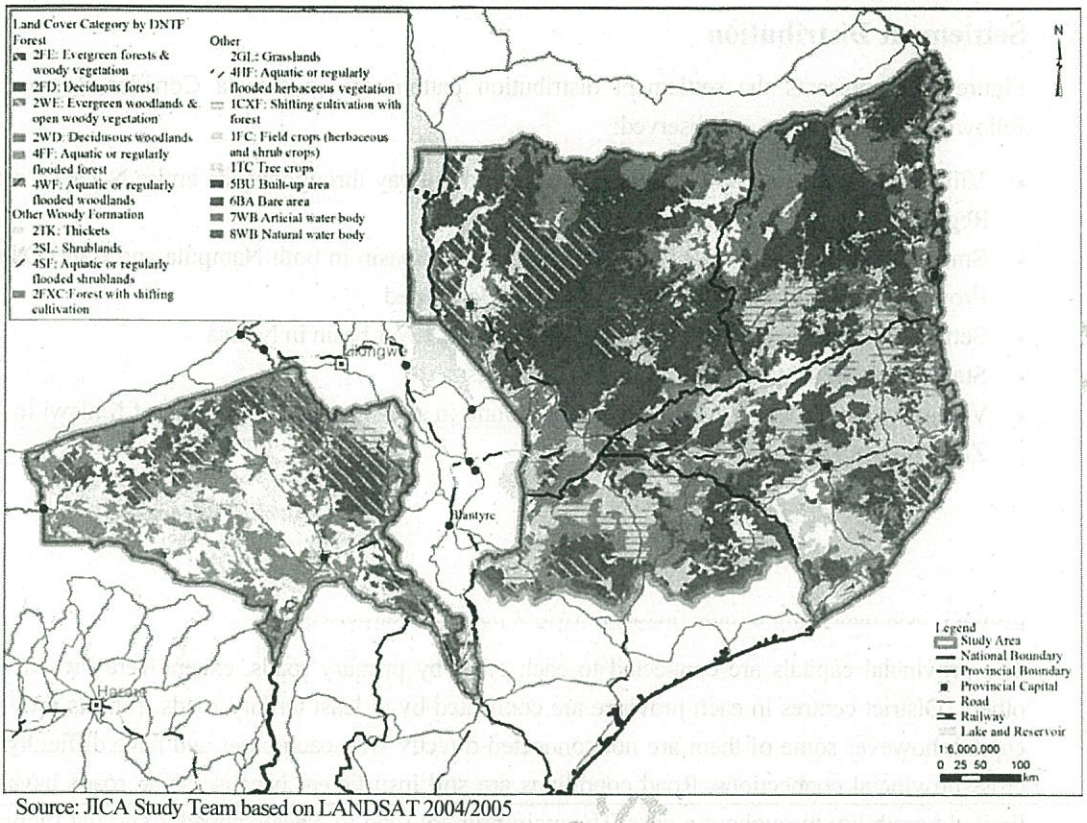
Table 3.4.1 Land Use Pattern in the Nacala Corridor Region

Classification	Area in km^2	%
Forest	231,801	55%
Other Woody Formations	63,369	15%
Prairies	36,943	9%
Total	424,690	100%

Source: JICA Study Team based on AIFM Land Cover GIS Data in 2007, and Adjusted the National Statistical Year Book in 2011

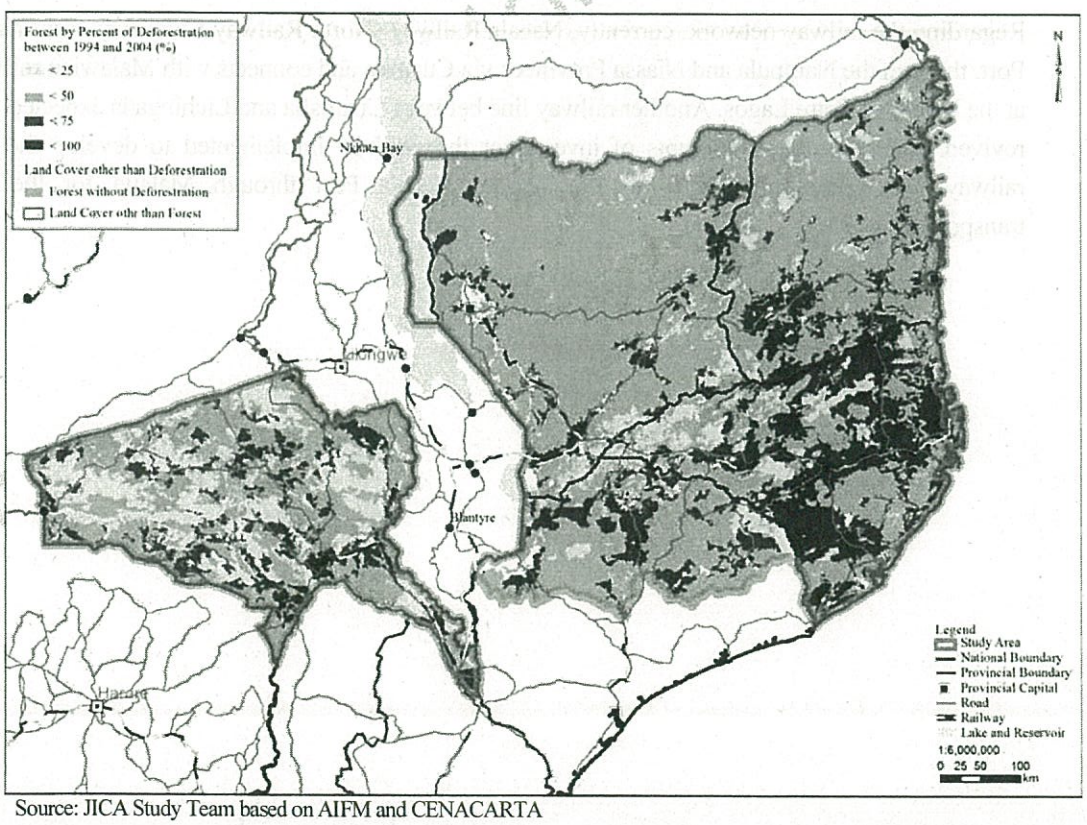
Figure 3.4.2 presents the land use changes in the Nacala Corridor Region between 1994–95 and 2004–2005. These figures, although not reflecting the latest situation, illustrate the change that took place in this period as summarised below:

- Deforestation occurred along the principal roads, especially in Nampula Province and the Lúrio River basin
- While the land in Nampula was converted to tree or crop planting areas, tree cutting for sales seems to have occurred in Tete
- Despite the progress of deforestation in the Lúrio River basin, most of the land remained as forest area



Source: JICA Study Team based on LANDSAT 2004/2005

Figure 3.4.1 Present Land Use in the Nacala Corridor Region



Source: JICA Study Team based on AIFM and CENACARTA

Figure 3.4.2 Land Use Changes in the Nacala Corridor Region between 1994/95 and 2004/05

3.4.2 Settlement Distribution

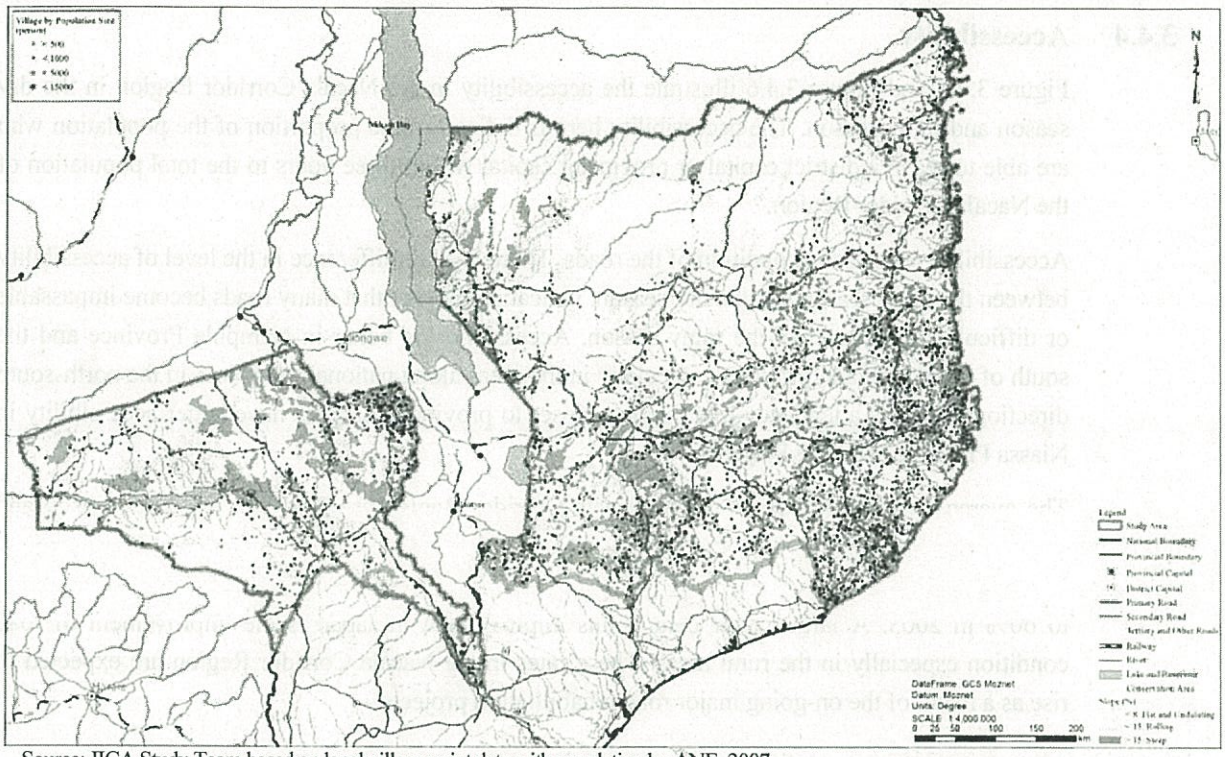
Figure 3.4.3 presents the settlement distribution pattern of the Nacala Corridor Region. The following characteristics are observed:

- Villages are located mainly along the roads and railway throughout the entire Nacala Corridor Region
- Small villages are distributed along the Lúrio River basin in both Nampula and Cabo Delgado Provinces, even though the roads are not well developed
- Settlements have not developed along the Lugenda River basin in Niassa
- Steep lands prevent the establishment of villages
- Villages with remarkably high density are found in stretches near the border of Malawi in Tete, Zambézia and Niassa Provinces

primary, secondary and tertiary status, railways, ports and airports.

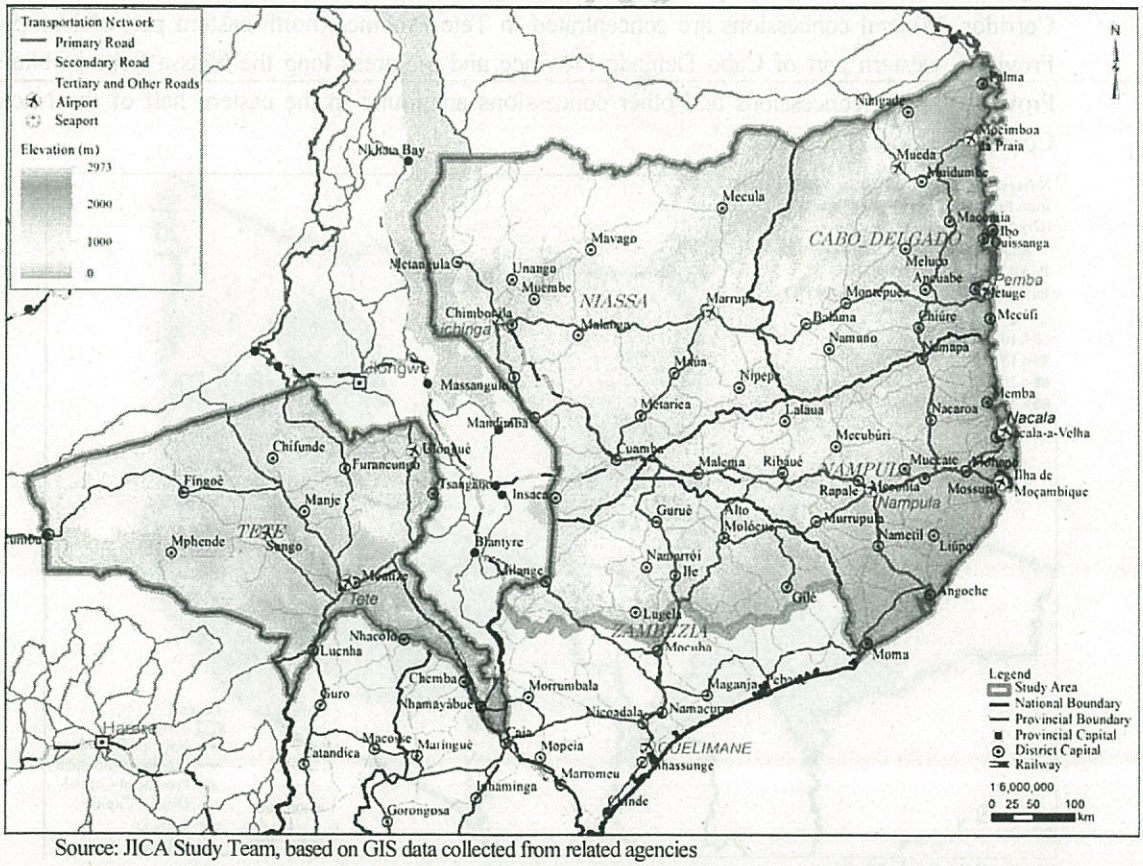
The provincial capitals are connected to each other by primary roads, except Tete Province and others. District centres in each province are connected by at least tertiary roads from its provincial capital, however some of them are not connected directly with each other and have difficulty with cross-provincial connections. Road conditions are still insufficient because some roads have only limited possibility throughout a year. The main primary road in Nacala corridor and the Lichinga - Montepuéz road are expected to be rehabilitated as all-weather roads in the near future.

Regarding the railway network, currently, Nacala Railway (North Railway Line) runs from Nacala Port, through the Nampula and Niassa Provinces via Cuamba and connects with Malawian railways at the border of Entre Lagos. Another railway line between Cuamaba and Lichinga is expected to be revived. There are large amounts of investment that will be implemented to develop the new railway line connected from Tete Province to Nacala Port through Malawi for the coal transportation.



Source: JICA Study Team based on local village point data with population by ANE, 2007

Figure 3.4.3 Distribution of Settlements in the Nacala Corridor Region



Source: JICA Study Team, based on GIS data collected from related agencies

Figure 3.4.4 Transportation Network in the Nacala Corridor Region

3.4.4 Accessibility

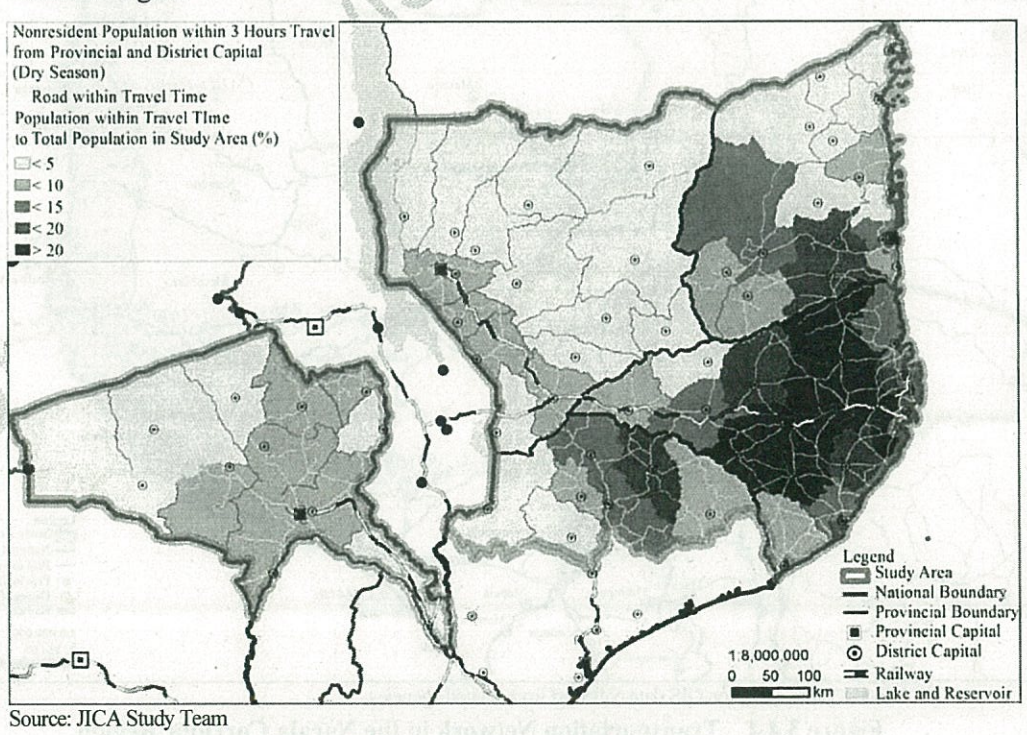
Figure 3.4.5 and Figure 3.4.6 illustrate the accessibility in the Nacala Corridor Region in the dry season and rainy season. The accessibility here is defined as the proportion of the population who are able to reach a district capital or provincial capital within three hours to the total population of the Nacala Corridor Region.

Accessibility reflects the condition of the roads. There is a big difference in the level of accessibility between the rainy season and the dry season, indicating the fact that many roads become impassable or difficult to pass over in the rainy season. Accessibility is better in Nampula Province and the south of Cabo Delgado Province, especially in the areas along national road No.1 in the north-south direction. There is a tendency that districts closer to provincial capitals have better accessibility in Niassa Province and Tete Province.

The average accessibility rates in the Nacala Corridor Region are 7.8 % in the rainy season and to 60% in 2005. A large factor behind this improvement in Japan is the improvement of road condition especially in the rural areas. These rates in the Nacala Corridor Region are expected to rise as a result of the on-going major road rehabilitation projects.

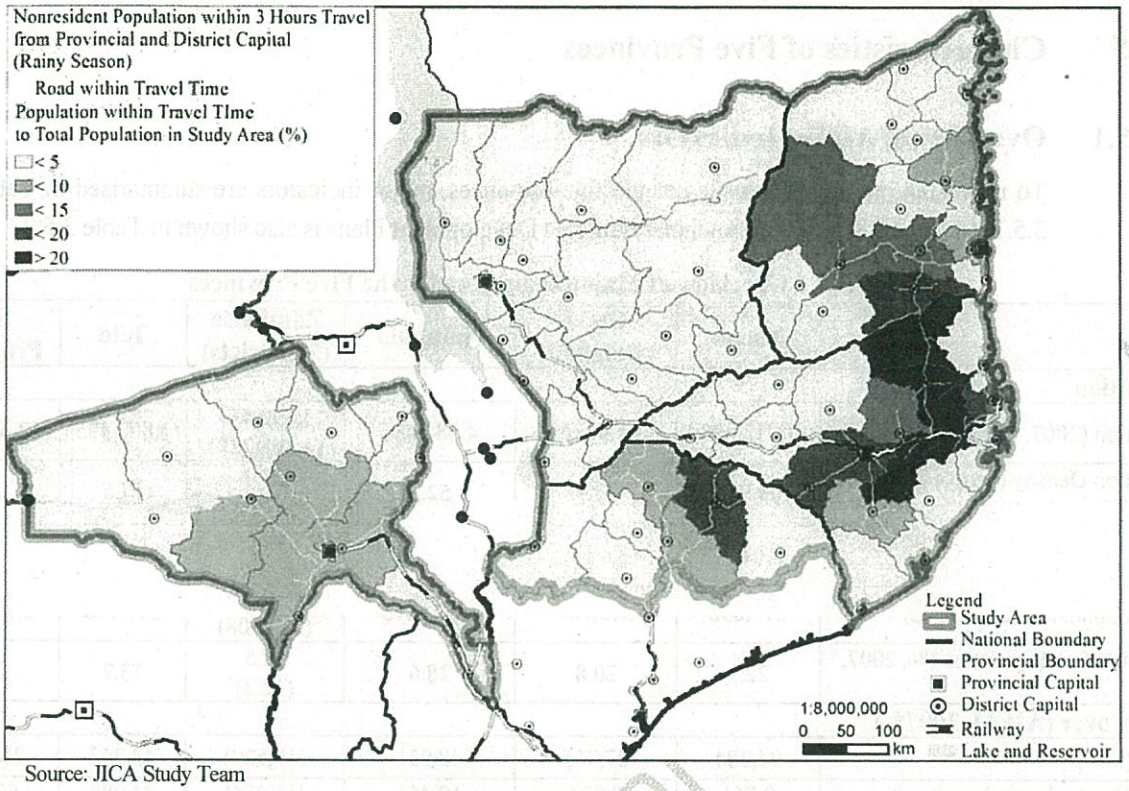
3.4.5 Mineral and Forest Concession Areas

Figure 3.4.7 presents a geographical distribution of mineral and forestry concessions in the Nacala Corridor. Mineral concessions are concentrated in Tete Province, north eastern part of Nampula Province, western part of Cabo Delgado Province and the areas long the Niassa Lake in Niassa Province. Forest concessions and other concessions are found in the eastern half of the Nacala Corridor Region.



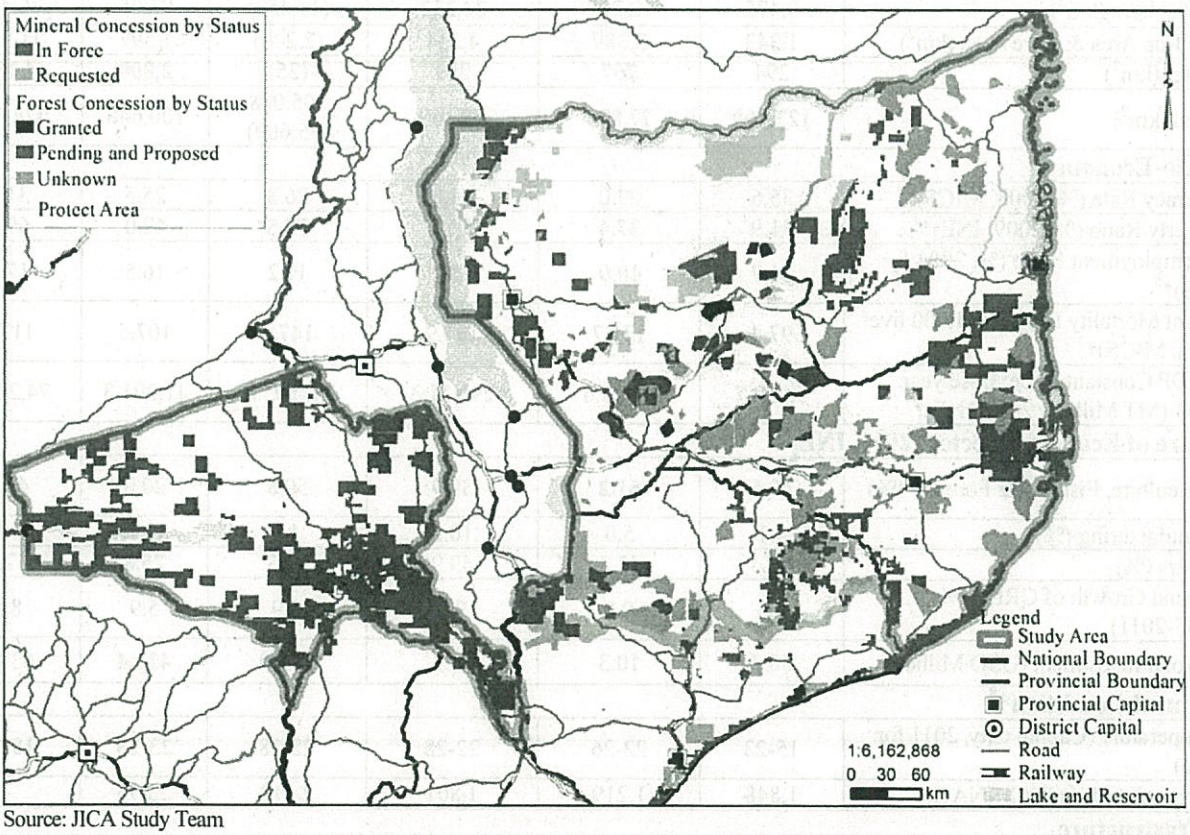
Source: JICA Study Team

Figure 3.4.5 Accessibility in Dry Season



Source: JICA Study Team

Figure 3.4.6 Accessibility in Rainy Season



Source: JICA Study Team

Figure 3.4.7 Mineral and Forest Concessions

3.5 Characteristics of Five Provinces

3.5.1 Overview of Major Indicators

To understand the characteristics of the five provinces, major indicators are summarised in Table 3.5.1, and an outline of the Provincial Strategic Development Plans is also shown in Table 3.5.2.

Table 3.5.1 Overview of Major Indicators for the Five Provinces

	Niassa	Cabo Delgado	Nampula	Zambézia (7 districts)	Tete	Five Provinces
Population						
Population (2007, INE)*[1]	1,213,398	1,634,162	**4,084,656**	3,890,453 (1,808,220)	1,807,485	12,630,154
Population Density (people/km^2,	9.91	58.7	**52.3**	37.0	17.6	29.7
Urban Population (2007, INE)				(220,108)		
Ratio of Urban Population (%, 2007, INE)*[1]	22.9	20.8	**28.6**	17.5 (12.2)	13.7	21.5
Land Cover (AIFM, 2007*[2])						
Forest (km^2)	**94,284**	27,715	48,031	(19,529)	42,242	231,801
Other Woody Formations (km^2)	9,761	8,024	10,451	(11,054)	24,080	63,369
Prairies (km^2)	7,243	4,001	3,565	(1,300)	20,835	36,943
Agriculture (km^2)	9,475	12,235	**34,232**	(11,452)	9,095	76,488
Built-up Area & Bare Area (km^2)	1,343	2,389	**4,334**	(2,240)	1,597	11,903
Water (km^2)	294	767	299	(25)	**2,800**	4,186
Total (km^2)	**122,400**	77,873	78,169	105,008 (45,600)	100,648	424,690
Socio-Economy						
Literacy Rate (%, 2008, MICS)*[3]	35.6	29.0	**40.0**	26.8	25.5	31.4
Poverty Ratio (%, 2009, INE)*[4]	31.9	37.4	54.7	**70.5**	42.0	69.5
Unemployment Ratio (%, 2004/5, INE)*[5]	**31.7**	10.9	15.7	11.2	16.5	17.2
Infant Mortality Rate (per 1,000 live birth, MICS)*[3]	97.4	131.7	104.9	**147.1**	107.5	117.7
GRDP Constant Price: Base year 2003 (MT Million, 2011, INE)*[7]	5,930.7	9,198.6	**29,321.3**	18,505.8	11,291.3	74,247.6
Share of Economic Sector (2011, INE)						
Agriculture, Fishery, & Forestry (%)	49.5	**51.2**	39.9	50.8	20.0	40.3
Manufacturing (%)	4.1	5.0	10.2	4.9	4.2	6.8
Others (%)	46.4	43.8	49.9	44.3	**75.8**	52.9
Annual Growth of GRDP (%, 2005-2011)	8.6	**9.3**	9.2	8.9	5.9	8.5
Total Investment (USD Million)	50.3	10.3	19.3	128.9	**424.4**	633.2
Natural Condition*[8]						
Temperature (Capital City, 2011 for Tete)	15-23	22-26	22-28	22-28	**23-28**	18-27
Maximum Altitude (MINAG)	1,848	1,219	1,801	**2,419**	2,095	-
Infrastructure						
Primary Road (km) (2011, ANE)*[9]	743	417	**987**	1,031	540	3,718

	Niassa	Cabo Delgado	Nampula	Zambézia (7 districts)	Tete	Five Provinces
Primary Road per Land Area (km/1,000 km^2) (2011, ANE)*[9]	6.07	5.35	12.63	9.82	5.37	8.75
Classroom Student Ratio (2010, %, MINED)*[10]	51.0	50.4	56.7	51.4	51.3	52.2
Total Number of Health Facilities (2003, MISAU)*[11]	123	89	**187**	173	101	673
Agriculture						
Major crops (✔✔✔: >1 million ton,✔✔:> 100 thousand ton ,✔: > 10 thousand ton: 2007, MINAG)*[12]						
Maize	✔✔	✔	✔	✔✔	✔✔	-
Cassava	✔	✔	✔✔✔	✔✔✔	-	-
Rice	-	✔	-	✔	-	-
Haricot Beans	✔	-	-	✔	-	-
Cowpea	-	✔	✔	-	-	-
Sweet Potato	✔	-	-	✔✔	✔✔	-
Cashew Nuts	-	-	✔	✔	-	-
Tobacco	✔	-	-	-	✔	-
Tourism						
International Guest Arrivals (2011, INE)*[12]	*2,380*	**10,192**	3,976	3,206	6,225	25,979
Domestic Guest Arrivals (2011, INE)*[12]	*10,358*	12,273	11,173	**18,824**	14,065	66,693
Major Tourism Resources (✔: Numbers of Potential Area, JICA Study Team)						
Beach*[13]	✔	✔✔✔	✔✔✔	-	-	-
Safari*[13]	✔	✔	-	✔	-	-
Others*[13]	✔	✔	✔	✔	✔✔	-
Urban Development						
Population of Major Cities (2007, INE*[1])	Lichinga: 147,475 Cuamba: 81,982	Pemba: 141,082	Nampula: 483,572 Nacala Porto: 211,915 Nacala Velha: 90,991	Quelimane: 195,758	Tete: 158,000 Moatize: 39,468	

Note: The figures in block are the highest and those in italics are the lowest.
Source:
*1:JICA Study Team based on INE, 2007 , General Population and Housing Census
*2:JICA Study Team calculated by AIFM land cover GIS data in 2007, and adjusted the action statistical year book in 2011
*3:Final Report on the Multiple Indicator Cluster Survey 2008, 2009, INE
*4:Third National Poverty Assessment, 2010, MPD and INE
*5:Integrated Survey on the Labour Force (IFTRAB), 2005-2006, INE
*6:INE's Statistics,2011,
*7:National Meteorology Institute of Mozambique (INAM), http://www.inam.gov.mz/, 2010 for Tete, 2011 for the others.
*8:JICA Study Team based on Road Sector Strategy (RSS) Final Report, 2007-2011, ANE
*9:JICA Study Team based on MINED's (Ministry of Education)Statistics, http://www.mec.gov.mz/STATS/Pages/default.aspx
*10:MISAU (Ministry of Health), 2003, National Plan for Health Human Resource Development
*11:National Agriculture Survey (TIA), 2007,MINAG
*12: Statistical Yearbook 2011, 2012, INE
*13:JICA Study Team

Table 3.5.2 Outline of Provincial Strategic Development Plans for the Five Provinces

Provinces	Target Years	Vision, Mission, Objectives
Niassa	2008-2017	**Vision**: Niassa will have consolidated bases for fighting poverty and promoting accelerated and sustainable development. **Mission**: Accelerate social and economic development on a sustainable basis, integrating the province competitively within the national and regional economy **General Objective**: Accelerate and consolidate the economic, social and cultural development of the province and reduce poverty by 15% by 2017. **Development Pillars**: Social Development, Economic Development, Institutional Development
Cabo Delgado	2010-2014	**Global Objectives**: • The consolidation of national unity, peace and democracy; • The fight against poverty and the promotion of workplace culture; • Good governance, combating corruption and culture of accountability; • The strengthening of the sovereignty and • The strengthening of international cooperation
Nampula	2010-2020	wealth and job creation. **Mission**: Place the Province of Nampula in the higher standards of wealth creation, with its epicentre in the district by maximizing public-private-community partnership **Development Pillars**: Economic Growth, Participatory Governance, Infrastructure and Promotion of the Environment, Social and Human Capital Development
Zambézia	2011-2020	**Vision**: Lay the foundations for sustainable increase in production and productivity, in particular the agrarian, for job creation and equitable distribution of wealth, and for poverty reduction **Mission**: Zambézia as an example in the production and productivity, in particular the agrarian, job creation, equitable distribution of wealth, and fighting poverty **Development Pillars**: Develop Human and Social Capital, Economic Growth and Development, Good Governance/Decentralization/ Fighting Corruption and Promoting a Culture of Accountability, Cross-cutting issues
Tete (Draft)	2012-2021	**Vision**: The potential wealth of the Province turned into socioeconomic development in an integrated, sustainable and equitable manner **Mission**: Promote the development of the Province through sustainable exploitation of resources, diversification of investment, public-private partnerships in support of the creation and redistribution of wealth, generation of employment for the improvement of living conditions of the population. **Development Pillars**: Promoting economic growth, Infrastructure to support economic and social development, Access to high quality basic social services, Good governance/public administration and public finance management, Cross-cutting issues

Source: Provincial Strategic Development Plan for each Province

3.5.2 Outlines of Five Provinces

(1) Niassa Province

Niassa Province is located next to Tanzania (Niassa lake is located at its border) and Malawi (there are three border posts). It currently has the smallest population (1.2 million) and the smallest economic activities (5,930.7 Million MT in GRDP) among the five provinces. On the other hand, it has the largest land area (122,400km^2), which is mainly covered by Forest area (77% of the total land area in Niassa, and 41% of the Nacala Corridor Region). Niassa Province is situated at a comparatively high altitude and has the lowest temperature. Its urban population is relatively low. Furthermore, it has a relatively low poverty ratio (31.9%) despite its having the highest

unemployment rate (31.7%). Lichinga and Cuamba are major cities in Niassa Province with populations of 147,475 and 81,982 respectively. The length of primary roads per land area is relatively low at 6.07 km per 1,000 km^2. As its unemployment rate was the highest (31.7 %) in the five provinces, it is necessary to develop work places for the people. As development potentials, it has coal resources in the northern area, tourism around Niassa Lake and Niassa Reserve, tree plantation around Lichinga City, and so on.

(2) Cabo Delgado Province

Cabo Delgado Province is located along the Indian Ocean with a population of 1.6 million. It had the highest pace of GDP growth (9.3%, 2005-2011). It borders Tanzania, but there is only one border post. The major economic sectors are agriculture, fishery and forestry industries (51.1%). Furthermore, it has a beautiful coastal line and islands which are attracting many tourism investments. Actually, it has the largest number of international guest arrivals (10,192) of the five provinces. In addition, the poverty ratio and the unemployment ratio are low (37.4% and 10.9% respectively). The capital city of Cabo Delgado is Pemba city with a population of 141,082. Pemba has a small natural deep-sea port which mainly ships timber to China. As the flat land area is rather small around its bay, it is not suitable for large scale manufacturing. In addition to agro-forestry industry, Cabo Delgado has a good fishery sea field near by Mocimboa da Praia. Huge hydrocarbon resources are currently found along the coastal area from Palma to Pemba.

(3) Nampula Province

Nampula Province with cities such as Nampula city and Nacala-Porto city is the most populated (4.1 million) and urbanized province of the five provinces (28.6% of population live in an urban area). Nacala- Porto has a natural deep-sea port, which acts as the gate to Nacala corridor. Nacala-Port and Nacala-a-Velha have been designated as a special economic zone (SEZ), which has attracted direct investment in manufacturing and other industries. Thus, Nampula Province has the largest GRDP (29,321 Million MT) of the five provinces and high annual growth of GRDP (9.2%). The length of primary roads per land area is the highest (12.63 km per 1,000 km^2). The airport in Nampula plays the role of a hub in the northern region of Mozambique. The coal of Tete Province is planned to be transported by the railway passing through Nampula to Nacala. A new airport is being constructed in Nacala. The urban structures of these cities would be changed and their clear urban plans are yet to be developed. In addition, the literacy rate of Nampula is the highest (40.0%), thus people in Nampula Province are comparatively more educated. It has tourism development potential in beach tourism (Nacala, and Angoche) and history and culture tourism (Mozambique Island).

(4) Zambézia Province

Zambézia Province had a population of 3.9 million as of 2007 and has high rate of annual growth of GRDP (8.9 %). Zambézia Province was the largest agriculture production area in Mozambique about 20 years ago. However, it was damaged by and is still influenced due to the civil war. Currently, Zambézia has 868 processing businesses, and most of them are micro-size. The poverty ratio is the highest (70.5%) of the five provinces. Zambeze River, which is the fourth longest river in Africa (which is also the longest river in Mozambique) and the longest flowing into Indian Ocean from Africa, flows through this province. In the area of northern 7 districts, there is a huge development potential for agro-forestry, such as tea plantation around Gurué, cotton around

Milange, and paddy rice around Insaca, and so on.

(5) Tete Province

Tete Province has been a well-known area where the power plant of Chaora Bassa Dam is located, and currently coal production has been initiated by foreign investors. Other mineral resource developments have also been planned in Tete, such as iron, fluolite, phosphate, base metal, and gold. Although its GRDP growth was the lowest (5.9 %, 2005-2011) of the five provinces, it is expected to have rapid economic growth in the near future because of the mineral resources development. Currently, the share of the service sector is the highest (75.7%) in Tete Province. This might be related to the location of Tete, which is surrounded by Zambia, Malawi and Zimbabwe. It has a population of 1.8 million and has a high poverty ratio (42.0%) and the highest total investment (424.4 million USD), which is 67% of the total for the five provinces. The huge capital investment has not provided employment for the local people yet. In addition, its literacy rate was the lowest

Chapter 4 Existing Conditions of Economic Sectors

4.1 Agricultural Sector

4.1.1 Existing Conditions of Agricultural Sector

(1) Share of Agriculture Sector and Size of Farmers

Agriculture is the largest economic sector in Mozambique, generating 29.4% of the GDP in 2009. It is estimated that the sector absorbs about 80% of the total labour force. In the Nacala Corridor Region, the proportion is even higher as the below figure shows:

Table 4.1.1 Labour Force Projection by Economic Sector in the Nacala Corridor Region (10^3 persons)

Economic Sector	2007	(%)
Agriculture, livestock, fishery & forestry	3,249	84.8
Mining	12	0.3
Manufacturing	90	2.3
Energy	4	0.1
Construction	49	1.3
Commerce & finance	259	6.7
Transport & communication	19	0.5
Other services	151	3.9
Total	3,833	100.0

Source: INE (2007) Population and Housing Census

The number of total farm-households (agriculture & livestock) in Mozambique is 3,827,797, while their total cultivated area is only 5,633,850 ha. The farm-households are predominately small-scale farmers, and their average cultivated area is only 1.47 ha.

Table 4.1.2 Number of Farm-Households and their Cultivated Areas in Mozambique

	Small	Medium	Large	Total
Farm-Households (HH)	3,801,259	25,654	884	3,827,797
(%)	(99.3)	(0.7)	(0.0)	(100.0)
Cultivated Areas (ha)	5,428,571	130,651	74,628	5,633,850
(%)	(96.4)	(2.3)	(1.3)	(100.0)
Average Cultivated Area (ha/household)	1.43	5.09	84.4	1.47

Source: Agriculture Census in 2009-2010, INE
Note: Farm scale is defined as follows:
- Small-scale farmer: all factors are under "Limit 1"
- Medium: if one factor is greater than or equal to "Limit 1"
- Large: if one factor is greater than or equal to "Limit 2"

Factors	Limit 1	Limit 2
Non irrigated cultivation area (ha)	10	50
Irrigated cultivation, crops, horticulture, floriculture	5	10
Number of head of cattle	10	100
Number of head of goats / sheep / swine	50	500
Number of poultry	2,000	10,000

The table below shows cultivated areas by size of farm and province, including the provinces related to Nacala Corridor Region. The total cultivated area in the five provinces related to the Nacala Corridor Region is 3.63 million hectares, of which 3.55 million ha or 97.6% is cultivated by small farmers, whereas 1.5% and 0.8% are cultivated by medium and large farmers respectively. The percentages of medium-scale and large-scale farmers are relatively high in Tete, Gaza and Maputo Provinces, while the percentage is very limited in the northern provinces, which are the agricultural production centres in the country.

Table 4.1.3 Cultivated Areas by Size of Farm and Province

Province	Small	Medium	Large	Total
Niassa	402,633 (98.3)	6,114 (1.5)	726 (0.2)	409,473 (100.0)
Cabo Delgado	487,273 (99.2)	3,194 (0.7)	684 (0.1)	491,151 (100.0)
Nampula	1,010,769	7,771	19,208	1,037,748
	(94.7)	(5.1)	(0.2)	(100.0)
Manica	534,900 (96.2)	18,212 (3.3)	2,788 (0.5)	555,900 (100.0)
Sofala	458,150 (96.7)	10,696 (2.3)	4,702 (1.0)	473,548 (100.0)
Inhambane	403,284 (97.2)	10,553 (2.5)	1,004 (0.2)	414,841 (100.0)
Gaza	337,233 (92.6)	20,131 (5.5)	7,003 (1.9)	364,367 (100.0)
Maputo	119,572 (74.1)	12,714 (7.9)	29,066 (18.0)	161,352 (100.0)
Cidade de Maputo	28,667 (91.6)	2,571 (8.2)	48 (0.2)	31,286 (100.0)
Total (ha)	5,428,571 (96.4)	130,651 (2.3)	74,628 (1.3)	5,633,850 (100.0)

Source: Agriculture Census in 2009-2010, INE
Note1: Figures in parentheses show the percentages of cultivated areas in each province.
Note2: Farm scale is defined the same as in the Note of Table 4.1.1.

(2) Major Crop Production

Maize, cassava, sorghum and millet are major traditional food crops cultivated by small-scale farmers, while paddy is grown by large-scale farmers, as well as individual farmers. Wheat production is negligible although it is a major food that is consumed by the locals. Production in 2010 of pulses/beans ranked 3rd in the world, while cassava ranked 10th and sweet potatoes ranked 11th. The following table shows the area harvested, production and yield by each of food crop in Mozambique in 2010.

Most cash crops were developed during the colonial period, and cotton, tobacco, cashew nuts and sugar are still important export commodities of Mozambique. Many individual farmers also have started the production of cash crops. Cotton and tobacco are grown by outgrowers of private companies that have monopoly rights from the government to contract out to farmers and buy their harvested crop within their concession areas. Production in 2010 of castor oil seed ranked 4th in the world, while cashew nuts with shells ranked 11th, unmanufactured tobacco was 12th, sesame seed was 15th, and coconuts was 17th in the world.

Nampula, Zambézia and Tete are leading provinces in terms of crop production in the country as shown below. They are also relatively densely populated provinces, and more than half of the total

farm-households are concentrated there.

Table 4.1.4 Crop Production in Mozambique

	Production in the Study Area* (2007)		Rank in Mozambique		
	(1000 ton)	% to National Production	1	2	3
Maize	725	64.0	Zambézia	Tete	-
Cassava	3,623	79.5	Zambézia	Nampula	-
Rice (milled)	90	87.4	Zambézia	Cabo Delgado	-
Sorghum	83	49.1	-	-	Tete
Millet	16.6	66.4	Tete	0	Zambézia
Haricot Beans	47.1	85.6	Niassa	Zambézia	Tete
Cowpea	44	71.0	Nampula	Cabo Delgado	-
Groundnut	86	85.1	Nampula	Zambézia	Cabo Delgado
Sweet Potato	530	61.6	Tete	Zambézia	-
Cotton	61	65.6	Cabo Delgado	-	Tete
Cashew Nuts	32.1	56.3	Nampula	Zambézia	-
Sesame seed	13.3	70.0	Tete	Niassa	Zambézia
Tobacco	33.3	92.5	Tete	Niassa	Zambézia
Sunflower	2.33	38.8	-	Zambézia	Tete

Note: * Total production of Cabo Delgado, Nampula, Niassa, Tete and the whole of Zambézia Province.
Source: TIA 2007, MINAG

The table below shows the major crop production by province, including the five provinces related to the Nacala Corridor Region.

Table 4.1.5 Major Crop Production by Provinces (unit: 1,000 tons)

Crop	Northern Region			Central Region				Southern Region			Total
	Niassa	Cabo Delgado	Nam-pula	Zam-bézia	Tete	Manica	Sofara	Inham bane	Gaza	Mapu to	
Maize	104	86	94	**229**	**212**	**212**	97	29	61	11	1,133
Cassava	88	45	**1,144**	**2,322**	24	171	123	442	156	42	4,557
Rice (milled)	3	12	10	**62**	3	2	11	2	2	0.1	103
Sorghum	8	18	21	14	22	**44**	**36**	3	1	-	169
Millet	0.9	0.2	1.5	3.4	**10.6**	2.4	**3.6**	0.5	1.8	-	25
Haricot Beans	**16**	0.1	4	**15**	12	3	1	0.2	3	0.1	55
Cowpea	1	**12**	**20**	6	5	3	2	9	3	1	62
Ground Nut	3	11	**50**	12	10	3.3	3	8.3	2	1	101
Sweet Potato	20	8	9	**205**	**288**	**178**	74	7	56	15	861
Cotton	1	**24**	11	9	**16**	**17**	**15**	0.02	0.02	0	93
Cashew Nuts	-	3.9	**14.8**	**13.4**	-	3.2	4.7	**9.8**	7.2	0.5	57
Sesame Seed	0.3	**4**	**6**	1	2	2	**4**	-	0	-	19
Tobacco	**11**	0.3	1	5	**16**	1	0.1	0.1	-	0	36
Sunflower	0.1	0.02	0.01	**2**	0.2	**3**	0.04	0	0	-	6

Source: TIA 2007, MINAG
Note: The total (national) calculation is not correct for some crops.

(3) Price of Crops and Cash Income

According to PEDSA (2011-20), less than 10% of all farming households have surplus products and earn cash incomes. It can be estimated that the percentage is lower in remote rural areas. Based on field interviews conducted in ProSAVANA-PD, most of the surplus is staple food, and the average price for each crop is shown in the table below, which is generally low. These crops are purchased by middlemen at each farmer's house or at a nearby market, and limited availability of markets for the farmers can be some of the causes of the low price.

Table 4.1.6 Farmers' Selling Price of Major Crops (March – July, 2012)

No	Crop	Price (MT/kg)		No	Crop	Price (MT/kg)	
		Average	Range			Average	Range
1	Maize (grain)	4.2	3.0 - 5.0	14	Sweet potato	2.9	2.5 - 3.5
2	Cassava (dry)	2.4	2.0 - 3.5	15	Potato	4.8	4.5 - 6.0
3	Sorghum (grain)	4.9	4.0 - 6.5	16	Onion	15	10.0 - 20.0
4	Millet (grain)	14.9	14.5 - 15.0	17	Tomato	7.1	5.0 - 7.5
5	Rice (paddy grain)	4.2	3.5 - 5.0	18	Cabbage	8.8	8.0 - 10.0
6	Wheat	-	-	19	Sesame seed	23.0	20.0 - 25.0
7	Ground nut (shelled)	21.5	17.5 - 25.0	20	Sunflower seed	5.0	5.0
8	Ground nut (w-shell)	5.9	5.0 - 7.0	21	Cashew-nut	12.8	10.0 - 17.5
9	Haricot beans	19.5	18.0 - 25.0	22	Banana	6.7	6.0 - 7.0
10	Cowpea	5.6	5.0 - 7.5	23	Sugarcane (plant)	1.5	1.5
11	Mungbean	10.6	7.0 - 13.0	24	Cotton	15.0	15.0
12	Pigeon pea	12.8	10.0 - 18.0	25	Tobacco (high-quality)	60.0	60.0
13	Soybean	12.1	10.0 - 15.0				

Source: ProSAVANA (2014) Draft Master Plan (draft version)

is difficult to obtain the accurate area of the fallow lands, according to the ProSAVANA Study, the area of arable land in the ProSAVANA Study Area[1] including the fallow land is estimated to be two or three times larger than the area which is currently cultivated.

The Land Law of Mozambique (Law No. 19/97) regulates that land use rights (DUAT: "Right of land use and benefit") can be declared if the local resident occupied the land in accordance with customary norms or he has used the land for at least 10 years. However, most farmers practice agriculture without having registered DUAT, since it is not compulsory to register DUATs acquired through good faith occupation by national individuals. Farmers also do not recognize necessity and benefit of DUATs and the land law itself. In addition, the application fee for DUAT is too expensive for small-scale farmers to register lands. As a result, few small-scale farmers apply for DUAT registration. Therefore, investors could come in and think that these occupied but un-registered lands are available, and this has caused conflicts between local farmers and outside investors.

Further, in some areas of the Nacala Corridor Region where population density is relatively high and is expected to be higher in the future as well, land will be insufficient for all the farmers' cultivation. In reality, land disputes between community members have actually happened in some densely populated areas, when for example a new comer tries to expand his land and cultivate someone's fallow land.

4.1.2 Policies and Programmes for Agriculture Sector

(1) Strategic Plan for Development of the Agriculture Sector (PEDSA)

The government approved the Strategic Plan for Development of the Agriculture Sector (PEDSA, 2011 - 2020) on 3 May 2011. PEDSA emerges as a guiding framework, synergies driver and harmonising tool to promote agriculture development with a target of achieving an average annual agriculture growth of 7%.

In PEDSA, the agricultural development vision is set as "an integrated, prosperous, and sustainable

[1] The Study Area of ProSAVANA-PD is composed of 19 districts from the Provinces of Nampula, Niassa and Zambezia, with an area of 107,002 km^2.

agriculture sector" and the mission is to "contribute towards the food security and income of agricultural producers in a competitive and sustainable way, guaranteeing social and gender equity." The strategic objectives (pillars) are as follows:

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

PEDSA will be operated in five-year and annual plans:

- The Five-Year Programme 2010 to 2014 harmonises sectoral activities to introduce significant improvements in land, water and forest use, with the objective of achieving the Millennium Development Goals. The Food Production Action Plan (PAPA) for 2008 to 2011 forms part of PEDSA during the first five years.
- The Five-Year Programme 2015 to 2019 consolidates food security and widens access to domestic, regional and global markets. The operational basis for this period will be established in light of lessons learned during implementation in the first five years.

(2) ProSAVANA

A trilateral cooperation programme called "ProSAVANA" was started after the signing of an agreement in September 2009. It aims to create new models of sustainable agricultural development along the Nacala Corridor with due considerations for human security, food security, and poverty reduction for the local population, as well as protection of wildlife and preservation of the environment. ProSAVANA has three components under the framework: 1) Improvement of Research and Technology Transfer Capacity (ProSAVANA-PI); 2) Support for Agriculture Development Master Plan in the Nacala Corridor (ProSAVANA-PD); and 3) Improvement of Agricultural Extension Services Capacity (ProSAVANA –PEM).

(3) Other International Cooperation Projects

There are a number of on-going projects to support agriculture development in Mozambique assisted by such countries and organisations as Canada, Switzerland, Finland, EC, Italy, UK, Sweden, IFAD, World Bank, UNDP, FAO, USA and MCC, Japan and Norway. An increasing number of investments in the agriculture sector is observed. Information obtained regarding CEPAGRI shows that a total investment amount of 386 million US$ and employment of 13,800 workers is planned.

4.2 Forestry Sector

4.2.1 Existing Conditions of Forestry Sector

(1) Forest Area

Mozambique has excellent agro-climatic conditions for tree growth and it faces the Indian Ocean, which gives it proximity to huge emerging markets such as India and China. According to the "Strategies for Reforestation," Mozambique has 36 million ha of arable land and presently only 14 million of them are used for agricultural production including industrial tree planting. Moreover, the strategies state that about 15 million ha of land is required to attain 100% national food self-sufficiency. Therefore, about 21 million ha of the land would be available for purposes besides domestic food production including industry tree planting.

characterised as an important area for forestry.

Table 4.2.1 Forest Cover of the Five Provinces related to the Nacala Corridor Region and Mozambique

Province	Total Area (km^2)	Forest Area (km^2)	Forest Cover Rate (%)
Study Area	48,217	26,289	54.5
Cabo Delgado	*7,787*	*4,803*	*61.7*
Nampula	*7,817*	*2,771*	*35.5*
Niassa	*12,240*	*9,429*	*77.0*
Tete	*10,065*	*4,221*	*41.9*
*Zambézia**	*10,308*	*5,064*	*49.1*
Other Provinces	29,775	13,779	46.3
Mozambique	77,991	40,068	51.4

Note: * The area and rate shows the data of whole Zambézia Province
Source : AIFM 2008, MINAG

(2) Production and Export

Timber produced in the Nacala Corridor Region is exported to international markets from Nacala port or Pemba port. Actually, there is no production from any planted forests, therefore, those forest products were made from natural forest stands through the issuance of forest concessions controlled by Provincial Services of Forest and Wildlife (SPFFB/DPA). The average annual timber exportation volume is 20,000 m^3 from Nacala and 30,000 m^3 from Pemba. Exportation volume from Pemba is growing in the context of the relatively abundant natural tropical forest resources in Cabo Delgado Province. Main market of the timber is China. But total volume of forest concessions is controlled and this volume will not expand much.

4.2.2 Policies and Programmes for Forestry Sector

(1) National Strategy for Reforestation

In order to promote economic development in the forestry sector of the country, The National Strategies

for Reforestation was established in 2009. The overall objective of the strategies are to increase the contribution of the forestry sector in poverty reduction, and economic, social and environmental development through the establishment of a modern, dynamic and competitive forest industry, and forestry based value chains. Some of the targets set forth in the strategies include establishment of at least one million ha of forest plantation by 2030, creation of at least 350,000 permanent jobs over the next 20 years, attraction of private investment for reforestation at one billion US$ and generation of an annual revenue at 1,500 million US$ per year through the export of manufactured forest products.

(2) International Cooperation Projects

Japan and Finland are supporting the forestry sector by technical assistance for capacity development, grant aid for forest preservation and a REDD+[2] related project (See Table 4.2.2).

Table 4.2.2 International Cooperation Projects on Forestry Sector

Type/Name of Project	Outlines
JAPAN	
Technical Assistance[1)]	✓ Dispatching One JICA expert as an advisor for strengthening forest management to DNTF (Directorate of Land and Forestry). ✓ Provision of a certain technology concerning the REDD+ system ✓ To strengthen forest management capacity, forest management in the community, and forest monitoring and evaluation.
Japanese Grant Aid: Forest Preservation Programme[2)]	✓ Grant Amount: JPY 700 million (approximately US$8.75 million) ✓ Provision of goods and services to strengthen Mozambique's forest management capacity (satellite image, PCs, sampling devices, severs, vehicles for surveys and management) ✓ Establishment of a sustainable forest resource information platform to monitor REED+
Project for Establishment of Sustainable Forest Resource Information Platform for Monitoring REDD+[3)]	✓ Project Period: 5 years programme from 2012 ✓ Pilot Provinces; Gaza Province and Cabo Delgado Province ✓ To develop a database system to serve as a forest resource information platform ✓ To develop a Monitoring, Reporting and Verification ✓ To estimate the Reference Emission Level or/ and Reference Level ✓ To Develop the necessary data-set for estimation of biomass and amount of carbon
FINLAND	
Forest Sector Support Programme in Mozambique[4)]	✓ Programme Area; Cabo Delgado, Nampula, Zambézia, Niassa ✓ Time Frame: August 2009-July 2014 ✓ Overall Objective: ➢ Forest management more sustainable ➢ DNTF, SPFFB with better capacity to manage the forestry and wildlife resources ➢ Wood industries producing quality products and managing their concessions well ➢ Forest research and training institutes with better capacity to implement studies on forestry and climate change related issues ➢ Communities and small-scale farmers benefitting from forest and wildlife related business opportunities

Source :
1)JICA website;http://gwweb.jica.go.jp/km/ProjectView.nsf/0/1624082515fa34ce492577ea007a02a3?OpenDocument
2) MoFA website; http://www.mofa.go.jp/mofaj/press/release/22/4/0428_09.html
3) JICA website; http://www.jica.go.jp/oda/project/1100607/index.html
4) Forest Sector Support Programme in Mozambique, Programme Document,Ministry for Foreign Affairs of Finland, March 2009, Unit for Southern Africa

(3) Industrial Tree Planting (On-going and Planning Stage)

Industrial tree plantations in the Central and Northern Regions of Mozambique have been developed mostly since 2005 and tree plantation areas in Niassa Province are expanding every year. Other companies are already investing in the forestry sector in Niassa, and the majority of these companies are owned by Swedish shareholders (Global Solidarity Forest Fund). Furthermore, it is expected that one

[2] REDD+: (Reducing Emissions from Deforestation and Forest Degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries)

another centre of the industrial tree plantation will be foreseen in the central of Nampula, district of Mecuburi, Ribaué, Nampla and Murrupula. It seems to be expected rapid growth of the sector in the north of Zambézia Province also.

The on-going and planned tree planting projects in the Nacala Corridor Region cover areas of 10 thousand ha in Cabo Delgado Province, 126 thousand ha in Nampula Province, 825 thousand ha in Niassa Province and 466 thousand ha in Zambézia Province (See in the Table below).

Table 4.2.3 Industrial Tree Planting Companies and Operations in the Nacala Corridor Region

Province	District	Company	Area (ha)		Tree Species	Investors
Cabo Delgado	n.a.	MedEnery	10,000	*1	Palm	MedEnergy of Italy
Cabo Delgado Sub-Total			10,000			
Nampula	Mecuburi, Ribaue, Nampla, Murrupula	Lurio Green Resource	126,000	*1	Eucalyptus, pine and acacia	Green Resources (Norway) and Norwegian Fund
Nampula Sub-Total			126,000			
Niassa	Lago, Sanga, Lichinga	Chikweti	140,000	*2	Eucalyptus and indigenous sp.	Global Solidary DITH(USA), GSFF(Sweden), Fundação Universitária Sociedade de
	Muembe, Majune					
Niassa	Ngauma, Mandimba	Florestal de Messangulo	100,000	*2	Eucalyptus and pine	GSFF
Niassa	Muembe	New Forests	87,000	*2	Eucalyptus and pine	New Forests Company (UK)
Niassa	Sanga	Green Resources Niassa	42,330	*2	Eucalyptus and pine	Green Resources (Norway)
Niassa	Lichinga	Florestas do Planalto	165,700	*2	Eucalyptus and pine	UPM (Finland)
Niassa		Malonda Fundation	80,000	*2	Eucalyptus and pine	Sweden & Mozambique
Niassa Sub-Total			825,030			
Zambézia	Ile, Namarroi	Portucel	173,327	*3	Eucalyptus	Grupo Portucel/Soporcel (Portugal)
Zambézia	Alto Molocue, Ile, Lugela	Ntacua Florestas	57,485	*4	Eucalyptus and pine	GSFF 53%, DITH 35%, Diocese de Niassa 10%, other diversified small-scale investors 2%
Zambézia	Gurue, Milange, Namarroi	Tectona Forests	117,874	*4	Teak	GSFF 53%, DITH 35%, Diocese de Niassa 10%, other diversified small-scale investors 2%
Zambézia	Lugela, Milange	Winnua, Lda	1,000	*3	n.a.	n.a.
Zambézia	Gurué, Milange, Namarroi	A.T.F.C. Madeiras e Agricultrura	116,074	*4	n.a.	n.a.
Zambézia Sub-Total			465,760			
Total			1,426,790			

Source:
*1 : JICSA Study Team
*2 : Seminar on Forestry Plantation and Industry of Niassa, 6th August 2012, Forestry Association of Niassa
*3 : SPGC/Zambézia.
*4 : SPGC/Zambézia, included under process-proposal,

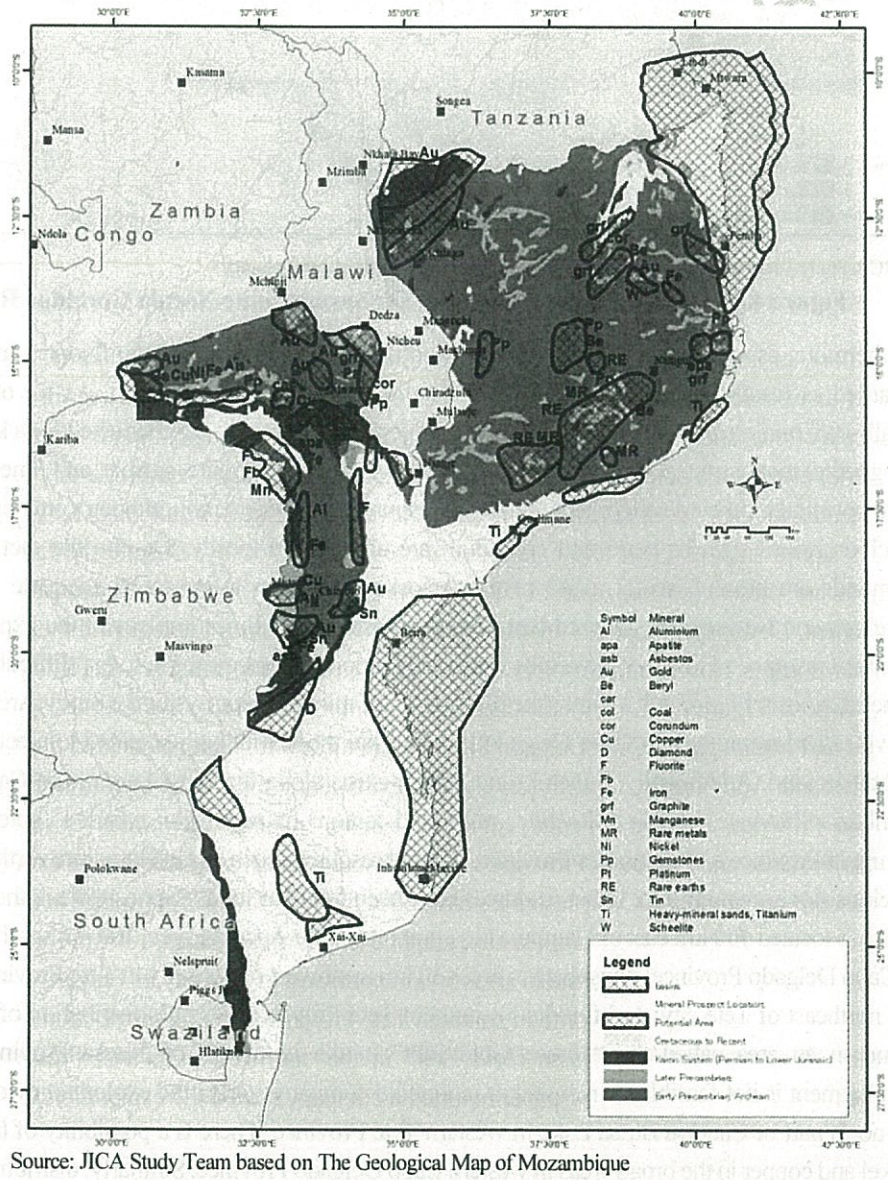
Note:
*GSFF : Global Solidarity Forest Fund is a Sweden-based, investment fund focused on the forestry sector in Mozambique. GSFF develops projects that provide returns to its investors and at the same time promotes community development and environmental integrity.
*DITH : Diversified International Timber Holdings (USA)

4.3 Mining Industry

4.3.1 Existing Conditions of Mineral Resources in Mozambique and Nacala Corridor Region

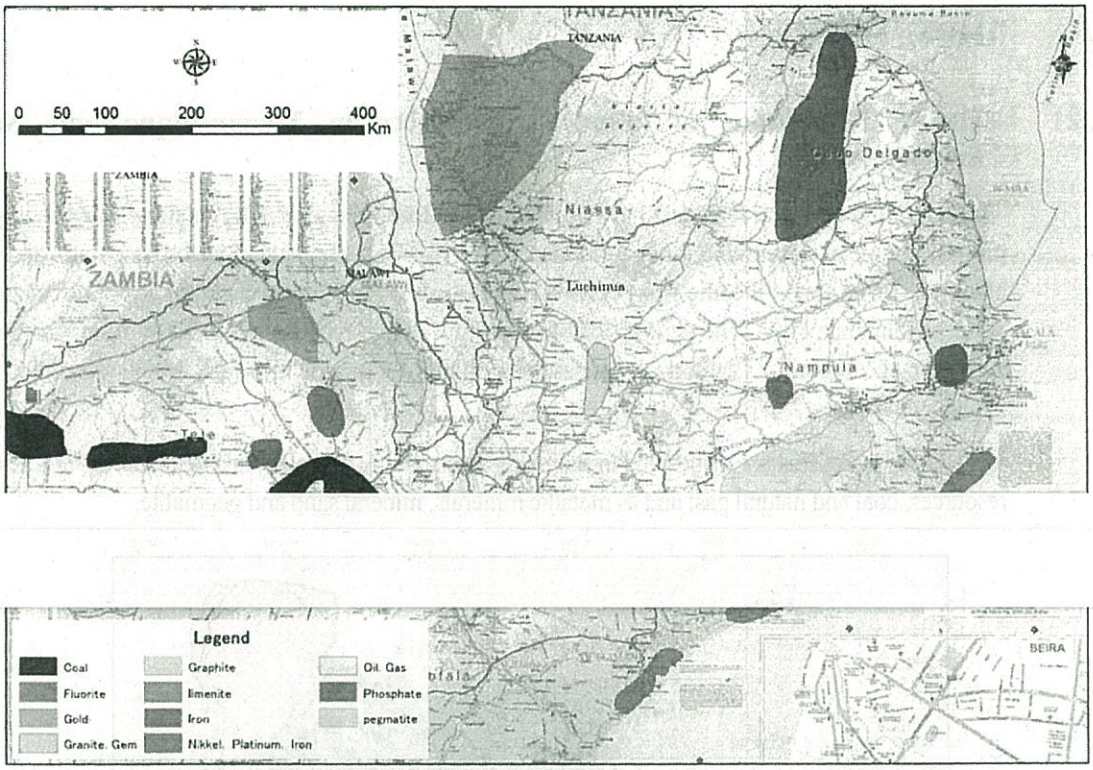
Various kinds of mineral resources have been found in Mozambique, and the country is now an important producer of metal, accounting for a world share (2011) of 7% for titanium, 3% for zirconium, and 1% for aluminium. The export income share of Mozambique in 2011 consisted of aluminium (50%), natural gas (6%) and ilmenite (4%). The geology of Mozambique can be broadly classified into four categories as shown in the Figure 4.3.1, and each possesses different kinds of mineral deposits according to the geological features.

Mineral resources that are distributed in the Study Area, and financially feasible resources are, as energy resources, coal and natural gas; and as metallic minerals, mineral sand and pegmatite.



Source: JICA Study Team based on The Geological Map of Mozambique

Figure 4.3.1 Mineral Resource Map of Mozambique



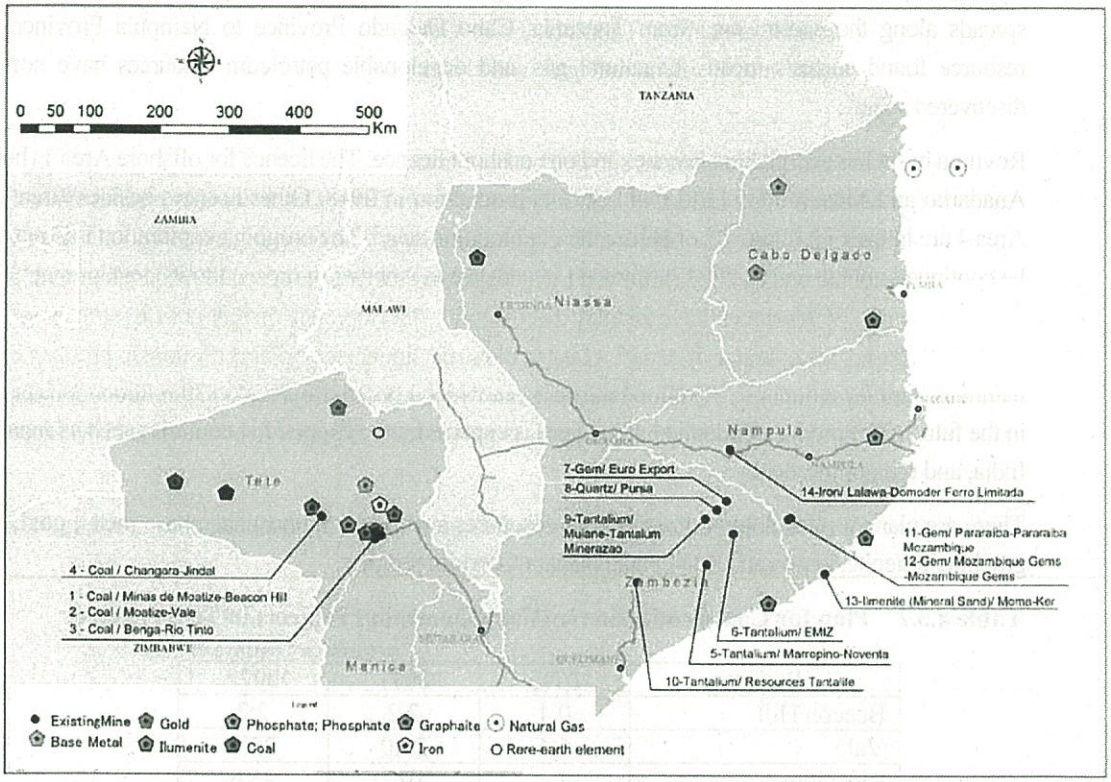
Source: JICA Study Team based on the data provided by Ministry of Mineral Resources

Figure 4.3.2 Distribution of Mineral Resources in the Nacala Corridor Region

Furthermore, as industrial mineral resources (industrial material), phosphate, fluorite, and graphite are regarded as resources whose production will be developed in a short period. As for other resources, small-scale mining and exploration in a few locations are currently being conducted for a kind of iron ore (magnetite) that has the potential for development. Also, gravel, granite, marble, and limestone similarly have potential for their development as mineral resources for construction, although only on a small scale. Precious stones such as beryl and corundum are also mined locally. Despite the fact that gold and diamonds are present, so far, none of the deposits have been found to be adequate for large-scale development. Newspapers reported that foreign investors sometimes implement the exploration works for metal resources. However the results were rarely reported. That means it is very difficult to find a large mineral deposit. Figure 4.3.2 shows the distribution of mineral resources in the Study Area. Coal in Tete Province and natural gas in Cabo Delgado Province are those with high potential to meet the increasing global demand. Additionally, mineral sand, which exists along the coastal area from Cabo Delgado to Zambézia Province, contains ilmenite, rutile and zircon. In pegmatite, which is spread throughout Nampula Province and Zambézia Province, mineral resources such as tantalum, rare earth elements, and precious stone are produced. Other resources have been found as follows: phosphate in the Monapo area, which is located 100 km east of Nampula city; graphite in the Ancuabe area, 100 km south of Pemba city in Cabo Delgado Province; phosphate in areas 30 km northwest of Tete city in Tete Province; iron ore 30 km northeast of Tete city; and fluorite in southern Tete Province. Though distribution of gold has been found in an area called the "Niassa Gold Belt" in the northwest of Niassa Province, large-scale development is not feasible. A newspaper reported a company started the exploration works for gold at the north part of Cahorra Bassa Lake in western Tete Province. There is a possibility of the existence of nickel and copper in the broad areas in western Cabo Delgado Province. Similarly, distribution of metallic

minerals such as nickel is expected in the areas 150 km north of Tete City.

There are 14 mines in the Nacala Corridor Region that are currently operated on a commercial basis. Figure 4.3.3 and Table 4.3.1 show their locations and outlines of the projects. There are four coal mines, one mineral sand mine, four small tatalum mines, four small mines producing aquamarine and emeralds and one small iron-producing mine.



Source: JICA Study Team based on National Directorate of Mine and National Directorate

Figure 4.3.3 Location of Operating Mines in the Nacala Corridor Region

Table 4.3.1 Operating Mines in the Nacala Corridor Region

Province	Commodity	Project Name	Share Holder	Type	Production Capacity
Tete	Coal	Minas de Moatize	Beacon Hill	Sedimentary	2 million ton/year
	Coal	Vale Moatize	Vale	Sedimentary	22 million tons/year
	Coal	Benga	Rio Tinto, Tata	Sedimentary	10 million tons/year
	Coal	Changara	Jindal	Sedimentary	10 million tons/year
Zambezia	Tantalium	Marropino	Noventa	pegmatite	*n.a*
	Tantalium	EMIZ	*n.a*	pegmatite	*n.a*
	Gem (tourmarine)	Euro Export	*n.a*	pegmatite	*n.a*
	Quarts	Purusa	*n.a*	pegmatite	*n.a*
	Tantalium	Muiane	Tantaum, Mineracao and Prospeccao Limitada	pegmatite	25 tons/year (2010)
	Tantalium	Resources Tantalite	*n.a*	*n.a*	*n.a*
Nampula	Gem	Pararaiba	Pararaiba Mozambique	pegmatite	*n.a*
	Gem	Mozambique Gems	Mozambique Gems	pegmatite	*n.a*
	Ilmenite (titanium ore)	Moma	Kermare	Mineral sand	2010 Production capacity: 800,000 tons (ilumenite), 50,000 ton (zircon), 14,000 ton (rutile)
	Iron	Lalawa	Domodor Ferro Limitada	Volcanics	*n.a*

Source: JICA Study Team based on National Directorate of Mine

4.3.2 Future Prospect of the Mining Sector

The plan for coal production by the four projects in Tete Province is as follows. The total amount of coal production is planned to increase from 12 million tons per year in 2013 to 53 million tons in 2017 and 60 million tons in 2022.

Hydrocarbon resources in the Nacala Corridor Region are found successively in the Rovuma basin that spreads along the coastal area from Tanzania, Cabo Delgado Province to Nampula Province. The resource found consists mostly of natural gas, and developable petroleum resources have not been discovered so far.

Rovuma basin has six offshore licences and one onshore licence. The licence for offshore Area 1 (held by Anadarko and Mitsui & Co., Ltd.) will start its production in 2018. Other licences besides Area 1 and Area 4 are in their first stage of, or before their exploration stage. The on-going exploration in Area 1 will be continued until the end of 2013, followed by a decision whether to proceed to its development. Since

natural gas for the amount of 10 million tons per year, which is to be expanded to 50 million tons per year in the future. The produced liquefied natural gas is expected to be exported to countries such as Japan and India, and used domestically.

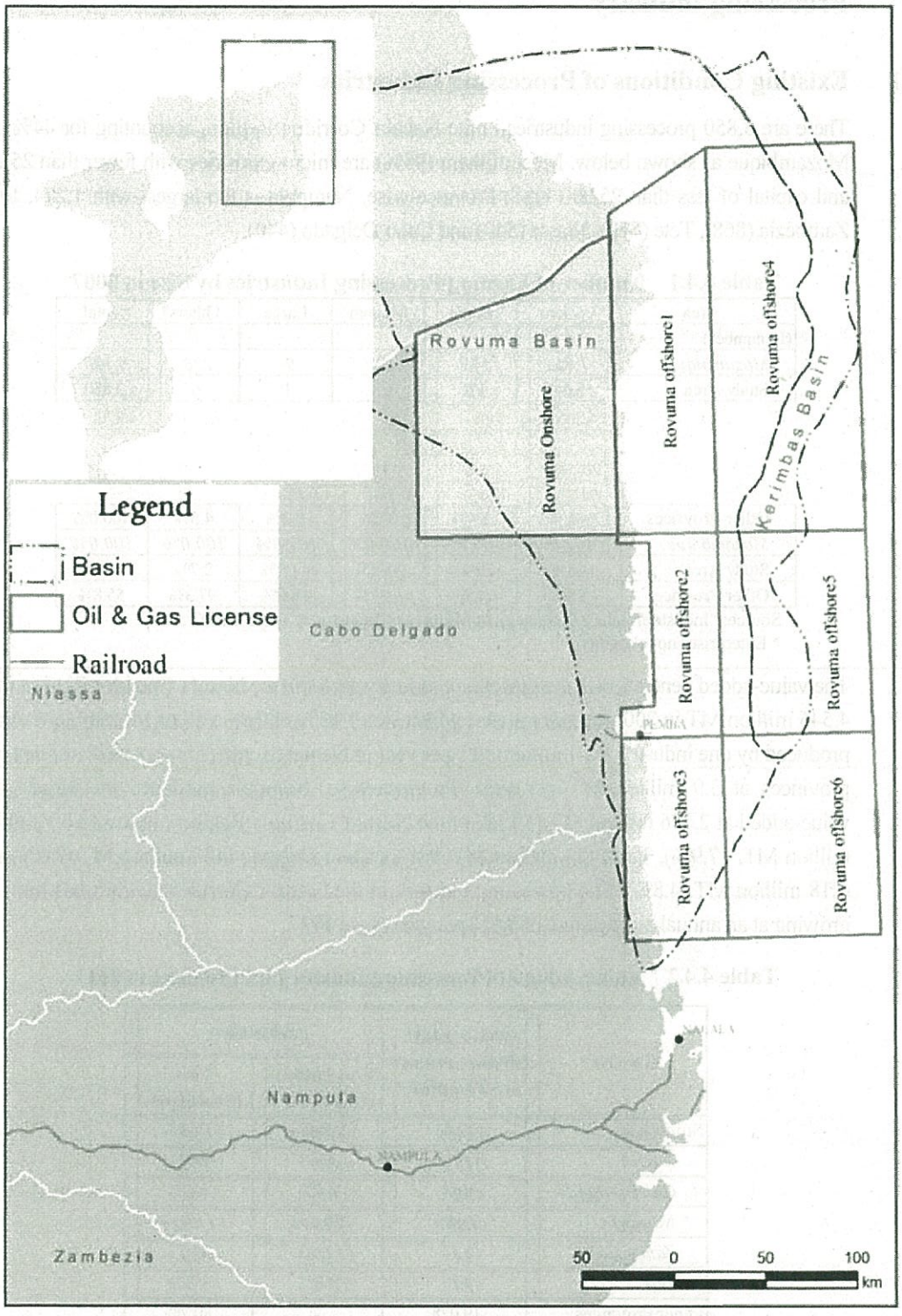
There are plans for developing other mineral resources such as iron, phosphate, base metal, gold, REE, graphite, ilmenite, zircon and rutile in the Nacala Corridor Region.

Table 4.3.2 Plan for Coal Production by Four Operating Projects in Tete Province

(Unit: million ton per year)

Project	2013	2017	2022
Beacon Hill	0.4	2.2	2.2
Vale	6.4	22.0	22.0
Rio Tinto	2.4	19.2	25.6
Jindal Steel	3.0	10.0	10.0
Total	12.2	53.4	59.8

Source: JICA Study Team based on NEDO, 2012



Source: JICA Study Team based on JOGMEC, etc.

Figure 4.3.4 Location of Oil and Gas Licences

4.4 Processing Industry

4.4.1 Existing Conditions of Processing Industries

There are 3,850 processing industries in the Nacala Corridor Region, accounting for 44% of those in Mozambique as shown below. Most of them (95%) are micro industries with fewer than 25 employees and capital of less than 25,000 US$. Province-wise, Nampula is the largest with 1,224, followed by Zambézia (868), Tete (778), Niassa (540) and Cabo Delgado (440).

Table 4.4.1 Number of Existing Processing Industries by Size in 2007

Area	Micro	Small	Medum	Large	Others*	Total
(In number)						
Mozambique	*7,851*	*579*	*58*	*9*	*223*	*8,720*
Study Area	3,645	170	28	1	6	3,850
Other Provinces	86.4%	8.4%	0.6%	0.2%	4.5%	100.0%
Mozambique	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*
Study Area	46.4%	29.4%	48.3%	11.1%	2.7%	44.2%
Other Provinces	53.6%	70.6%	51.7%	88.9%	97.3%	55.8%

Source: "Industrial Policy & Strategy of Ministry of Industry & Trade", 2007 , MIC
* Enterprises not classified

The value-added generation in the processing industry sector in the Nacala Corridor Region in 2011 was 4,545 million MT in 2003 constant prices, which was 19.3% of that in all of Mozambique. Value added produced by one industry is 1.1 million MT per year in Nampula, which is about 28% of that in the other provinces at 3.9 million MT per year. Province-wise, Nampula produced the largest amount of value-added at 2,686 million MT (59.1% of the Nacala Corridor Region), followed by Zambézia (814 million MT, 17.9%), Tete (420 million MT, 9.2%), Cabo Delgado (408 million MT, 9.0%) and Niassa (218 million MT, 4.8%). The processing industry in the Nacala Corridor Region has been constantly growing at an annual average rate of 9.8% per year since 1997.

Table 4.4.2 Value Added of Processing Industry by Province in 2011

Province	Value Added (Million meticais in 2003 price)	Proportion	
		% to Study Area Total	% to Mozambique
Study Area	4,545	100.0%	19.3%
Niassa	*218*	*4.8%*	*0.9%*
Cabo Delgado	*408*	*9.0%*	*1.7%*
Nampula	*2,686*	*59.1%*	*11.4%*
Zambezia	*814*	*17.9%*	*3.5%*
Tete	*420*	*9.2%*	*1.8%*
Other Provinces	19,028	-	80.7%
Mozambique	23,573	-	100.0%

Source: INE's Statistics, 2011

4.4.2 Characteristics by Province[3]

The processing industry in Nampula Province is characterized by the existence of some large scale industries such as cement factories, agro-industry including a wheat milling factory and cashew nut factories and a plastic factory, many of which are concentrated along the national road No.1 and near Nacala City and near Nacala Port. Nampula Province is the biggest agro-processing production province in the country. The main production areas are Mogovolas, Angoche and Moma. The destinations of cashew nut exports are India, Malawi and Singapore, mostly in the form of raw cashew nuts and EU, USA and India in the form of shell-removed or packed cashew nuts.

In Nacala Special Economic Zone (SEZ), the following industries have been investing from 2009 to 2012.

Table 4.4.3 Investments in Nacala SEZ

Year	Number of Projects	Total Inestment Value (US$ million)	Number of Local workers
2009	11	151	4,679
2010	22	218	2,944
2011	8	132	445
2012	27	1,077	6,260
Total	68	1,578	14,328

Source: GAZEDA,2012

There is a big foreign investment project under negotiation. A Brazilian company is planning a paper and pulp factory in Nampula Province with an investment amount of US$ 1,200 million, employing 1,300 workers.

In Cabo Delgado Province, there are many factories of various sizes located along the national road No.1 from Pemba City. Several large factories such as a sea-food processing factory, marble factory and furniture factory have stopped operation due to the past war, shortage of funds, trouble in management and technical problems.

There are the wood processing industry, agro-industry and stone processing industry in Cabo Delgado Province. Chinese and Hong Kong's two companies concluded concession contracts with the government and recently started to export sawn logs, semi-processed logs, and chips to China and Hong Kong with a volume of 50 to 70 containers per year from Pemba Port for export. While there are furniture manufacturing enterprises, most of them are very small minor-scale family operated firms. Marble is produced near Pemba and the local company constructed a marble processing factory for manufacturing wall and floor tiles in the suburbs of Pemba City. This factory, however, has put off starting operation due to lack of technical experience and the shortage of capital. This province has cotton fields in Montepuéz where one company named Plexus from South Africa is producing cotton, extracting seed and exporting abroad. There is no factory to produce further high-valued processed cotton products. Cabo Delgado Province has no seafood processing factory at present, although it has a good fishery sea-field for shrimp, cuttlefish, oyster, tuna etc., near Mocimboa da Praia. In the past there was one big shrimp processing factory located along the sea coast near Pemba. It is closed due to conflict among the joint venture partners, lack of management and frequent black-out of electricity.

[3] Information from Study Team member's hearings and site visits in 2012.

The government has a conceptual plan to establish an industrial park with an area of 18,000 ha in Palma capitalizing on the planned off-shore natural gas. Down-stream industries such as methanol, ethylene, HDPE, LDPE, ammonia, and urea are planned.

In Niassa Province, most of the agro-products such as maize and flour milling, juice, sunflower-seed oil and jam are being produced as family-units by a few persons and sold in 20 litter cans at small local markets. Six companies have obtained permission for forestry plantation with a total area of 500,000 hectares, while total developed forestry plantation area was about 30,000 hectares as of the end of 2011. No actual commercial wood processing industry exists at present. There are plans to start wood processing in the future such as furniture or building materials. A Finish company is said to be negotiating a paper and pulp factory project with the Mozambican government, with an investment amount of US$ 1,700 million and employing 6,000 workers.

There are a number of industries in Zambézia Province whose products are exported such as tea for the manufacturing enterprise. The projects on-going and planned include factories for sugar, fruit juice, bean oil, rice processing and cement.

In Tete Province, some agro-processing industries exist in such areas as processing of cereals in Angónia, tobacco processing and cotton processing in Tete. Tobacco and cotton are produced for export. Tobacco is produced by Mozambique Leaf Tobacco employing 1,720 workers. The tobacco produced is exported to South Africa, Vietnam, USA, Canada, China and the EU. Some industries related with coal production are emerging producing such products as coated steel pipes for mining purposes, plastic tube for drainage and auto repairing.

4.5 Logistics Industry

4.5.1 Existing Conditions of Logistics Industry

(1) Introduction

The logistics can be defined as the organisation of movement of goods over time and space. The purpose of logistics development is to facilitate goods transportation in a specific region at a reasonable cost in a timely manner. Logistics system is composed of goods transportation, border clearing, and inter-modal transhipment and so on. Logistics system or network provides a region or a country with the backbone of trade.

(2) Logistics Performance Index of Mozambique

The Logistics Performance Index 2010[4] ranked Mozambique as 136th among 155 countries (Table 4.5.1). This is slightly better than Zambia but worse than all other adjacent countries.

Table 4.5.1 Logistics Performance Index (2010) of Mozambique

	Mozambique	
Overall LPI	score	2.29
	rank	136
Customs	score	1.95
	rank	145
Infrastructure	score	2.04
	rank	124
International shipments	score	2.77
	rank	87
Logistics competence	score	2.2
	rank	130
Tracking & tracing	score	2.28
	rank	135
Timeliness	score	2.4
	rank	150

Source: World Bank Web Page

The index is generally bad in all items. While shipment is ranked higher than others. customs are evaluated relatively worse than other items. The index shows there is much room for improvement.

(3) Strategic Location of Mozambican Ports on African Continent

Mozambican ports are in strategic location on the south eastern part of the African Continent, in that they are closer to Middle East and Asia than other part of Africa. Mozambican ports and transport corridors also function as the gateway for inland countries of Malawi, Zambia and Zimbabwe.

4.5.2 Institutional Framework

(1) International Agreements

1) South African Development Community (SADC)

As a regional cooperation organisation, SADC aims at lowering institutional and physical barriers within SADC countries for trade facilitation. SADC allows cargo to pass through a transit country without

[4] http://info.worldbank.org/etools/tradesurvey/mode1b.asp
Mozambique was not included in the 2012 version.

paying duty. SADC once prepared a "Regional Chain Custom Bond" system, which is a custom bond system commonly effective for two or more countries' customs.

2) Common Market for Eastern and Southern Africa (COMESA)

Common Market for Eastern and Southern Africa (COMESA) is a regional economic cooperation body consisting of 19 member states in Eastern and Southern Africa. Mozambique was once a member of COMESA from 1994 to 1997. In the sectors of trade facilitation and transport, various multilateral negotiations have taken place within the framework of COMESA rather than SADC. Later, SADC follows and harmonizes the standards and regulations of COMESA. So, there is a little disadvantage for Mozambique not being a member of COMESA.

3) Bilateral Agreement with Neighbouring Countries

Based on the SADC agreement and protocol, bilateral agreements have been prepared with adjacent countries. For example, Mozambique and Zambia agreed on the "Bilateral Agreement on the Carriage of

as necessary with other adjacent countries, namely South Africa, Zimbabwe, and Malawi.

(2) Government Sector

1) Ministry of Transport and Communication (MTC) and related Organisations

At the national level, the Ministry of Transport and Communication (MTC) and the Ministry of Public Works and Housing (MOPH) are working for the logistics sector.

MTC is working as a policy maker and regulatory body that prepares transportation policy and supervises agencies of each mode. Under MTC, CFM (Mozambique Railways) deals with railways and ports, and ADM (Mozambique Airports) operates airports. Under MOPH. ANE (National Administration of Roads) handles all aspects of road matters.

Commercial transporters should be licensed according to the following categories and the respective licensing authorities are responsible for supervising them.

Table 4.5.2 Types of Transportation Business Licences

Categories	Business Areas	Organisations to which Applications are Submitted
Type A	International and inter-urban passengers and cargo Rent-a-car	MTC
Type B	Inter-district, emergency, and national cargo	Provincial DTC
Type C	Urban transportation, school bus, semi-collective and taxi	City Municipality/ Villager
Type D	School bus, semi-collective, taxi and mixed	Province/ District

Source: MTC

2) INAV

Under the MTC, INAV *(Instituto Nacional de Viação*, National Institute of Transport) has been operating (Decree 3/2006 of February 28 2006). INAV is responsible for road safety policy and its implementation, including regulating drivers and vehicles, road regulations such as speed limits, and the collection of road safety data. It also handles following tasks:

- Transportation safety
- Vehicle registration
- Issuance of drivers' licences
- Vehicle inspection

3) INATTER

The MTC is reorganising INAV into INATTER (*Instituto Nacional dos Transportes Terrestre*, National Institute of Land Transport) under the Decree No.32/2011. As of May 2013, only the top level of executives was formally appointed and INAV is still operating. Thus, the reorganisation is still in process. In addition to INAV's function, INATTER works as a regulator of railway sector. It is to succeed the railway regulatory function of CFM. INATTER is to coordinate the international transportation rules to be adopted in the countries. The rules included the driving licences, axle weight and vehicles.

4) Customs

The Customs General Directorate belongs to the Mozambique Revenue Authority. The Northern Regional Department of Customs operates all the custom posts at the borders, ports and international airports.

The customs offices at border posts in the Nacala Corridor Region are mostly housed within one room in the immigration office. However, they perform all the functions of customs processing including payment.

Manual work of customs operations takes time and is often inefficient. Therefore, the introduction of a computerised system has been one of the necessary reforms of customs operations for a long time. Once, in the 2000s, the introduction of ASYCUDA (Automated System for Customs Data) was examined but was not realised. Currently, large customs offices use TIM. On the other hand, customs at border posts keep their logs manually and send them to the headquarters by the form of electrical data regularly.

(3) Private Sector

1) FEMATRO

As a national organisation of private transporters, the Mozambican Federation of Association of Transporters (FEMATRO) represents the interest of the logistics business community. FEMATRO was founded in 2002 and has 25 member associations. Member associations are basically regional and specialise in passenger and/or cargo transport. As members of FEMATRO, local associations in the Nacala Corridor Region have been organised as follows:

- ATPZ: Zambézia Province
- ATROTE: Tete Province
- ASTRA: Nampula Province
- Niassa Association of Transporters: Niassa Province

Among these, ASTRA (Association of Transport, *Associação de Transporte* (Nampula)) is working for 520 member transport companies in Nampula Province. 470 member companies are cargo transporters and the other 50 deal with both cargo and passengers. 250 are based in Nampula.

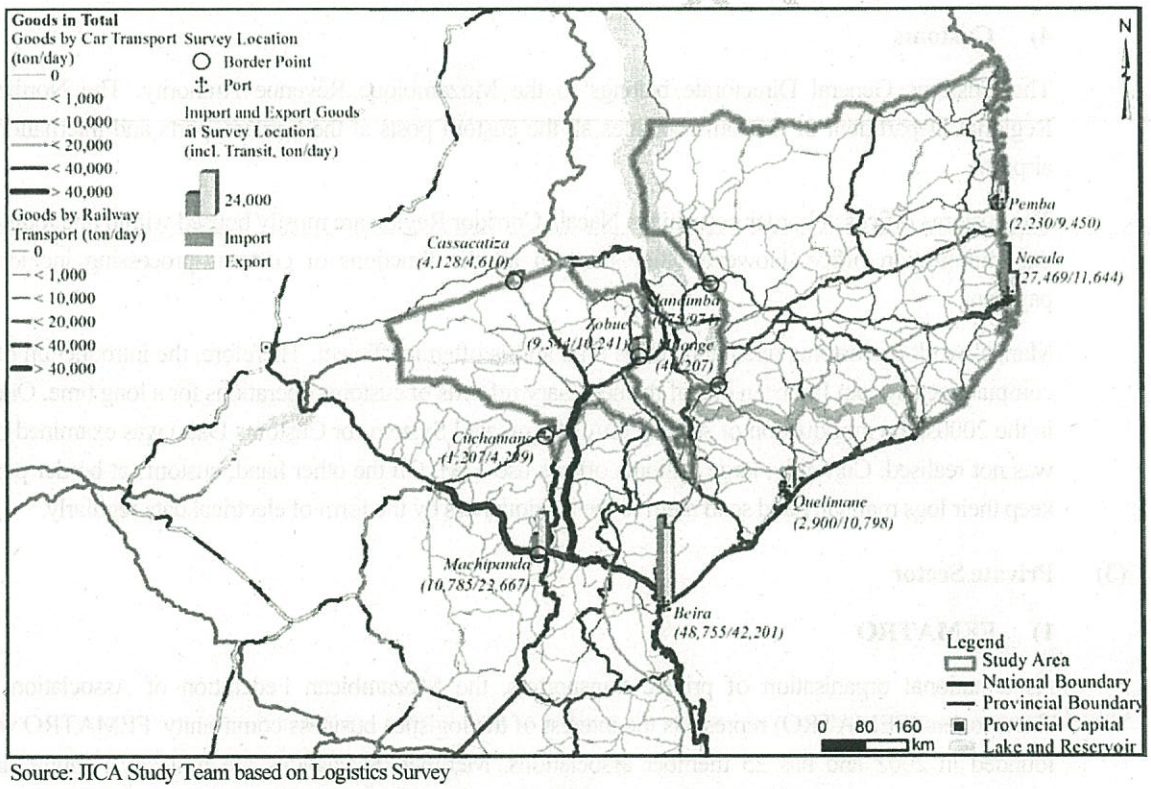
In order to be licenced, transport operators must be affiliated with an association so the organisation rate is very high. In addition, the association functions as a conduit between public and private sectors.

2) Private Transporters

In order to receive cargo operator licences, cargo transporters are required to have more than three trucks and to be associated with a regional transport organisation such as ASTRA. Therefore, a transporter operates as a company not as an individual. Fleet sizes differ from three to in the hundreds. FEMATRO estimates 650 trucks are operating in Nampula Province for international transportation.

4.5.3 Transportation and Logistics Network

conducted by the JICA Study Team in 2012. It shows relatively developed roads in densely populated areas and a segmented network of roads and railways.



Source: JICA Study Team based on Logistics Survey

Figure 4.5.1 Logistics Networks and their Volumes

4.5.4 Cargo Volume

(1) Cargo Volume by Mode

Over the past eight years, logistics modes in Mozambique have experienced a drastic transition. In 2002, railways transported more than twice the cargo of roads, but this has completely turned around in recent

years. Roads transported more than three times the cargo of railways in 2010. This means that the road sector is absorbing all the increasing transport demand, which is growing by an annual rate of 14%. At the same time, the importance of railways still remains.

(2) Cargo Origin-Destination by Provincial Level

Based on the result of Logistics Survey, the cargo volume of each origin-destination pair on the trucks and railways was developed using the raw data obtained from a road side OD interview and railway statistics.

Table 4.5.3 Origin and Destination of Cargo Transport (ton/day)

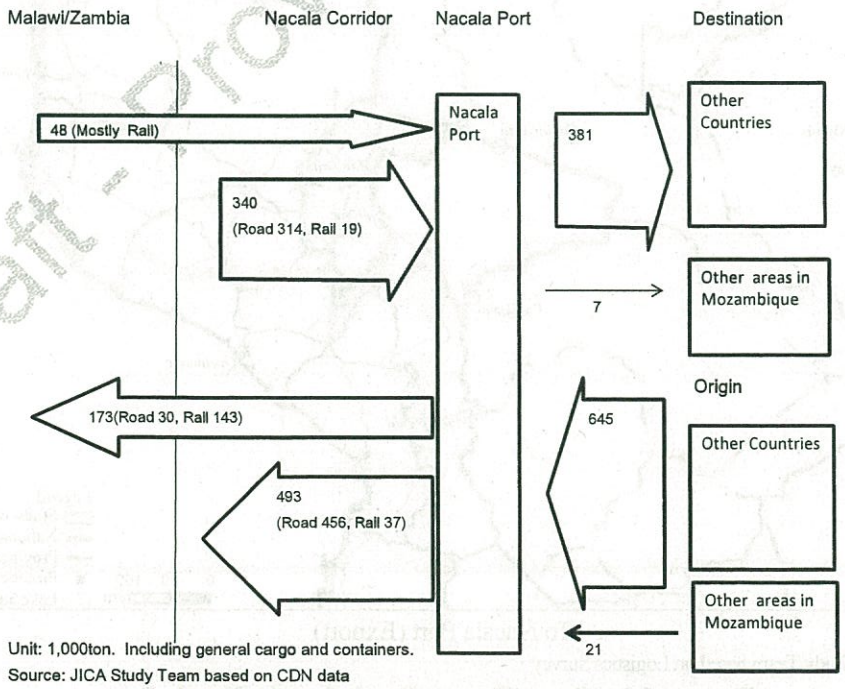
Origin \ Destination		01.Niassa			02.Cabo Delgado		03.Nampula			04.Zambezia		05.Tete	06. Manica	07.Sofala		08. Maputo	09.Other Mozam	10. Tanzania	11. Malawi	12. Zambia	13.Zimbabwe	14.South Africa	Total
		Lichinga City	Cuamba District	Other Niassa	Pemba Port	Other Cabo Delgado	Nampula City	Nacala Port	Other Nampula	Quelimane Pt. & City	Other Zambezia			Beira Pt.	Other Sofala								
01.Niassa	Lichinga City		364	146		783	66	188	65		17		24	243		300							2,195
	Cuamba District	370	211	713			112	90	90	20	81	429		20		76			59			15	2,287
	Other Niassa	273	975	117		271	187		51	1	4	304		46		100							2,330
02.Cabo Delgado	Pemba Port					104	36																141
	Other Cabo Delgado	911		60	194	8,204	179	2,058	888	18		1				223							12,736
03.Nampula	Nampula City	140	49	211		2,010	261	2,987	599	819	514	285	114	157	58	196		75	3				8,479
	Nacala Port	265	90	98		565	4,825	676	2,047	207	514	241	24	454	58	596		1	510			22	11,191
	Other Nampula	938	312	142		5,937	5,076	5,052	3,139	1,275	1,139	709	173	195	34	601			90		27	84	24,924
04.Zambezia	Quelimane Pt. & City	7		12		188	409	115			470	212	12	505	212	51			687	12		6	2,900
	Other Zambezia	37	3	47		80	345	1,234	75	6,604	233	128	249	746		54			64				9,898
05.Tete			102				69	18		41		829	677	9,357	728	983			113	46	953	861	14,776
06.Manica		160	37	183		85	99	379	12	24		581	115	2,083					33		151		3,942
07.Sofala	Beira Pt.	88	16	30		125	474	293		1,001	109	2,614	1,098	582	472	502	57		19,493	12,516	8,832		48,292
	Other Sofala						194	181		43	2	528	239	3,545	455		115		505	45			5,853
08.Maputo		444	57	13		772	918	533	146	444	112	756		281	380				14		46		4,916
09.Other Mozambique		10					18	11		24		51		1,360	69								1,544
10.Tanzania							36	3	10	9													58
11.Malawi			197			108	56	290	37	142	21			13,079	445	14	1		159		3,324	4,477	22,349
12.Zambia														4,476							491	394	5,362
13.Zimbabwe										125		236	43	5,248					972	49			6,673
14.South Africa						465	77	90	150			598		212					2,810		83		4,485
Total		3,643	2,413	1,772	194	19,697	13,435	14,198	7,308	10,799	3,208	8,502	2,768	42,592	2,912	3,695	173	76	25,513	12,667	13,907	5,860	195,332

Note: Road+Railway; Road Only; No link in the study area

Source: JICA Study Team based on Logistics Survey

(3) Cargo Flow from/ to Ports

The figure below illustrates the basic cargo flow through Nacala Port.

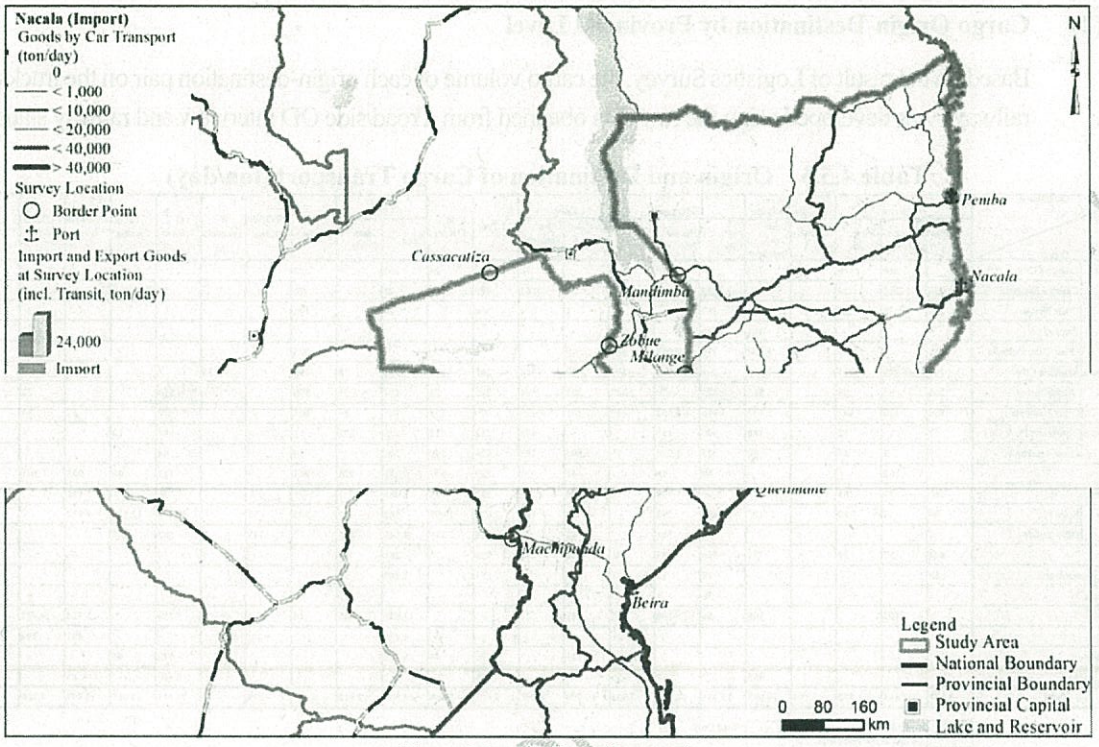


Unit: 1,000ton. Including general cargo and containers.

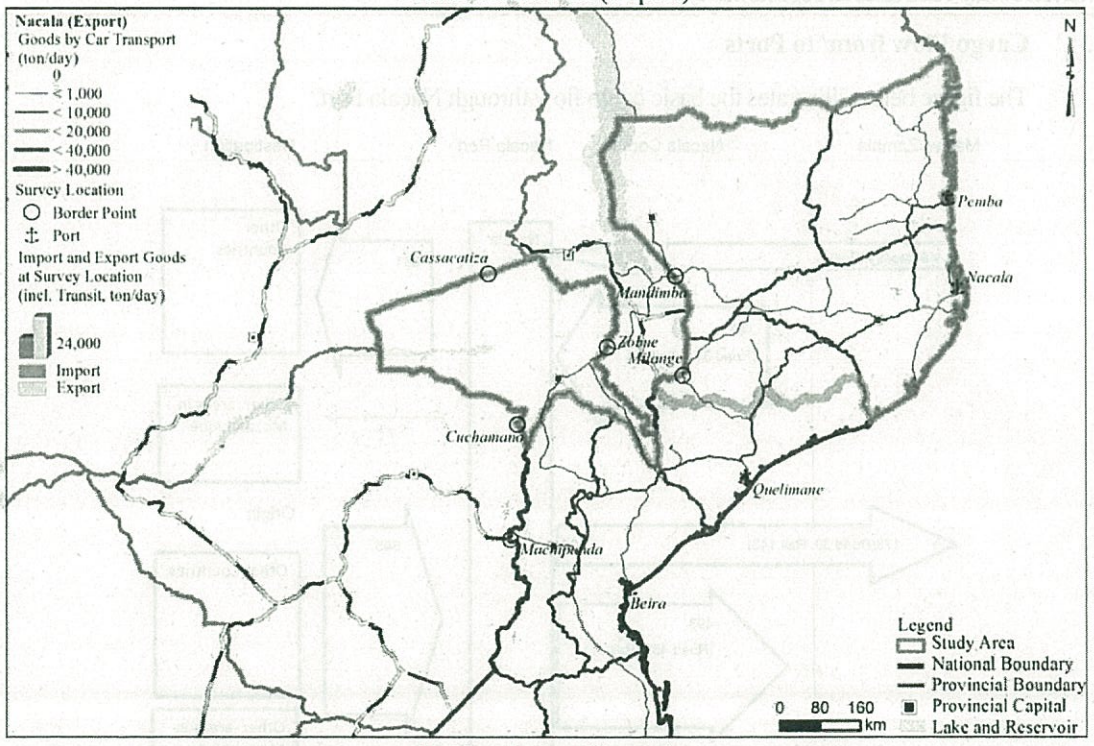
Source: JICA Study Team based on CDN data

Figure 4.5.2 Cargo Flow Through Nacala Port

Although the Nacala Corridor Region has both roads and railways, the shippers' mode preference is strongly prevalent. Transit cargo shippers prefer railways to roads and 86% is carried by railway. On the contrary, domestic cargo shippers prefer roads to railway and only 7% is carried by railway.



From Nacala Port (Import)



To Nacala Port (Export)

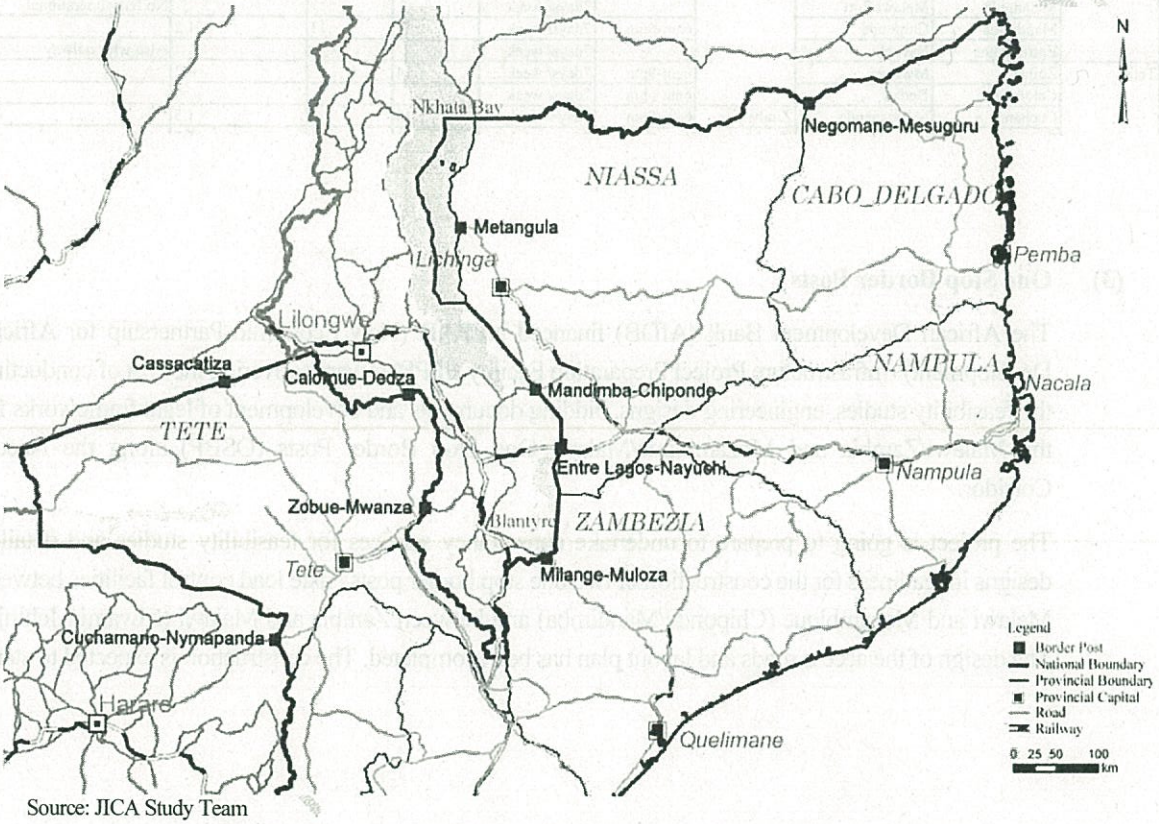
Source: JICA Study Team based on Logistics Survey

Figure 4.5.3 Cargo Flow on Roads from/to Nacala Port

The figure above shows that Nacala Port is collecting and distributing goods to most parts of the Nacala Corridor Region. The farthest area of service reaches to Sofala and Manica Provinces. The volume of the cargo on the roads in general is lower than the cargo flow from and to Beira Port as shown below.

4.5.5 Customs Operations and Border Facilities

The Nacala Corridor has several border posts with adjacent countries (Figure 4.5.4). Basically, the immigration and customs divisions each have an office and the transporter is required to have their documentation processed at least twice in each country. Vehicles are required to obtain temporary export and import permission.



Source: JICA Study Team

Figure 4.5.4 Major Border Posts in the Nacala Corridor Region

The customs operations at land borders are quite different from those at ports. The customs offices at the border posts in the Nacala Corridor Region are mostly housed within one room in the immigration office. However, they perform all the functions of customs processing including payment.

(1) Customs Operation Hours

Land borders are open for a limited time of the day. Many land borders in the Nacala Corridor Region are open from 6 am to 6 pm. Logistics operators should consider the border crossing time to fit the hours. Many of the customs offices in the Nacala Corridor Region have only one customs officer on duty and are not operational at lunch time. It is necessary to operate continually during the operational hours.

(2) Customs Passing Hours

Most of the transport operators apply to customs for clearance on site. This means that there is quite a high risk to increase the passing time. Table 4.5.4 shows the passing time for each customs post.

Because a reduction in processing time is important to facilitate logistics, one of the solutions is to stop at one location to process the documentation for both countries at the same time. OSBP (One Stop Border Post) is a facility housing both countries' border control agencies in one building.

Table 4.5.4 Land Border Posts and Average Customs Passing Hours

Province	Mozambican Side	Foreign Side	Foreign Country	Open Hours	Open Days	Number of Staff		Average Passing Time for Cargo Truck (hr)	Note
						Mozam-bican Side	Foreign Side		
Cabo Delgado	Namuiranga	Mwambo	Tanzania		7days/ week				Via Rovuma River. No public ferry.
	Negomane	Mesuguru			7days/ week				Unity Bridge
Niassa	Cobue	Malawi Port	Malawi		7days/ week				Via Lake Niassa
	Metangula	Malawi Port			7days/ week				No ferry operational
	Mandimba	Chiponde		6am-6pm	7days/ week	13	13	1.2	
	Entre Lagos	Nayuchi			7days/ week				Also with railway
Tete	Zobue	Mwanza		6am-9pm	7days/ week	14		0.3	
	Calomue	Dedza		6am-6pm	7days/ week				
	Cuchamano	Nyamapanda	Zimbabwe	6am-8pm	7days/ week	13		1.5	

(3) One Stop Border Posts

The African Development Bank (AfDB) financed NEPAD (New Economic Partnership for African Development) -Infrastructure Project Preparation Facility (IPPF) towards covering the cost of conducting the feasibility studies, engineering designs, bidding documents and development of legal frameworks for the Malawi/Zambia and Mozambique/Malawi One Stop Border Posts (OSBP) along the Nacala Corridor.

The project is going to prepare to undertake consultancy services for feasibility studies and detailed designs in readiness for the construction of two one stop border posts / axle load control facilities between Malawi and Mozambique (Chiponde/Mandimba) and between Zambia and Malawi (Mwami/Mchinji). The design of the access roads and layout plan has been completed. The construction is expected to start.

4.6 Tourism Sector

4.6.1 Existing Conditions of Tourism Sector

(1) Tourist Arrivals

International visitor arrivals increased from 1.1 million persons in 2006 to 1.8 million in 2010. It exceeded 2.0 million in 2011. The international visitor arrivals nearly doubled in 5 years. The number of holiday tourists is also increasing. It has increased from 220 thousand persons in 2006 to 1.1 million in 2010. The number of visitors for other purposes such as conferences and business and visiting relatives and friends, on the other hand, has remained almost constant in recent years. A half of the international visitors came from South Africa. Malawi and Zimbabwe were in the 2nd and 3rd positions. Western countries such as UK, USA, Switzerland, Portugal and Germany followed. The numbers of international guest arrivals and international guest bed nights, which are recorded at accommodations, have also increased in recent years, though at lower rates. 9.3% and 9.9 % of the international guest arrivals and international guest bed arrivals in 2011 as shown below. Cabo Delgado was the first in international guest arrivals accounting for 39% of the five provinces related to the Nacala Corridor Region, followed by Tete at 24%. In terms of international guest bed nights, however, the position reversed with Tete in the first place accounting for 37% and Cabo Delgado accounting for 30%. The number of foreign guest bed nights in Tete increased by more than 5 times between 2006 and 2011. Those visiting Tete are fewer, but stay longer. Foreign personnel working for the coal project must have been the greatest factor. The proportion of the five provinces related to the Nacala Corridor Region in domestic guest arrivals and domestic guest bed nights are higher at 24% and 20% respectively.

Table 4.6.1 International/ Domestic Guest Arrival and Guest Bed Night in the Five Provinces related to the Nacala Corridor Region and Mozambique

Area	International Guest Arrival	International Guest Bed Night	Domestic Guest Arrival	Domestic Guest Bed Night
Total of Five Provinces in Nacala Corridor Region	25,979	57,268	66,693	125,804
	9.3%	*9.9%*	*24.0%*	*20.4%*
Total of Other Provinces	252,254	522,081	211,063	489,928
Mozambique	278,233	579,349	277,756	615,732

Source: National Institute of Statistics (INE)

(2) Accommodations

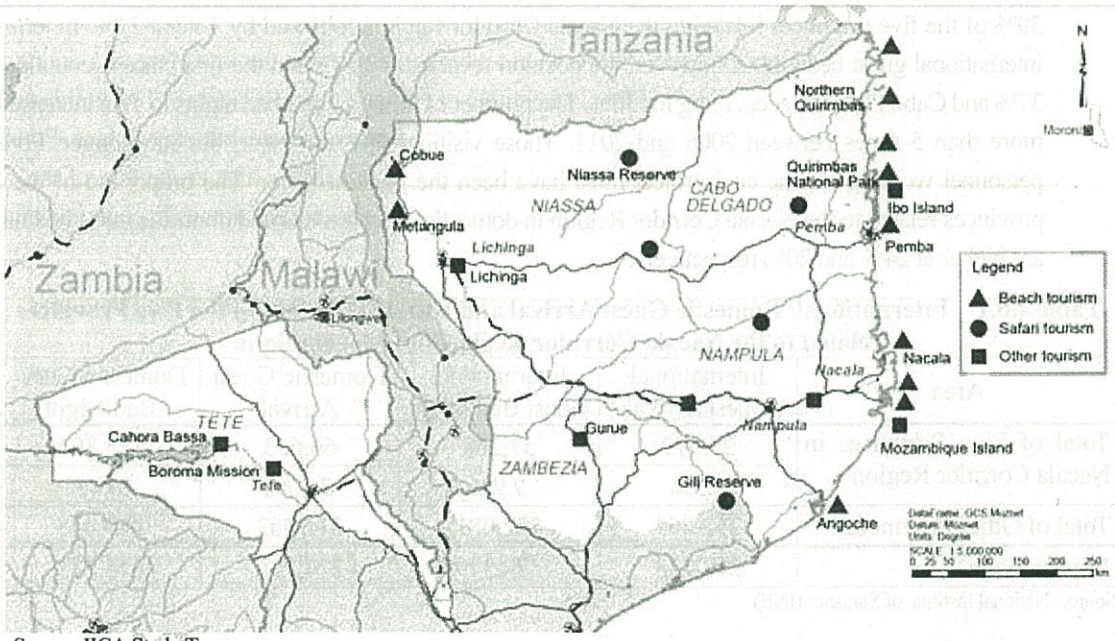
The number of accommodations in Mozambique more than doubled from 17,740 in 2006 to 37,550 in 2010, an increase of 24% per year. The number of rooms in the five provinces related to the Nacala Corridor Region were 2,083 rooms in Nampula Province, 1,020 rooms in Niassa Province, 1,360 rooms in Tete Province and 1,330 rooms in Zambézia Province. No data have been made available for Cabo Delgado Province. The proportions by grade are 18% for 5-star and 4-star combined, 18% for 3-star, 25% for 2-star and 39% for 1-star. The Tourism Development Authority (INATUR) is responsible for giving grades to hotels.

(3) Tourism Resources and Products

Major tourism resources in the Nacala Corridor Region are summarized in the following table.

Table 4.6.2 Major Tourist Resources in the Nacala Corridor Region

Province	Beach	Safari	Others
Nampula	Nacala Crusse & Jamail, Mossuril Angoche	Nampula-Montepuéz	Mozambique Island (history & culture) Ancient cave paintings in a number of districts
Cabo Delcado	Pemba Northern Quirimbas Southern Quirimbas	Quirimbas National Park	Ibo Island (history & culture)
Niassa	Lake Niassa (Metangula, Cóbuè)	Niassa Reserve	Lichinga (highland resort, camping)
Tete	-	-	Cahora Bassa (fishing, camping) Boroma Mission (history & culture)
[illegible]		[illegible]	Gurué (highland resort,



Source: JICA Study Team

Figure 4.6.1 Distribution of Tourism Resources in the Nacala Corridor Region

4.6.2 Policies and Plans for Tourism Development

The main tourism development policy papers for Mozambique are the "National Tourism Policy and Strategies" approved in 1995, "Tourism Policy and Implementation Strategies" approved in 2003 and "Strategic Plan for Development of Tourism in Mozambique (2004-13)" approved in 2004. The Ministry of Tourism (MITUR) was established in 2000.

The Strategic Plan for Development of Tourism in Mozambique 2004-13 ("the Strategies" hereafter") designated 18 areas as ""Priority Areas for Tourism Investment (PATI)" in order to promote investment in the tourism sector. They include 8 PATIs in the Nacala Corridor Region: Mozambique Island and Nacala Zone in Nampula Province, Pemba and Quirimbas Zone and Northern Cabo Delgado Zone in Cabo

Delgado Province, Lake Niassa Zone and Niassa Reserve Zone in Niassa Province, Cahora Bassa Zone in Tete Province and Gilé and Pebane Zone and Gurué Zone in Zambézia Province.

Arco Norte Project, completed in May 2010 with the assistance of USAID, prepared a tourism development master plan for the northern three provinces of Niassa, Nampula and Cabo Delgado in preparation for investment attraction. It prioritized the source markets as: (primary priority) South Africa, Portugal, Mozambique domestic, UK, Italy, France (secondary priority) Brazil, Germany, China, India, the Middle East, Netherlands, Spain and USA (future possibility) general routing and backpacking, mainly an extension of South Africa for European and South African over lander-backpackers, short/power breaks, cruises, charter holidays, mid-size meetings, conferences and events.

The Ministry of Tourism (MITUR) designated 7 Tourism Interest Zones (TIZ) in December 2010, the Strategies, Arco Norte Master Plan and anchor projects in PATIs. Out of the 7 TIZs, six sites are located in the Nacala Corridor Region as shown below.

Table 4.6.3 Tourism Interest Zones (TIZ) in the Nacala Corridor Region

Province	Name of Place	Area (ha)
Niassa	Lichinga	100
	Metangula (Chiuanga Beach)	80
Cabo Delgado	Pemba Peninsula	1,081
	Pemba Bay	1,400
Nampula	Lumbo and Mozambique Island	1,087
	Matibane and Crusse and Jamail Islands	1,750

Source: Ministry Decree on Tourism Zones, December 2010

TIZs are to be managed by a TIZ management company in a manner similar to the management of industrial parks. TIZ sites are designated for tourism development purposes both by the central government and local governments. Investment approval procedures, therefore, would be swift and smooth, which is a major advantage for potential private investors.

All the five provinces in the five provinces related to the Nacala Corridor Region have prepared their own tourism development plans.

The SADC region adopted the TFCA (Trans Frontier Conservation Areas) as a development option, to strengthen cross border management of natural resources for better conservation of biodiversity, improved livelihood of local communities and upgrading the SADC tourist destinations to green tourist destinations. TFCAs in the Nacala Corridor Region are Niassa- Selous on the Mozambique and Tanzania border and Liwonde-Lichinga on the Mozambique and Malawi border. Both of them are at the conceptual level.

4.7 Investment Promotion

4.7.1 Existing Conditions of Investment Promotion

(1) Investment Trend

Investments in Mozambique increased dramatically from the total investment of US$ 485million in 2005 to US$ 2,853million in 2011, an increase of 488%. An increase in the investments in the Nacala Corridor Region in the same period was even higher at 625%. Investments show a large fluctuation reflecting the situation of some huge investments in particular sectors. In 2010, for example, there was one project of US$1.9 billion in the energy sector. This project affected the trend shown below with the share of the five provinces related to the Nacala Corridor at an exceptionally high level of 74% in 2010.

Table 4.7.1 Amount of Investment in the Five Provinces related to the Nacala Corridor Region

	(million US$)	(million US$)	US$)	US$)	(persons)
Five Provinces in Nacala Corridor Region					
2005	14	8	65	87	2,603
2010	121	593	1,586	2,295	7,150
2011	207	35	392	633	6,200
Mozambique					
2005	165	36	284	485	15,133
2010	578	649	1,862	3,090	28,245
2011	974	229	1,648	2,853	33,871
Share of Five Provinces					
2005	8.6	22.1	23.0	18.0	17.2
2010	20.9	91.4	85.0	74.3	25.3
2011	21.3	15.3	23.8	22.2	18.3

Source: Investment Promotion Centre (CPI)

Some tendencies of the investments include the energy sector generating little employment compared to its huge amount of investment and the investment in 2011 was more capital intensive compared to the investment in 2005 as proved by the investment amount per employee increasing from 32 thousand US$ per person in 2005 to 84 thousand US$ in 2011.

Table 4.7.2 shows the amounts of approved investments in the five provinces related to the Nacala Corridor. Niassa Province and Zambezia Province have been increasing the investment amount steadily. Big fluctuations are observed in Cabo Delgado Province and Tete Province. The investments in Nampula Province have been decreasing.

Table 4.7.2 Amount of Investments Approved in the Five Provinces related to the Nacala Corridor Region

Province	2005	2010	2011
(In million US$)			
Cabo Delgado	14	108	10
Niassa	7	11	50
Nampula	37	30	19
Zamebzia	26	64	129
Tete	4	2,082	424
Total	*88*	*2,295*	*632*
(in %)			
Cabo Delgado	15.9	4.7	1.6
Niassa	8.0	0.5	7.9
Nampula	42.0	1.3	3.0
Zamebzia	29.5	2.8	20.4
Tete	4.5	90.7	67.1
Total	*100.0*	*100.0*	*100.0*

Source: JICA Study Team based on Investment Promotion Centre (CPI)

China, South Africa and Portugal were the three leading countries of origin for investment in 2011, accounting for 32%, 26% and 11 % each of the total foreign direct investment amount.

4.7.2 Laws and Incentive Measures on Investment Promotion

Laws related with investment promotion include the following three laws:

- Law on Investment (Law No. 3/93of 24th June) enacted in 1993: Law on investment promotion
- Regulation of the Investment Law (Decree No. 43/2009 of 21st August) enacted in 2009: Regulation on Special Economic Zone (SEZ)
- Code of Fiscal Benefit (Law No. 4/2009) enacted in 2009: Basic law on corporate income tax

The Law on Investment Promotion specifies a number of conditions for foreign direct investment. They determine not only basic conditions of investments, such as protection of property rights and remittance of funds abroad, but also the conditions of incentives, including minimum amount of investment, annual sales value, export value, employment of local people, qualifications required for foreign workers and duration of the incentive period.

There are two types of investment promotion zones: Industrial Free Zone (IFZ) and Special Economic Zones (SEZ). According to the Law of Investments (Law No.3/93), an IFZs is the area set aside exclusively for export production, whereas a Special Economic Zone (SEZ) is for general economic activity. Enterprises located in either an SEZ or IFZ are able to enjoy incentives like tax exemptions. An SEZ is a certain area designated by a boundary, but it usually does not have fences, where industries producing both domestic and export products can be located. An IFZ is an enclosed area and has a customs office there. The industries located in an IFZ must export more than 70% of their products. There is a category called "Isolated Free Zone enterprises". Under this regulation, an enterprise can hold IFZ status with lower incentive provided if they are approved.[5] Mozal is the only enterprise in operation with IFZ status. Nacala SEZ is the first SEZ in Mozambique, which was established in 2007 covering Nacala Porto Municipality and Nacala-a-Velha District with an area of 1,539 km^2.

Main benefits of these zones are shown in the Table below.

[5] Regulation of the Investment Law, Decree No.43/2009.

Table 4.7.3 Benefits of Investment Promotion Zones

	Industrial Free Zones		Special Economic Zones	
	Developers	Enterprises	Developers	Enterprises
Customs Duty and Value Added Tax Exemption (VAT is on both the import and on internal acquisitions)	Import of construction materials, machinery, equipment, accompanying spare and accessory parts and other goods used in the carrying out of the licenced IFZ activity	Import of goods and merchandise to be used in the implementation of projects and exploration of activities which have been authorized under the terms of the IFZ Regulations.	Import of construction materials, machinery, equipment, accompanying spare and accessory parts and other goods used in the carrying out of the licenced SEZ activity.	
Corporate Income Tax	a) exemption (first 10 years) b) 50% reduction (11th-15th years) c) 25% reduction (remaining life of the		a) exemption (first 5 years) b) 50% reduction(6th-10th year)	a) exemption (first 3 years) b) 50% reduction (4th-10th year)

August), Code of Fiscal Benefit (Law No.4/2009, 12th January)

4.7.3 Investment Climate

"Doing Business in 2014" published by the World Bank evaluated the investment attractiveness of Mozambique at 139 out of 189 countries, 7 ranks up from 146 in 2013, but 7 ranks down from 132 in 2011. The biggest reason for the decline was the increased difficulty in electricity connections: requirement of authorization for a connection by the Ministry of Energy. Although generally the indicators worsen from 2008 to 2014, it should be noted that "Protecting Investors" is good at 52th out of 189 countries, and "Starting Business" has raised its rank from 125th in 2008 up to 95th in 2014. The "Enterprise Survey 2007" conducted by the International Finance Corporation (IFC) listed the following as the five largest obstacles to investment: "informal competition", "limited access to finance", "tax rate", "crime, theft, uneasiness" and "transportation".

Table 4.7.4 Trend of "Doing Business" Indicators of Mozambique (Unit: Rank)

	2008	2009	2011	2012	2013	2014
Starting a Business	125	144	64	70	96	95
Dealing with Construction Permits	147	153	129	126	135	77
Employing Workers	162	161	-	-	-	-
Getting Electricity	-	-	159	172	174	171
Registering Property	126	149	150	156	155	152
Getting Credit	97	123	130	150	129	130
Protecting Investors	33	38	44	46	49	52
Paying Taxes	72	88	104	107	105	129
Trading across Border	140	140	133	136	134	131
Enforcing Contracts	138	124	131	131	132	145
Closing Business	134	133	134	143	147	155

Source: 2008, 2009: Econex[7] "Research Note 10, April 2009" based on the data from the World Bank
2011: The World Bank "Doing Business 2012", 2013: The World Bank "Doing Business 2013",
2014: The World Bank "Doing Business 2014"

[6] In case of "Isolated Free Zone enterprises", the conditions are; first 5 years, 6th-10th years, and remaining life of the project respectively.

[7] Econox is an economic consultancy established in 2005. The head office of the company is located in Stellenbosch. (http://www.econex.co.za/)

4.7.4 Organisations related with Investment Promotion

There are two main governmental organisations in charge of investment promotion; the Investment Promotion Centre (*Centro de Promoção de Investimentos*: CPI) and the Special Economic Zones Office (*Gabinete das Zonas Económicas de Desenvolvimento Acelerado*: GAZEDA).

(1) Investment Promotion Centre (CPI)

CPI is one of the attached agencies under the Ministry of Planning and Development (MPD). The mission of CPI is to: "attract and retain substantial direct domestic and foreign investment to boost economic growth and wealth creation, including the promotion of public-private partnerships for economic and infrastructure development in order to foster inclusive social and economic development in Mozambique". Investments in mineral resources are not the responsibility of CPI but that of the Ministry of Mineral Resources (*Ministério dos Recursos Minerais*: MIREM). CPI has its headquarters in Maputo with following five departments: 1) Project Management Service; 2) Information and Marketing Services; 3) Business Development Service; 4) Linkage Service and 5) Administration and Human Resources Services; and one delegation office in each province of Mozambique. The total number of employees in Mozambique is 48 including management personnel and other officers. In addition, CPI is planning to open overseas branch offices in China, Brazil, Saudi Arabia or UAE in the Middle East, and South Africa; and they are expected to be operational from 2015.

(2) Special Economic Zones Office (GAZEDA)

GAZEDA is another agency attached to MPD that was established on the 8th of December 2007. The mission of GAZEDA is to promote and coordinate activities related to the establishment, development and management of Special Economic Zones (SEZ) and Free Industrial Zones (IFZ). GAZEDA employs 47 personnel including management. As of May 2013, GAZEDA was managing one IFZ in Maputo Province called the Beluluane Industrial Free Zone and one SEZ in Nampula Province called the Nacala Special Economic Zone (Nacala SEZ).

In this sense, GAZEDA is not simply another government agency for investment promotion in addition to CPI, but GAZEDA is the agency for preparing the conditions (physical, institutional and social conditions) to accommodate incoming investments for actual business operation including industrial production.

4.7.5 Nacala Special Economic Zone

There have been 68 projects approved by GAZEDA since 2009 as shown below. Those already in operation are 25 out of the 68.

Table 4.7.5 Number of Projects Approved for Nacala SEZ

Year	Number of Projects	Total Inestment Value (US$ million)	Number of Local workers
2009	11	151	4,679
2010	22	218	2,944
2011	8	132	445
2012	27	1,077	6,260
Total	68	1,578	14,328

Source: JICA Study Team based on GAZEDA Nacala SEZ Delegation Office

Service is the largest sector of investment accounting for 51%, followed by manufacturing (28%) and construction (12%). Brazil is the top country of origin accounting for 43%, followed by Portugal (5.1%) and Tanzania (3.8%).

A questionnaire survey was conducted targeting the companies located in Nacala SEZ in April 2013 (40%), advantages of SEZ (45%) and closeness to markets (35%). It seems Nacala SEZ is offering an attractive opportunity to investors in different ways. Those who think of Nacala as competitive were 12 (7 "fairly competitive" and 5 "competitive") out of 15. GAZEDA's performance was judged favourably with "excellent" and "good" combined accounting for 55% for efficiency and speed in the investment application process and 59% for efficiency in responding to requests and inquiries. Some problems were also pointed out. In terms of infrastructure, water was cited by 15 companies (71%) as a problem, followed by electricity (62%), solid waste (62%), roads (52%), sewerage (52%) and telecommunication (48%). Another problem was the quality of the labour force. The companies which judged labour force as "terrible" and "bad" were 2 and 9, both of which combined account for 58%. The residential environment and the law and order situation was evaluated as either "terrible" or "bad" by 47% and 53% respectively.