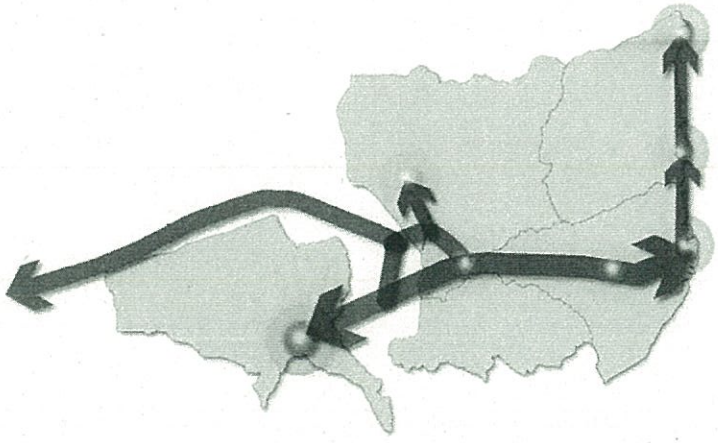
資料 1-1

Minitsry of Planning and Development (MPD)
Japan International Coorperation Agency (JICA)

THE PROJECT
FOR

NACALA CORRIDOR

ECONOMIC DEVELOPMENT STRATEGIES
IN
THE REPUBLIC OF MOZAMBIQUE



PEDEC-NACALA

Draft PEDEC Strategies Report – Version 3 –
Summary

July 2014

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LIST OF ABBREVIATION

AfDB ····· African Development Bank
AIAS ····· Management Infrastructure for Water Supply and Sanitation
ANE ····· National Road Administration
ARA-CN····· Regional Water Management Administration Central North
ARA-N····· Regional Water Management Administration North
ARA-Z ····· Regional Water Management Administration Zambeze
ASNANI····· Integrated Water Supply and Sanitation Project for Niassa and Nampula
AusAid····· Australian Agency for International Development
CDN ····· Northern Development Corridor
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
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
DNA····· National Water Directorate
DNTF ····· National Directorate of Land and Forestry
DPOT ····· Department of Territorial Planning
DUAT ····· (The rights to use and profit from the land)
EDM····· Mozambique Electricity Company
EIA ····· Environmental Impact Assessment
EL····· Earth Level
EMP ····· Environmental Management Plan
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
FIPAG····· Water Supply Investment and Assets Fund
FS····· Feasibility Study
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
ICD ····· Inland Container Depots
ICT ····· Information and Communication Technology
TCR ····· Inception Report
IFAD ····· International Fund for Agricultural Development
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
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
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
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 (or ENDE)
····· National Development Strategy
NEDO····· New Energy and Industrial Technology Development Organization
NEPAD ····· New Economic Partnership for African Development
NER····· Net Enrolment Rate
NGN ····· Next Generation Network
NGO ····· Non-Government Organization
NRW····· Non-Revenue Water
OD····· Origin-Destination

OJT ····· On the Job Training
OSBP····· One Stop Border Post
PARP ····· Poverty Reduction Action Plan
PATI ····· Priority Areas for Tourism Investment
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
PR····· Progress Report
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
RE
ROW ····· Right of Way
RSA-DTI ···· Department of Trade and Industry of South Africa
RSDIP····· Regional Spatial development Initiative Program
RSS ····· Road Sector Strategies
SADC ····· South African Development Community
SADCC ····· Soil and Water Conservation and Land Utilization Programme
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
SEA ····· Strategic Environmental Assessment
SEZ····· Special Economic Zone
SME····· Small and Medium-Sized Enterprises
SPGC ····· Provincial Service of Geography and Cadastral
SVC ····· Static VAR(Volt-ampere ractive) Compensators
TDM ····· Telecommunications of Mozambique
TEU ····· Twenty Foot Equivalent Unit
TFCA ····· Trans Frontier Conservation Areas
TIZ ····· Tourism Interest Zones
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 Organization
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 Organization
ZAE ····· Zonamento Agro-Eocologico National
ZMM-GT···· Zambia-Malawi-Mozambique Growth Triangle

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 realized 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 from people and businesses. Oceangoing liners to Asia visit Nacala Port. The hinterlands of Nacala Port have also begun to attract private investments partly due to the establishment of Nacala Special Economic Zone (SEZ) in December 2007. On the infrastructure side, road upgrade projects 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:

PEDEC concerns itself with sustainable development. PEDEC addresses the concept of "Sustainable Development for the Nacala Corridor Region" through the following multifaceted 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 transporting coal. Moreover, such negative impacts to the environment and societies might substantially jeopardise sustainability in that the mining operations could be reduced, suspended or terminated due to the negative environmental and social impacts.

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 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.

[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 result and process of the SEA for PEDEC-Nacala are not official. The methodology and process for SEA is shown in Chapter 21 in the Main Text of the Draft PEDEC Strategies Report.

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

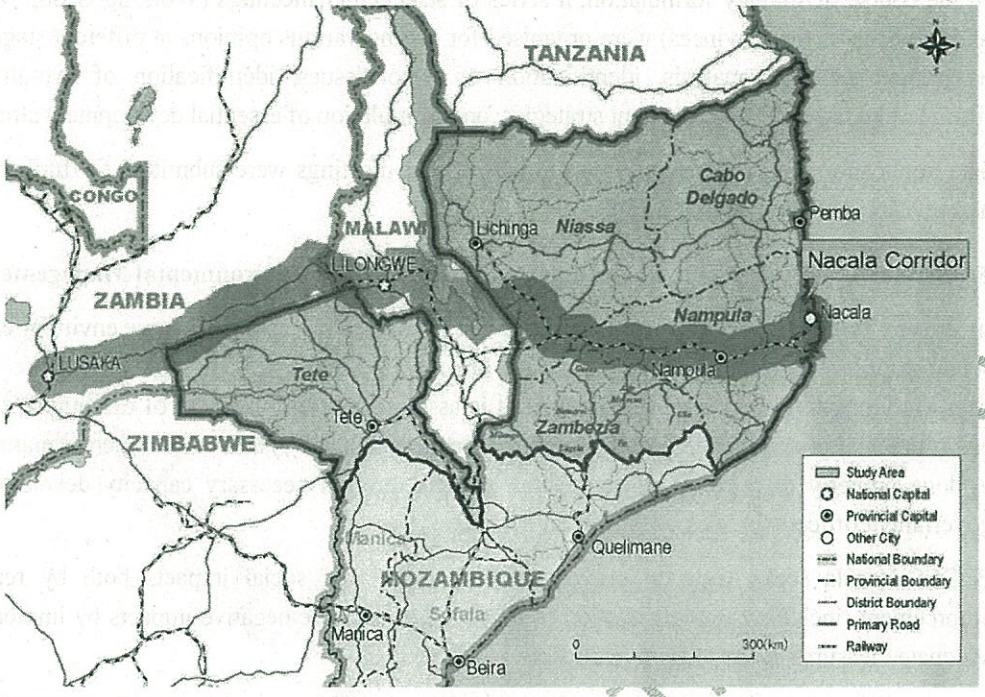
PEDEC-Nacala Study Team is aware of the difficulties of bringing benefits to vulnerable people and remote areas by encouraging them to take advantage of emerging development opportunities due to the corridor development and other economic sector development. Therefore, special attention was paid to such 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 1.1.

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

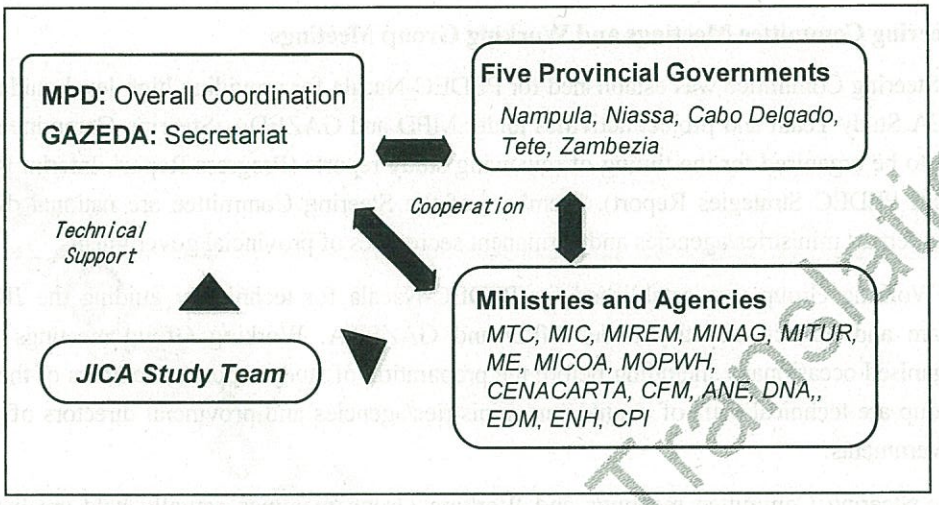
1.7 Project Framework and Organisations

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 Center 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 1.2 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 Programs/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 Programs/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 Group are technical staff of counterpart ministries/agencies and provincial directors of provincial governments.

The Steering Committee meetings and Working Group meetings actually held are listed in the 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 programs and projects.

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

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:

Part I:	Introduction
Part II:	Present Conditions
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 Assemssent
Appendix A:	Supporting Works
Appendix B:	Capacity Development Activities
Appendix C:	International Seminars

Chapter 2 Existing Conditions and Emerging Opportunities of Mozambique and the Nacala Corridor Region

2.1 Socioeconomy of Mozambique[2]

The economy of Mozambique has maintained a high growth with a real GDP annual growth rate of over 7% since 2004 except for years 2008 and 2009. In 2012, the real GDP growth rate was 7.4%. In 2013, it is expected to grow at 8.5%. This high economic growth took place due to increased foreign direct investment (FDI), public infrastructure development and credit expansion to private sectors. Despite this sustained high economic growth for the last decade, Mozambique's economy has not transformed itself much in terms of economic structure. As a result, Mozambique is still one of the least developed countries, although it got out from the world poorest status at the end of the civil war in 1992.

The GDP structure by broad sector in 2011 was 27% agriculture, 23% industry and 50% services. Agriculture and services grew steadily between 2000 and 2011 more or less in parallel with GDP growth, while industry grew more rapidly between 1995 and 2005. The expansion of the industry sector is attributable to the aluminium refining plant, which was constructed in the latter part of the 1990s.

The share of agriculture, livestock, hunting and forestry has slightly decreased from 34.5% in 1991 to 27% in 2011. The manufacturing sector and electricity & water supply sector, on the contrary, sharply grew during 1995–2005. The share increased from 10.7% in 1991 to 18.4% in 2011.

The mining sector contributed to the high economic growth in the recent years. The share of the mining sector in the GDP is expected to increase from 1.4% in 2011 to 2.9% in 2017.[3]

The population of Mozambique amounted to 20.63 million in 2007. It increased at the rate of about 2.5% per annum between 1997 and 2007. The GDP per capita increased from US $251 in 2000 to US $588 in 2011. The average annual growth rate of the real GDP per capita was high around 8.0% per year.

In terms of economically active population, the share of the agriculture sector is dominant although it decreased from 80.9% in 1997 to 75.2% in 2007. The shares of mining, manufacturing, energy, construction, commerce and finance, and other services increased from 1997 to 2007.

In terms of the balance of payment for the current account, the balances of trade and services have been negative since 1996 with a slight improvement in 2011. In the capital and financial accounts, a

[2] This section mostly depends on INE data unless otherwise stated.
[3] KPMG, 2013, Mozambique Country Mining Guide

surge in foreign direct investment was prominent, increasing from US $139 million in 2000 to US $2,093 million in 2011.

The poverty ratio based on consumption poverty declined significantly from 69% to 54% between 1997 and 2003, while the level of poverty in 2009 remained high and 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, and remained almost the same until 2009 (0.414).

In the past many years, Mozambique has had a chronic deficit in trade balance. As in recent years, the external trade turnover of Mozambique developed rapidly, the trade balance deficit become substantially large. The total external trade turnover reached US $5,807 million in 2010, consisting of US $2,243 million in export and US $3,564 million in import.

2.2 SWOT Analysis of Mozambique

For considering Mozambique's economic and social development, strengths (S) and weaknesses (W), external opportunities (O) and threats (T) are analysed and summarised in Table 2.1. These SWOT analysis results were based on those shown in the Draft National Development Strategy 2015-2035 of Mozambique, which is still under preparation by MPD.

The strengths (S) and weaknesses (W) are internal and inherent characteristics, while opportunities (O) and threats (T) are characteristics in response to external situational changes.

Table 2.1 SWOT Analysis for Mozambique

Strengths	Weaknesses
• Peace, stability and democracy • Natural resources with high potential • Hydroelectric power • Endowment of energy resources, such as natural gas, coal, biomass and others • Fertile farmland • Forests and wildlife • Beaches and other tourim resources • Availability of young and active labour • Good geographical location • Availability of technically accessible energy and water resources	• Low competitiveness and low productivity of capital • Deficit in trade balance • Low saving rates • Absence of development banks • Inadequate economic infrastructure • Endemic diseases • Weak capacity for coordination and implementation of policies and public services • Lack of national programmes for water resource development
Opportunities	**Threats**
• Development of agricultural markets and resource mobilisation for agricultural and industrial development • Increased demand for quality domestic firms • Inflow of foreign investments by multinational companies in the mining sector • Increased demand for tourism, especially eco-tourism, historical and cultural tourism • Technological development • Globalisation	• Macro-economic instability • External shock to (volatility of) commodity prices, interest rates and currency exchange rates • Vulnerability to natural disasters, such as floods, droughts and cyclones • Unfavourable position of financial sectors for credits for development, especially rural credits • Illegal migration • Capital flight from mineral resources sectors

Source: JICA Study Team based on the Draft NDS 2015-2035

2.3 Underdevelopment of the Nacala Corridor Region[4]

The Nacala Corridor Region has been underdeveloped in many ways, such as economy, infrastructure, poverty, literacy, school enrolment and health situation. This underdevelopment situation has been due to various reasons including low population density, remoteness, poor road conditions, high basic goods prices, high construction material prices and high transport costs and government budget shortage, as well as impacts of the prolonged civil war.

While the economy of the five provinces have been growing quickly since 2000 (7.2% per year on average), mainly led by the sectors of electricity and water, manufacturing, construction and transport and communication, the level of development is still far below the national average as indicated by the GRDP per capita of the Nacala Corridor Region at 63% of the national average in 2011.

In recent years, the extractive sector contributed to high economic growth in the Nacala Corridor Region. However, the regional economy is more dependent on agriculture than other provinces. In the five provinces, 85.2% (year 2007) of economically active populations and 40.8% (year 2010) of GRDP belong to the agriculture sector, as compared with 75.2% (year 2007) and 27.5% (year 2010), respectively, in Mozambique.

The road situation of the Nacala Corridor Region is characterised by unpaved roads, especially in Niassa, Cabo Delgado and Nampula Provinces. The percentage of paved roads out of the primary roads (in terms of length) in Niassa, Cabo Delgado and Nampula Provinces was 53%, while that of Mozambique was 76% in 2007.[5]

While the poverty situation improved substantially in Mozambique between 1996 and 2008, the poverty ratio of the provinces in the Nacala Corridor Region also reduced largely except for Zambezia Province.

However, it is noticeable that the illiteracy rates (68.6% on average) of the provinces in the Nacala Corridor Region remained very high compared with those of southern provinces (34.4% on average) in 2008, especially those of women.[6]

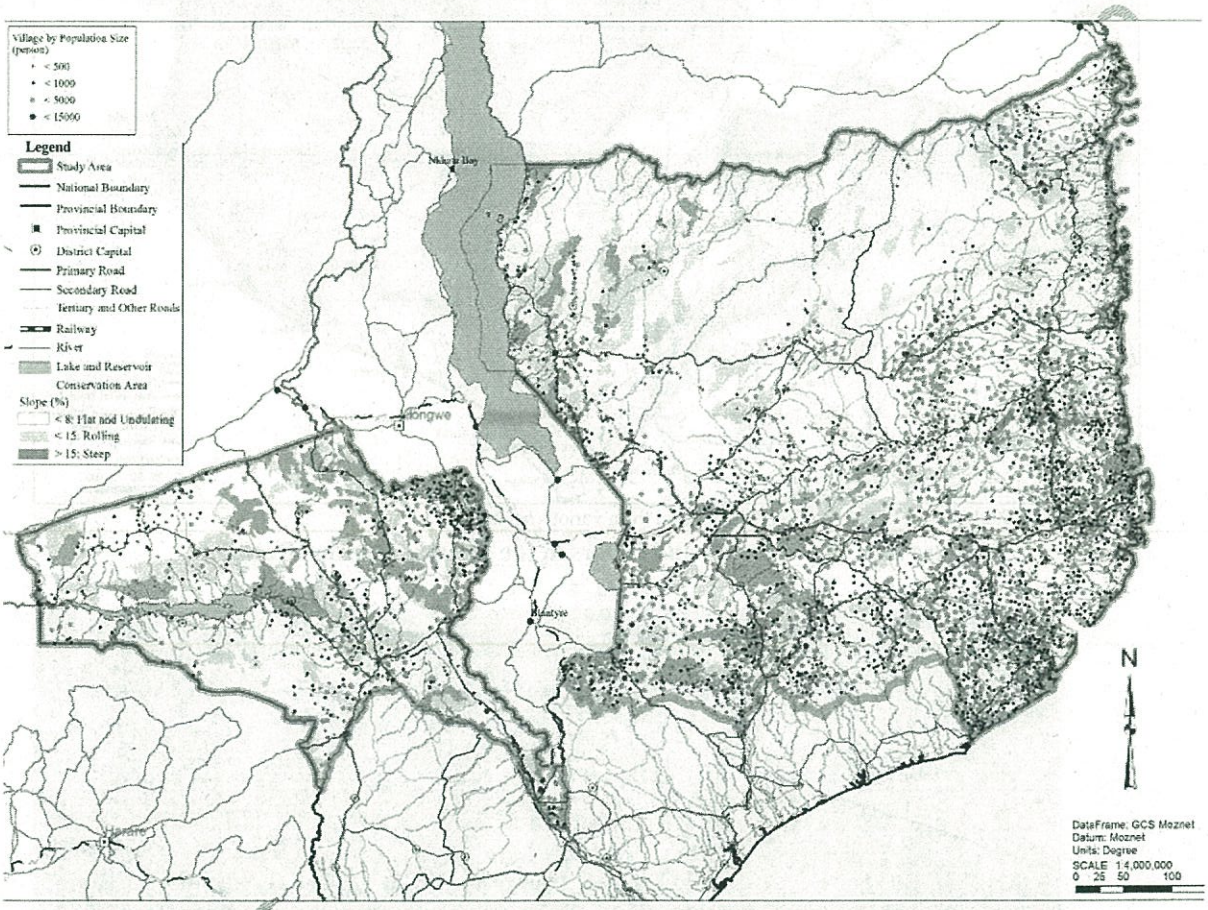
Similarly the general enrolment rates (GER) of secondary schools in the provinces of the Nacala Corridor Region are much lower than those of the other central and southern provinces in 2010, while GERs of primary schools in the Nacala Corridor were comparable to those of the other provinces. The average GER of secondary schools in the Nacala Corridor Region was 35.6%, while that of the other provinces was 60.9%.

The infant mortality rates[7] and under-5 mortality rates[8] in the provinces of the Nacala Corridor Region were much higher than the other provinces. The averages of infant mortality rates and under-5 mortality rates of the Nacala Corridor Region were 117.7 and 164.3, respectively, while

4 This section mostly depends on INE data unless otherwise stated.
5 RSS 2007-2011 Final Report
6 MICS 2008
7 Infant mortality rate (IMR) is the number of deaths of children less than one year of age per 1000 live births.
8 Under-5 mortality rate (U5MR) is the number of deaths of children less than five years of age per 1,000 live births.

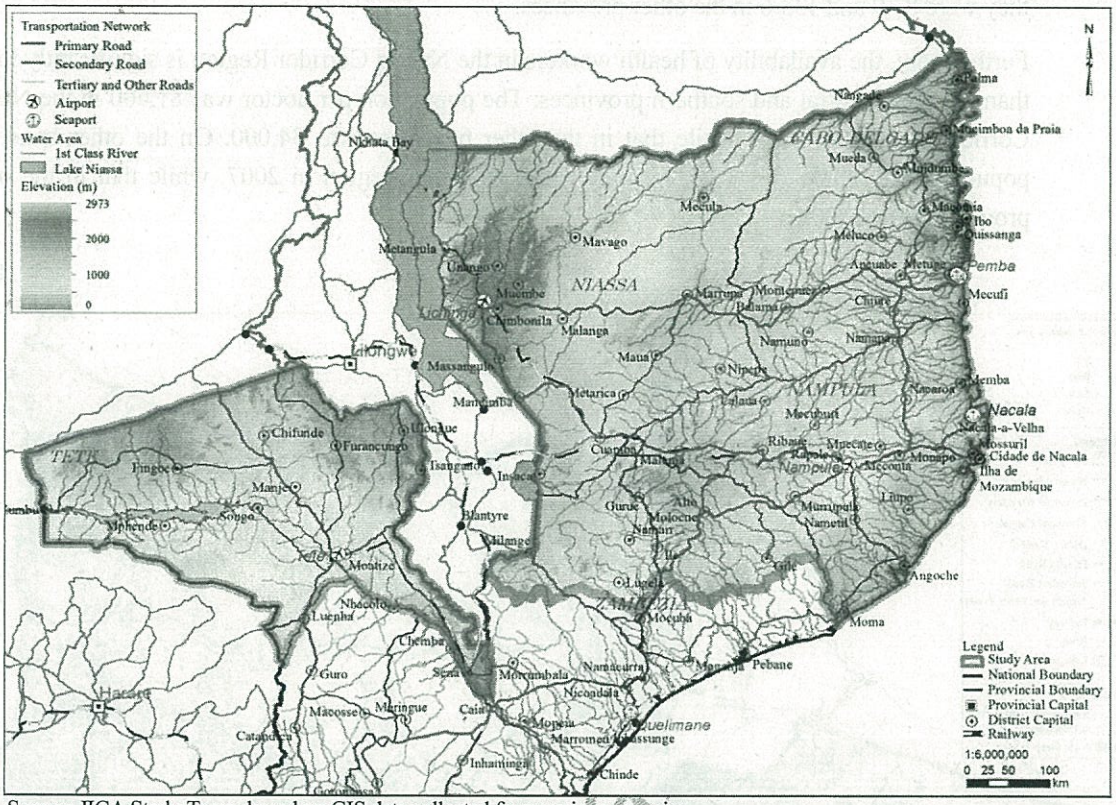
they were 81.9 and 133.6 in the other provinces.

Furthermore, the availability of health workers in the Nacala Corridor Region is significantly lower than the other central and southern provinces. The population per doctor was 81,000 in the Nacala Corridor Region in 2007, while that in the other provinces was 34,000. On the other hand, the population per nurse was 4,900 in the Nacala Corridor Region in 2007, while that in the other provinces was 4,200.



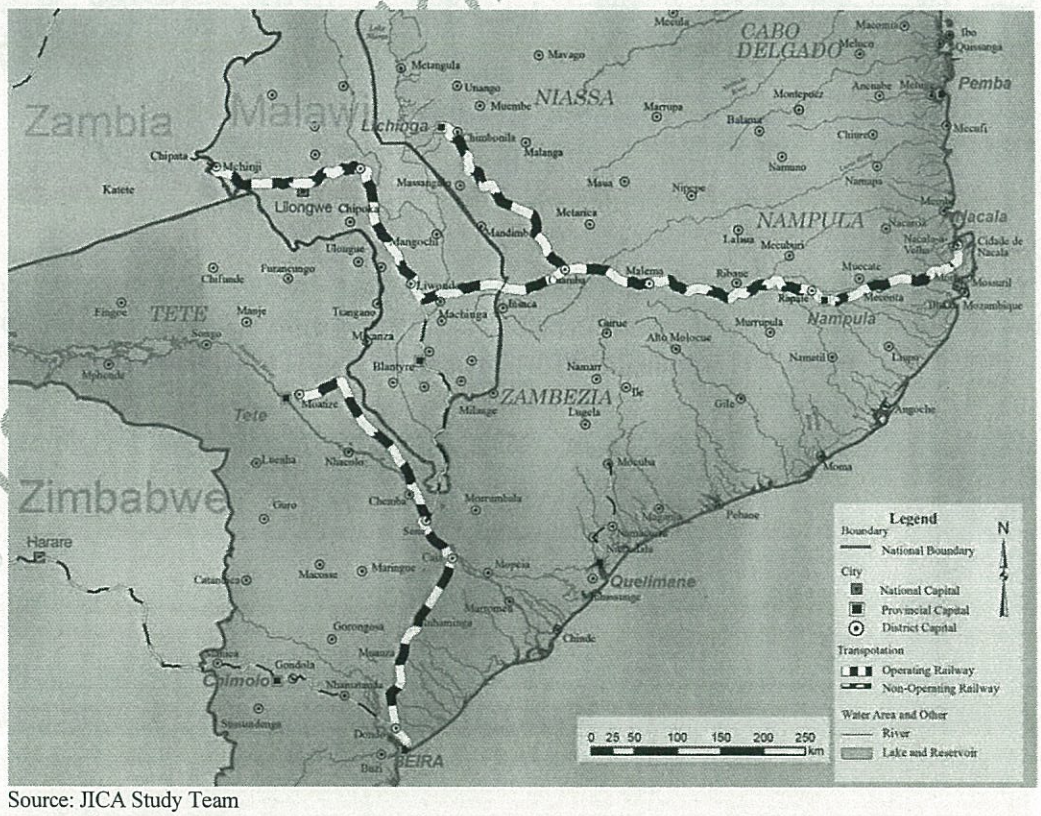
Source: JICA Study Team, based on ANE's GIS data on village points and population (INE's population census data, 2007)

Figure 2.1 Population Distribution in the Nacala Corridor Region



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

Figure 2.2 Roads and Rivers in the Nacala Corridor Region



Source: JICA Study Team

Figure 2.3 Existing Railway Lines in the Nacala Corridor Region and its Surrounding Countries

2.4 Emerging Development Opportunities in the Nacala Corridor Region

There are three strong driving forces for development for the Nacala Corridor Region. They have a large transformative power to the economy and spatial structure of the Nacala Corridor Region.

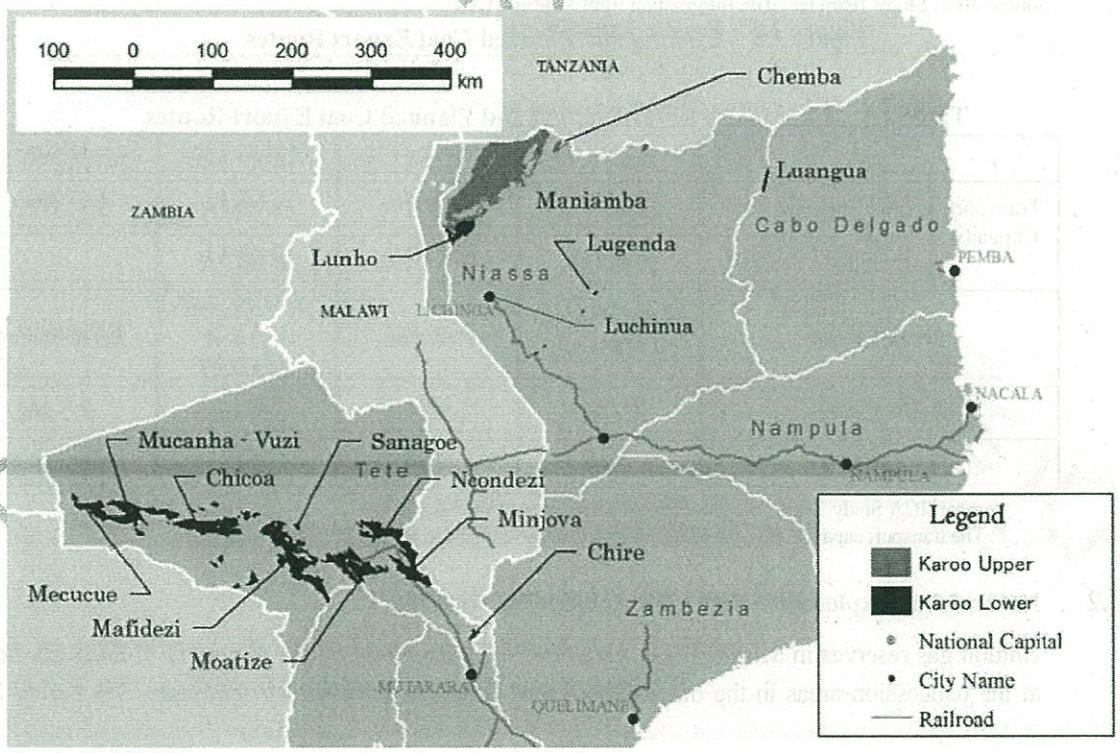
- Coal mining and coal transport for export
- Natural gas exploitation and LNG production for export
- Increasing investments and development in Nacala Special Economic Zone (SEZ) near the Nacala Port to be rehabilitated and upgraded

2.4.1 Coal Mining and Coal Transport for Export

A huge coal reserve of over 23 billion tons has been found in Tete Province. The developable coal found in Tete contains around 50% high quality coal (coking coal), which is one of the raw materials for iron making. At present, three coal mines are operational and the development of five more coal mines is planned. Coal production is expected to reach 53.4 million ton per year by 2017 and 60 million tons per year by 2020, and 100 million tons per year in the future.

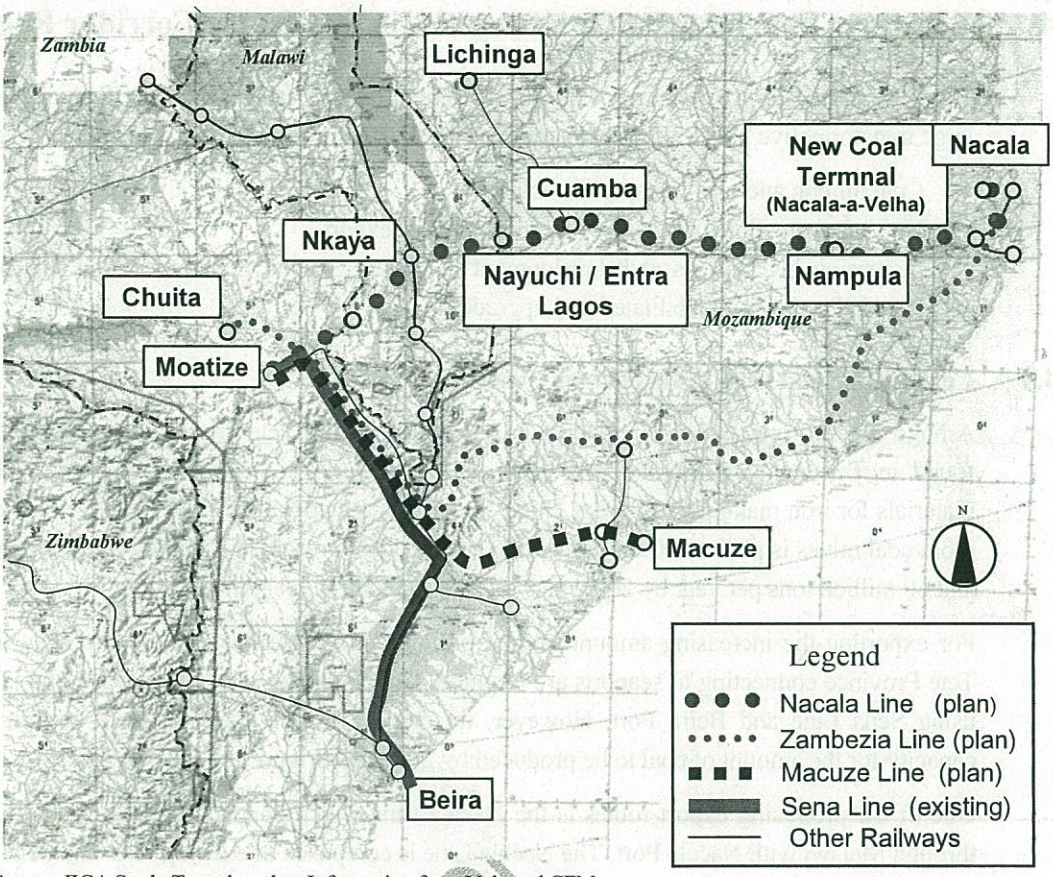
For exporting the increasing amount of coal production in Tete Province, 3-4 railway lines from Tete Province connecting to seaports are required. Coal export was started in 2012 and is currently using Sena Line and Beira Port. However, the Sena Corridor does not have enough transport capacity for the amount of coal to be produced by 2017. See Figure 2.5 and Table 2.2.

One of the promising export routes is the Nacala Line which connects Moatize of Tete Province through Malawi with Nacala Port. The Nacala Line is composed of existing lines and new lines.



Source: NEDO 2012

Figure 2.4 Coal Basins in the Nacala Corridor Region



Source: JICA Study Team based on Information from Vale and CFM

Figure 2.5 Existing and Planned Coal Export Routes

Table 2.2 Characteristics of Existing and Planned Coal Export Routes

		Nacala Line	Zambezia Line	Macuze Line	Sena (Beira) Line
Transport Capacity	First Capacity	22 MTPA	40 MTPA	25 MTPA	6.5 MTPA
	Eventual Capacity*	30 MTPA	60 MTPA	50 MTPA	-
Type of Work		Rehabilitation and new line	New line	New line and new port (Macuze)	Rehabilitation
Route Length		913 km	1,100 km	520 km	575 km
Completion		2015	2015	2017	Completed

Source: JICA Study Team based on data collected from various sources
*: The transport capacity after the implementation of the expansion of the railway capacity.

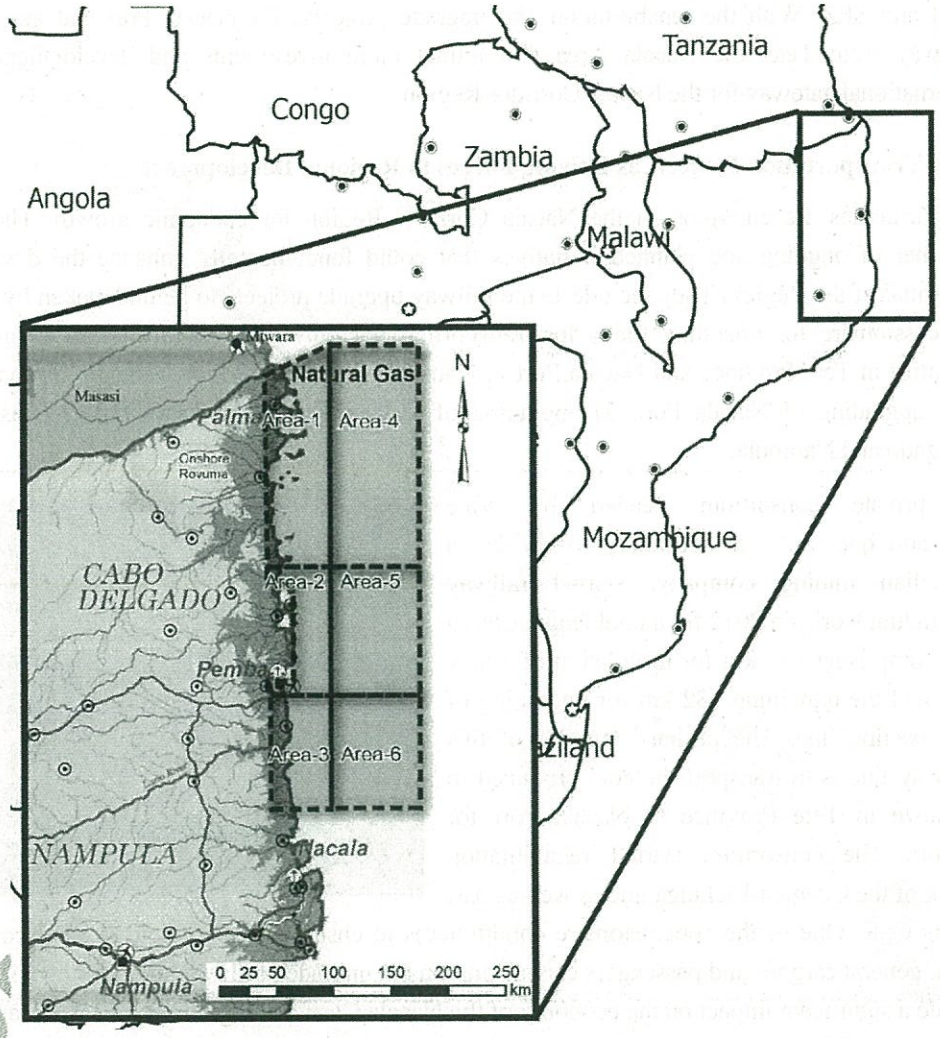
2.4.2 Natural Gas Exploitation and LNG Production for Export

Natural gas reserves in Mozambique were drastically increased by the discovery of huge gas fields at the concession areas in the offshore Rovuma Basin, in northern Mozambique. See Figure 2.6.

Recoverable reserves in Areas 1 and 4 are estimated as 75 trillion cubic feet (Tcf).[9]

Natural gas exploitation and LNG production are planned to start in 2018 at 10 million tons per year. This world-class natural gas production could create 70,000 job opportunities at most (including direct and indirect employment and construction jobs).

It could offer an opportunity for the Nacala Corridor Region to acquire a new energy source other than the electricity transmitted long distance from Cahora Bassa and to generate new chemical industries, such as those for ammonia and methanol, resulting in widening the industrial base of the Nacala Corridor Region.



Source: JICA Study Team based on ICF International (The Future of Natural Gas in Mozambique: Towards a Gas Master, Plan, Pages 4-18)

Figure 2.6 Natural Gas Concessions in Rovuma Offshore & Onshore Areas

[9] ICF International's estimation shown in "The Future of Natural Gas in Mozambique: Towards a Gas Master Plan (20 December 2012)" prepared by ICF International.

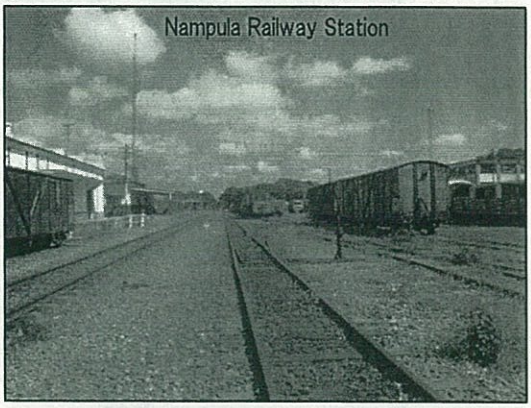
2.4.3 Increasing Investments and Development in Nacala Special Economic Zone (SEZ)

Mozambique enacted the law on Special Economic Zone (SEZ) in 2009. The first SEZ in Mozambique was established as Nacala SEZ covering the territory of Nacala Porto Municipality and Nacala-a-Velha District in 2009. Since then the number of approved investment projects and the amount of registered investment values has increased in the Nacala SEZ. From 2009 to 2012, there were 68 investment projects approved by GAZEDA. The total amount of investment value registered with GAZEDA was US$ 3,300 million (in years 2009-2012).

The increase in investments and development in the Nacala Area have been driven by the Nacala Port and SEZ. With the rehabilitation and upgrade projectss for Nacala Port and the upgraded railway from Tete, the Nacala Area will attract more investments and developments as the international gateway for the Nacala Corridor Region.

2.4.4 Key Transportation Projects as Driving Forces to Regional Development

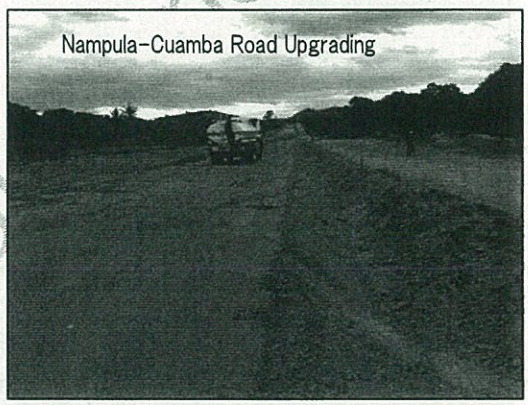
Opportunities are emerging in the Nacala Corridor Region for economic growth. There are a number of ongoing and planned initiatives that could fundamentally enhance the development potential of the Region. They include 1) the railway upgrade projects to be undertaken by a private concessionaire for operating trains for transporting not only coal but also other cargoes from Moatize in Tete Province and Nacala Port in Nampula Province through Malawi, 2) rehabilitation and upgrading of Nacala Port, 3) upgrading of trunk roads in the provinces of Niassa, Cabo Delgado and Nampula.


Nampula Railway Station

A private consortium headed by Vale Mozambique S.A, a subsidiary of Vale, a Brazilian mining company, started railway upgrading works in 2012 for a total length of 919 km comprising 237 km for installation of a new line and the remaining 682 km for upgrading of the existing line. The primary purpose of this railway line is to transport the coal produced in Moatize in Tete Province to Nacala Port for export. The consortium started rehabilitation work of the Cuamba-Lichinga line as well as part of its CSR. One of the concessionaire conditions is to ensure transportation of other companies' coal, general cargoes and passengers capitalising on the upgraded railway line. This condition could create a significant impact on the economy of the Nacala Corridor Region, as well as on land locked Malawi and Zambia. Access to and from international markets would be greatly improved, contributing to an increase in export of agro-products from the Region and inland neighbouring countries, as well as to lower prices and wider availability of daily goods, fuels, construction material and chemical inputs to agriculture. Intra-regional commerce will also be activated, thus stimulating production. Coupled with appropriate measures to support small-scale farmers, this railway upgrading could contribute to the improvement of income and living standards of people, reduction of poverty and reduction of income disparity.


Nacala Port

Nacala Port, situated at the eastern end of the Nacala Corridor, is currently under rehabilitation and will be upgraded with the assistance of the government of Japan. The cargo-handling capacity, which declined significantly due to the damages caused during the civil war, poor maintenance and lack of fund for rehabilitation, will be significantly enhanced by the two current projects. Urgent rehabilitation work and the upgrading of the facilities would increase its cargo-handling capacity from the present 1.3 million tons per year for general cargoes and 53 thousand TEU per year for containers to 49 million tons and 491 thousand TEUs respectively. Nacala Port could ensure efficient export and import of goods in large amounts as a new international gateway.


Nampula-Cuamba Road Upgrading

There are three major initiatives in upgrading the conditions of trunk roads in the Nacala Corridor Region. They are the road upgrade projects for Nampula-Cuamba, part of National Road No.13 (N-13), the project for two sections of National road No.14 (N-14) running eastward from Lichinga of Niassa Province toward Montepuez of Cabo Delgado Province and the project for National Road No.13 (N-13) connecting Cuamba and Lichinga in Niassa Province. Upgrading works are ongoing for Nampula-Cuamba and N-14 from Lichinga, while the upgrading of the Cuamba-Lichinga section has been committed for implementation. The government of Japan, the African Development Bank and other banks are supporting these three projects. The areas inland from Nampula westward have been largely isolated by poor roads, many of which have been impassable during the rainy season. Upgrading of these trunk roads to all-weather roads will significantly improve the mobility of the population in the surrounding areas, ensuring better access to market for agro-products and easier procurement of inputs and consumer goods. Activation of the regional and local economies could, thus, be accelerated.

2.5 SWOT Analysis for the Nacala Corridor Regional Development

For seeking economic and social development in the Nacala Corridor Region, strength (S) and weakness (W), external opportunities (O) and threats (T) are analysed and summarised in Table 2.3. This result is a summary of the SWOT analysis based on the key features presented in the previous sections.

The strengths (S) and weaknesses (W) are internal and inherent characteristics of the Nacala Corridor Region, while opportunities (O) and threats (T) are characteristics in response to external factors to be influential in the Nacala Corridor Region.

Table 2.3 SWOT Analysis for the Nacala Corridor Region

Strengths	Weaknesses
• Peace and stability even though some small conflicts were observed • Abundant mineral resources (including coal and natural gas) that are financially exploitable • Other natural resources with high potential • Fertile farmland with 1,000 mm of annual average rainfall • Relatively rich forests and wildlife in Niassa and Cabo Delgado Provinces • Beaches and other tourism resources • Availability of young and active labour • Good geographical location of the eastern coast of the Nacala Corridor Region, which is relatively closer to Asia	• Low population density in inland areas, especially in inland areas of Niassa and Cabo Delgado Provinces • Relatively poor health situation of the people • Relatively low educational and training levels of the people • Relatively high prices of basic goods and construction material due to poor transportation infrastructure and services • Lack of infrastructure and services to serve long-distance transport of goods and passengers • Inadequate economic infrastructure to support economic and social development in urban and rural areas • Less availability of ample water resources for Nacala and Nampula due to small catchment areas of rivers near Nacala and Nampula • Weak capacity for coordination and implementation of policies and public services • Low competitiveness and low productivity of private capital • Low saving rates and absence of development banks to provide sufficient funds for implementing development
Opportunities	**Threats**
• Increased business opportunities for quality domestic firms due to prospective increase in foreign investments and business operations • Inflow of foreign investments by multinational companies in the mining sector • Railway upgrading between Moatize and Nacala Port for transporting coal • Inflow of foreign and domestic investments in the manufacturing sector • Increased demand for tourism, especially eco-tourism, historical and cultural tourism	• Dissatisfaction and social unrest by people whose residential environment are adversely affected by development projects • Land conflicts between investors and rural communities, which might result in insecurity of food for local people and unsustainable development • Macro-economic instability of Mozambique • External shock to commodity prices including coal and natural gas • External shock to interest rates and currency exchange rates • Vulnerability to natural disasters, such as floods, droughts and cyclones in the Nacala Corridor Region • Rapid and unordered expansion of urban areas due to influx of migrants

Source: JICA Study Team

2.6 Existing National, Sectoral and Provincial Development Strategies and Plans

A variety of existing policies, development strategies and plans were reviewed and analysed for formulating PEDEC strategies including the following:

National Development Strategies and Plans

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

Economic Sector Policies, Development Strategies and Plans

- Agriculture: Strategic Plan for Development of the Agriculture Sector 2011-2020 (PEDSA), MINAG
- Forestry: Strategies for Reforestation, 2009-2030, DNTF of MINAG
- Industry: Industrial Policy and Strategy 2007, MIC
- Natural Gas: Natural Gas Master Plan (Draft)[10]
- Coal: Coal Master Plan (Draft)[11]
- Tourism: Strategic Plan for Development of Tourism in Mozambique, 2004-2013, MITUR
- Investment Promotion: Strategic Plan: Promotion of Private Investment in Mozambique (PEPIP 2014-2016), CPI

Infrastructure and Social Services Sector Policies, Development Strategies and Plans

- Transport: Strategies for the Integrated Development of the Transport System, 2009, MTC
- Road: Road Sector Strategies 2007-2014 (RSS), ANE
- Electricity: Network Development Master Plan Update, 2012-2027, EDM
- Telecommunications: National ICT Policy in 2000, INCM
- Telecommunications: ICT Implementation Strategy, 2002, INCM
- Education: Education Strategic Plan 2012-2016, MINED

Provincial Strategic Development Plans (PEPs)

- Nampula Province: Years 2010-2020
- Niassa Province: Years 2008-2017
- Cabo Delgado Province: Years 2010-2014
- Tete Province: Years 2012-2021
- Zambezia Province: Years 2011-2021

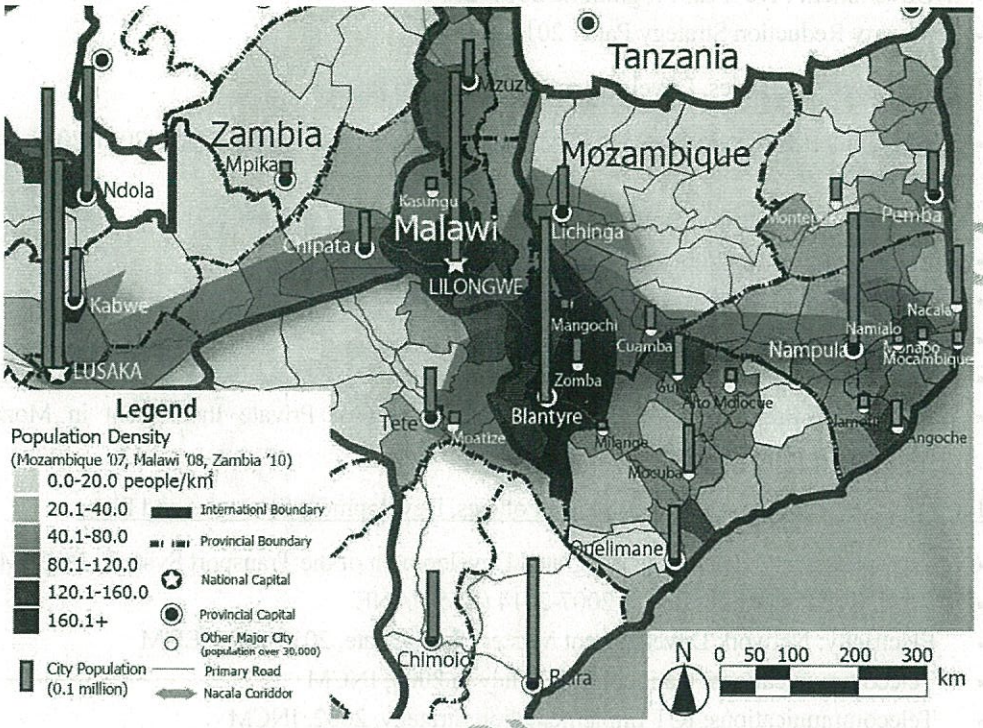
The National Development Strategy (NDS) 2015-2035 (draft) emphasises the importance of industrialisation by calling for the structural transformation of the economy (including agriculture), institutions, physical basis and human capital. In this sense, PEDEC Strategies and Development Scenario are in line with the NDS 2015-2035.

2.7 Malawi and Zambia and the 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.

[10] The future of Natural Gas in Mozambique: Toward a Natural Gas Master Plan, Final Report, December 20, 2012
[11] Preliminary Mozambique Coal Master Plan, Final Report, 27 May 2013

There are also several smaller cities along the corridor. The cities and district centres along the Nacala Corridor in Mozambique are relatively more populated than the other areas in the Nacala Corridor Region.



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

Figure 2.7 Population Density by District and Population of Major Cities on the Nacala Corridor

Malawi has been growing its GDP mainly with tobacco exports. Other major items exported from Malawi are sugar 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 is 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 to Europe and the United States are exported 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 having Malawi 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 Africa side have a great potential for international trading with these countries.

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 to 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, cement, etc. Approximately one third of exports from Zambia go to Europe (mostly to Switzerland), 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 during such case.

The Government of Zambia also has a plan to increase agro-processed products, which includes the plan of transforming Chipata, the capital city of Eastern Province into an agriculture 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.

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 railway freight cars will also be purchased soon for the railway transport between Chipata and Mchinji in Malawi.

Chapter 3 Vision and Development Goals for the Nacala Corridor Region

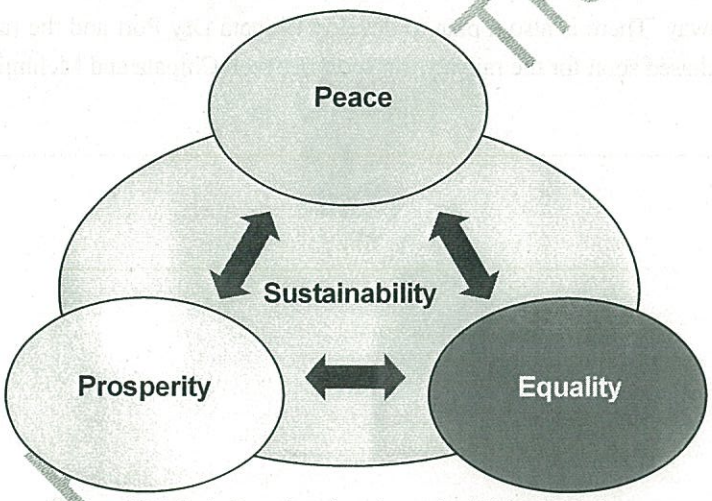
3.1 Vision

3.1.1 Vision for the Future of the Nacala Corridor Region

The vision for the future the Nacala Corridor Region is defined as:

> *A peaceful, prosperous, equitable and sustainable region free from poverty in harmony with the environment.*

The four key values of "peace", "prosperity", "equality" and "sustainability" are integrated into this phrase.



Source: JICA Study Team based on the result of Vision Workshop

Figure 3.1 Key Values of the Vision

The implications of each key word are summarised as follows:

"Peace" was expressed as an important value in the workshops as well as in the current Five-Year Development Plan for Mozambique. It is assumed that the memory of the difficult time during the independence war and the civil war, which lasted for about 30 years, still remains in people's minds and is reflected in stressing the importance of peace. It is a fundamental condition to secure the other three issues of "equality", "prosperity" and "sustainability." At a more familiar level, peaceful relationships between stakeholders such as investors, communities and the government are a prerequisite for sustainable development. A society with fewer crimes also ensures a situation with "peace."

"Equality" is an important value in Mozambique inherited from the ancestors. There could be political, social and economic implications of the word "equality." In the context of development, "equality" could mean a fair distribution of benefits from economic development among the people.

While perfect equality may be difficult, opportunities to participate in development and to get access to health and education services at least should be available for everyone with transparency. Good leadership is needed for this.

"Prosperity" could imply both success in economic development and the state of people's minds being satisfied with their living conditions. "Prosperity" ensures a higher level of independence from others: lower level of dependence on international partners for Mozambique and higher level of self-sufficiency of goods and services for the Nacala Corridor Region. It is an important issue for the current generation, but more so for the next generations, because achieving "prosperity" requires many years. "Prosperity", therefore, should be sustainable. "Prosperity" is the common key word shared by Zambia, Malawi and Mozambique.

"Sustainability" implies not only sustainability from environmental perspectives, but also social and economic sustainability of societies. The other values in the Vision, namely prosperity, peace and equality, are prerequisite conditions for "Sustainability." In other words, "Sustainability" embraces peace, equality and prosperity.

3.1.2 Development Directions toward the Vision

To have concrete images for the Vision, development directions in relation to the four values of the Vision should be pursued as follows:

Development Directions for "Prosperity"

- Regional economy grows
- Income disparity is reduced
- Poverty is eradicated

Development Directions for "Peace"

- There is no civil war
- Confrontations are prevented and resolved through a fair and transparent process
- Law and order situation is improved with lower rate of crimes such as robbery and theft

Directions for "Equality"

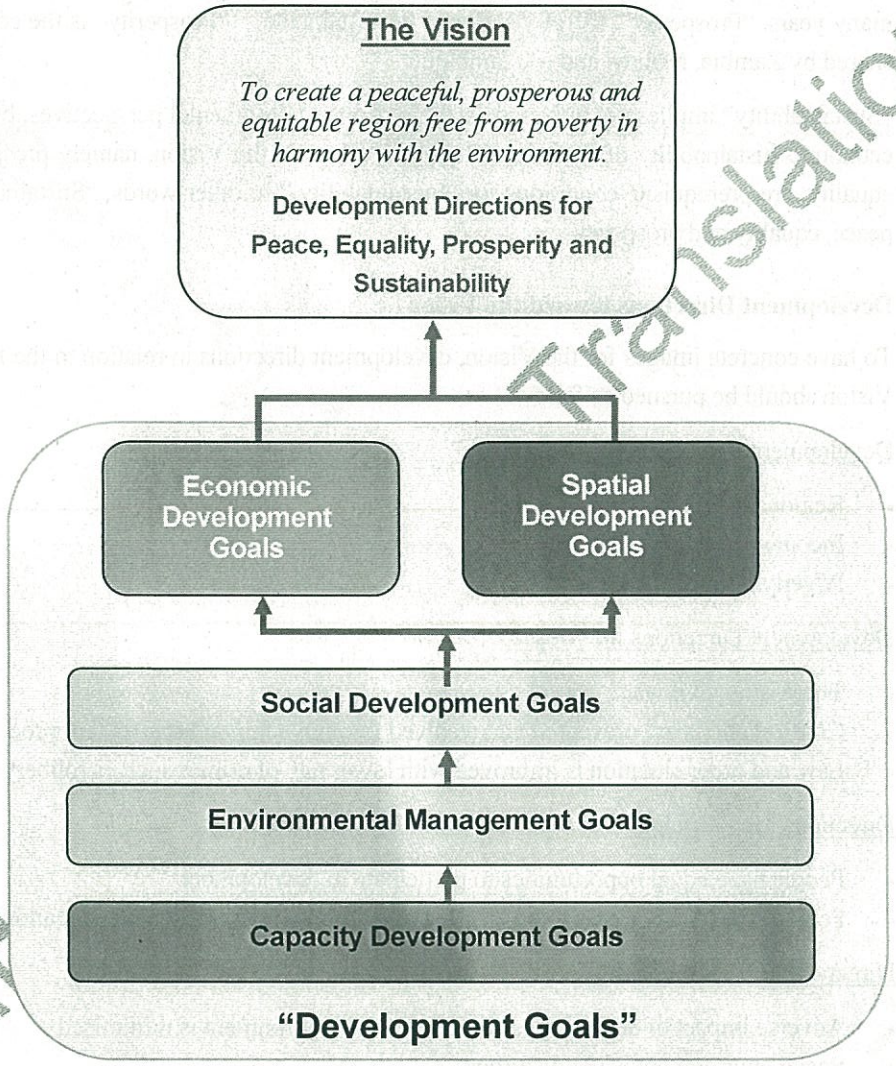
- People have equal opportunities to participate in development
- People have equal access to basic social services, such as health and education

Directions for "Sustainability"

- Adverse impact of development on the natural environment is minimised
- Social environment is not disturbed
- Traditional values are maintained while accepting modernization and development

3.2 Development Goals

Development goals for the Nacala Corridor Region are a set of statements indicating desirable directions of development in order to pursue the Vision of the Nacala Corridor Region. The identified development goals consist of five aspects, namely "capacity development", "environmental management", "social development", "economic development" and "spatial development".



Source: JICA Study Team

Figure 3.2 Vision and Development Goals

3.2.1 Capacity Development Goals

Capacity development is considered at three levels, namely, individual capacity, institutional capacity and social capacity. Considering existing development potential and constraints in the Nacala Corridor Region, the following development goals for capacity development for the Nacala Corridor are identified:

- Capacity Development at the Individual Level

- Increase of education level of individuals both in urban and rural areas
- Increase of skill level of labourers and farmers for promoting economic development
- Capacity development for government officers for managing endowed resources, such as mineral and water

- Capacity Development at the Institutional Level
  - Strengthening of national, provincial and local government organisations for planning, implementation, monitoring and evaluation
  - Development of government's mechanisms for coordination among different sectors for promoting integrated regional development
  - Strengthening intermediation function of government for better investor-community relations
- Capacity Development at the Society Level
  - Empowered communities to cope with incoming investors into the territories of their communities
  - Development of well-informed societies
  - Development of democratic societies

3.2.2 Environmental Management Goals

The government will need to cope with different kinds of environmental problems to emerge in the Nacala Corridor Region in a balanced manner. In the short term and in the regional context, various environmental impacts will be created by infrastructure projects (railway, road, port, airport, power etc.), expansion of urban areas and private investments. These issues require swift action by the government. On the other hand, efforts at regional environmental problems could also contribute to reduction of CO_2 emission. For example, a regional policy to limit agricultural expalnsion to a certain extent for maintaining forest coverage is considered to be effective in reducing CO_2 emmission.

In the medium to long terms, more efforts and measures will be made directrly at global environmental problems including reduction of CO_2 emission and using a new mechanism for sharing the cost of environmental protection. The environmental management goals are summarised as follows:

- To cope with both immediate regional environmental issues and global environmental issues with a good balance
- Strengthening of enforcement of existing systems for environmental regulations including EIA and environmental management for both public and private investments
- Capacity development for environmental management including administrative procedures and technical monitoring

3.2.3 Social Development Goals

Social development goals are cross cutting over the issues of capacity development and economic development. However, they have special perspectives of community empowerment and participation. Considering development potential and constraints inherent in local communities, the social development goals for the Nacala Corridor Region are identified as follows:

- Increase of people's incomes and welfare

- Diversification of opportunities for employment and businesses in local areas
- Promotion of people's participation in local development
- Promotion of basic education and vocational training for local people both in urban and rural areas
- Promotion of creation of the linkage with private companies for job creation for local people, especially for the youth both in urban and rural areas
- Empowerment of urban communities through supporting local people, especially the youth, in starting businesses, as well as in getting jobs
- Empowerment of rural communities by protecting land use rights of local communities and farmers
- Strengthening of the capacity of small-scale farmers practicing family farming
- Upgrading of social services (health, education and rural water supply) in rural areas

3.2.4 Economic Development Goals

Investment should be promoted for economic development. There are different views concerning investment in Mozambique including negative ones. Some argue foreign investment only exploits indigenous resources and people for investors' own benefit. The PEDEC-Nacala's stance is positive in that investment should be promoted properly such that it creates positive impact on the regional economy. The question here is "in what way the regional economy could benefit most from investment and what the government should do to make it happen in such a way."

The economic development goals for the Nacala Corridor Region are identified as follows:

- Promotion of foreign and domestic investments for economic development
- Promotion of diversified economic development including not only the mining sector but also manufacturing industries
- Promotion of industrial development by tapping rich natural resources available in the Region and development potential to emerge in the Region
- Improvement of productivity of agriculture production for both small-scale farmers practicing family farming and for commercial farmers
- To vitalize private sectors for creating value chain for the agricultural sector in accordance to the RAI guidelines
- Promotion of bottom-up development initiatives

3.2.5 Spatial Development Goals

The spatial development goals are set for aiming at transforming the physical characteristics of the Nacala Corridor Region in such a way as to seek economic development goals, while maintaining the principles of the environmental management goals and social development goals. The spatial development goals identified for the Nacala Corridor Region are summarised as follows:

- Development of a region-wide transportation network based on the Nacala Corridor
- Strengthening of urban functions in accordance with an established urban centre hierarchy in relation to the region-wide transportation network
- Strengthening of enforcement of protection and conservation of nature areas
- Establishment and protection of new forest conservation areas where agricultural expansion is not allowed

- To support development of manufacturing industries in urban centres
- Promotion of tourism development utilising nature and cultural tourism potentials in the Region in the course of development a region-wide transportation network and urban centres
- Development of infrastructures necessary to support economic and social development (road, electricity, water, telecommunications and so on)
- Promotion of agricultural development by implementing ProSAVANA strategies, in the areas along transport corridors to be developed and in the areas close to large-scale mining areas, as coal mining in Tete Province and natural gas exploitation in Cabo Delgado Province

Chapter 4 Sectoral Issues and Overall Issues

4.1 Sector Issues and Overall Issues

A variety of problems were found in each sector (for both economic sectors and infrastructure sectors) based on data collection and field reconnaisance. These problems were analysed for defining issues to be tackled for each sector for the purpose of achieving development goals set by PEDEC-Nacala.

"Sector Issues" for different economic sectors and infrastructure sectors were defined and compiled in the main text for the Draft PEDEC Strategies Report. To solve those sector issues, objectives were defined and strategies were formulated for each sector. On the other hand, it is important to consider how to define a set of "Overall Issues" to be tackled for formulating integrated development strategies, as described in the next section.

4.2 Overall Issues for the Nacala Corridor Region

A set of overall issues for promoting development in the Nacala Corridor Region is defined. The overall issues are interrelated with each other. They are summarised below in this section.

(1) Poor Transporation Conditions and Difficulties in Promoting Region-Wide Development

Although the Nacala Corridor Region has a lot of various potentials, it was difficult to utilise them for economic development in the past. Especially, vast inland areas had poor access to markets, major cities or seaports, due to poor conditions of roads and railways. As a result, in the Nacala Corridor Region as a whole, economic sector development has been stagnant so as to create a low level of transport demand for roads, railways and seaports. Therefore, transport infrastructure has gradually become deteriorated and has remained unrehabilitated. Transport costs continued to be generally high.

One of the basic issues to be tackled is development of a region-wide and sustainable transport network, which integrates inland areas with seaports, as well as with major urban centres. At the same time, it is necessary to consider how to create transport demand large enough to support such a region-wide transport network.

(2) Upgrading of Transport Corridors by Utilising Private-Sector Initiatives

Now the coal extraction in Tete will require the upgrading of the railway infrastructure and operation from Tete to Nacala Port. Then the railway transport to be upgraded for coal transport would change this difficult situation (poor accessibility) in the Nacala Corridor Region.

Indeed, the private sector initiative for coal exploitation and transport could upgrade railway infrastructure and operation between Tete Province and Nacala Port. However, in order to utilise the upgraded railway for regional development, the first issue to be tackled for the transport corridor is how to assure start up of the operation of the upgraded railway for coal transport. This issue is very

critical because the upgraded railway for coal transport might have seriously negative environmental and social impacts (coal dust, vibration, noise and interruption of road traffic) along the railway line, especially in the central areas of Nampula and Cuamba. It is necessary to implement effective mitigation measures on this environmental and social problem.

The second issue on the transport corridor is as important as the first issue. It is how to secure the capacity of the railway transport for non-coal cargoes, which could contribute to creation of development opportunities and potential for a variety of economic sectors.

(3) Promotion of Further Economic Development

It is true that the upgraded transport corridor could enhance development potentials not only in commerce and logistics sectors, but also in manufacturing, tourism, agriculture and forestry sectors. However, the upgraded transport corridor is not enough to improve the business environment for these various sectors. Other conditions should be improved.

For example, manufacturing sectors are one of the promising sectors that have increased development potentials due to the upgraded transport corridor. However, they should be supported by a certain quality of electricity and water supply, as well as telecommunications.

The issue of economic development is how to support the development of economic sectors, including by additional infrastructure provision and implementing other soft measures, in order to take advantage of enhanced development potentials due to the upgraded transport corridor.

(4) Inclusive Development to Support Dynamic Development

With economic development strategies to capitalise on the private sector initiatives for upgrading the railway, it is not always possible to tackle a variety of development issues related to social, environmental, human resources and institutional aspects. The following particular issues are important for promoting "Dynamic and Inclusive Development":

- How to cope with environmental problems to be caused by the upgrading of railways and provision of economic infrastructure, such as electricity and water supply
- Land disputes between investors and small-scale farmers, as well as those among rural community members, in the situation of increasing land-based investments
- How to provide prospective economic sectors with more educated and trained human resources
- How to establish an institutional mechanism for coordination between different sectors and different actors in promoting regional development

In addition, many social and environmental problems might arise in the course of rapid and large-scale development in the Nacala Corridor Region. It is necessary to address the emerging problems due to development activities, including the following:

- Increasing resettlements due to infrastructure development
- Rapid influx of migrants to urban areas
- Prevailing HIV-Aids due to increasing mobility of people and goods
- Environmental pollution due to industrial development
- Urban solid wastes due to large increase in urban population
- Impact on traditional social and cultural values due to modernisation and urbanization

(5) Inclusive Development Considering Socially Vulnerable People and Geographically Remote Areas

There are various stakeholders in the Nacala Corridor regional development, such as farmers in rural areas, workers in urban areas, local business people and SMEs, foreign investors, government officers and politicians. There are people of different income levels from the poor to the rich. While there are people living in urban areas, there are others living in rural areas and remote areas. There are also people who are socially vulnerable, who can not participate in development opportunities. With no adequate intervention, only a handful of companies and people in advantageous positions take advantage of development in the Nacala Corridor Region, while the majority remain in underdeveloped conditions or may be negatively affected in a worse case scenario.

Underdevelopment of inland areas has been serious in the Nacala Corridor Region. It is partly because there are difficulties in providing basic infrastructure and services due to remoteness and low population density. Since the transport corridors consisting of trunk roads, railways and seaports would be upgraded, such situation of underdevelopment due to remoteness could be improved. However, even after the upgrading of transport corridors, some remote areas would remain underdeveloped.

One of the most difficult and fundamental issues is how to tackle such underdevelopment problems of remote areas and vulnerable people, which might continue even after the successful upgrading of the transport corridors and related regional development.

(6) Urban Centres

Urban centres play an important role in economic development not only as the distribution centres of goods and services for the surrounding areas but also as the bases for manufacturing production. In the Nacala Corridor Region, there are a number of major urban centres, such as the provincial capitals (Nampula, Lichinga, Pemba and Tete) and strategically important urban centres, such as Nacala, Cuamba and Mocuba.

It is difficult to allocate equal resources for developing all of the urban centres since the available resources are limited at the same time. How to put priority to different urban centres and how to implement necessary investment in the development of selected urban centres with the priority for the purpose of strategically promoting urban centre development in the Nacala Corridor Region is an important issue.

(7) Environment

It is inevitable that a development initiative with such a magnitude as the Nacala Corridor Region's development would affect the environment in some ways. The existing momentum of development should be maintained to the extent possible, while negative impacts of development activities should be minimised or adequately mitigated.

The issue of the environment is how to promote environmental protection and environmental management in the context of increasing economic and development activities. Enforcement of environmental laws and regulations is essential, and proactive implementation of mitigation measures for expected environmental inpacts is also important.

(8) Promotion of Agricultural Development in Wide Areas

ProSAVANA targets the areas along the main corridor from Lichinga through Cuamba and Nampula to Nacala Port, covering 19 districts. PEDEC-Nacala adheres to ProSAVANA's principles and strategies and also applies them to selected areas for promoting agricultural development in the Nacala Corridor Region.

The target areas of ProSAVANA are in good condition in terms of accessibility. Where and how to promote agriculture development outside ProSAVANA's target areas (19 districts) by applying ProSAVANA strategies is one of the important issues for PEDEC-Nacala.

(9) Long-Term Sustainability of the Transport Corridor

The expected ugrading of the transport corridors would be initiated and supported by private-sector coal mining. In the next 30 years or so, it might be possible to maintain this situation. However, when it comes to very long-term sustainability beyond 30 years or 50 years, it is necessary to promote diversified regional economies and to generate transport demand large enough to sustain the function of the international and regional transport corridor. For this purpose, regional economic development should be promoted widely not only in inland areas of Mozambique, but also Malawi and eastern and central Provinces of Zambia. This is a very important issue in the very long term.

Chapter 5 Development Scenario for the Nacala Corridor Region

5.1 Development Scenarios: Introduction

A "Development Scenario" is a set of narrative description (but not full-scale explanation) of ways of development including emphasis on economic sectors, spatial patterns of development and sequences of development. It is useful to draw overall images of different patterns of regional development.

In this chapter, alternative development scenarios are prepared and their characteristics are analysed and evaluated from viewpoints provided by the vision, development goals and overall issues.

5.2 Selected Development Scenario

Based on the evaluation of alternative development scenarios, the following development scenario "**B-3: Diversified Economic Sectors Development based on a Region-Wide Corridor Network**" has been selected for the long-term future of the Nacala Corridor Region:

(1) Development of Diversified Economic Sectors

The Nacala Corridor Region will promote not only mineral resource development (coal, natural gas and other resources), but also the development of diversified economic sectors including commerce, logistics, manufacturing, tourism, agriculture and forestry by utilising a wide range of development potential available in a wide region.

(2) Coal Development and Transport as an Initial Driving Force

In this development scenario, coal exploitation in Tete Province and the necessity for upgraded transport of coal from Tete to Nacala Port is a very important initial driving force (trigger) of regional development in the Nacala Corridor Region. To take advantage of this very precious development opportunity for enhancing the long-distance transport function and development potential of economic sectors is a very significant key for PEDEC-Nacala. The coal development for export would assure a high transport demand in the beginning phase of railway upgrading. Moreover, the upgraded railway will be able to transport non-coal cargoes (general cargoes and containers), as well as passengers, if adequate development intervention is done for accommodating non-coal cargoes in accordance with the concessional agreements.

(3) Main Transport Corridor: Paralleled Railway and Trunk Road

In parallel with the upgraded railway, trunk roads connecting Lichinga, Mandimba, Cuamba and Nampula to Nacala Port will be constructed using foreign assistance to the Mozambican government. The upgraded railway and upgraded trunk roads will be able to complement each other. Long-distance (over 500-700 km) heavy-loaded cargoes will use the corridor railway. On the other

hand, trunk roads and feeder roads will transport goods and people for the medium-distance (300-500 km).

The trunk roads from Lichinga, Mandimba, Cuamba and Nampula up to Nacala Port would be an axis of the Nacala Corridor Region from which secondary corridors and feeder lines could be extended widely and deeply into the region. Secondary roads and feeder roads would collect goods and people from wide areas to the trunk road and corridor railway.

(4) Extensive Corridor Network and Hierarchical Urban Centres

The extending corridor network will be developed gradually after completion of the main corridor (consisting of upgraded railway and trunk roads). This extensive corridor network will also help to develop urban centres at nodal points of transport. These nodal urban centres will become commercial and service centres and bases for industrial production.

The extensive corridor network and hierarchical system of urban centres will provide transport services and commercial centre services, resulting in improvement of the business environment for creating a value chain for the agricultural and forestry sectors. Transport costs will be substantially reduced in wide areas, in which prices of daily goods and construction material will be reduced and small-scale farmers will be able to buy chemical inputs at more reasonable prices and sell their agricultural produce at higher prices to middle traders.

(5) Positive Impact on Education and Health Services

With this improved extensive corridor network and urban centres, administrative officers, school teachers and health officers will be able to live and work in better conditions even in inland areas of the Nacala Corridor Region. As a result, with additional proper intervention, schools and health centres will be able to function in better ways for local people even in remote areas.

(6) Development Possibility for Other Mineral Resources and Tourism Resources in Remote Areas

The Nacala Corridor Region is rich in a variety of mineral resources and nature tourism resources. Using the extensive corridor network and urban centres, such mineral resources and tourism resources (products and destinations) will be more accessible and easily utilised for development.

(7) Priority in Development

As for the priority in development, this development scenario gives Nacala Bay Area an especially high priority in preparing the foundation (hard and soft infrastructures) of manufacturing sector development. Since Nacala Bay Area will have an upgraded seaport function, and an upgraded railway connection to inland areas of Mozambique, Malawi and Eastern Province of Zambia, Nacala Bay Area's locational advantage will be enhanced to a substantially high level so that manufacturing sectors could be located and developed for serving inland countries and areas, as well as overseas countries. However, in order to achieve this situation, it is necessary to provide economic infrastructure to support manufacturing industries, including those for stable and ample electricity and water supply.

When Nacala Bay Area is successful in attracting and operationalising manufacturing industries, then Greater Nampula will be able to do so by getting adequate economic infrastructure.

5.3 Alternative Development Scenarios

In order to consider future development patterns, alternative development scenarios have been developed. Two major factors are used for creating different development scenarios. The first factor is major economic sectors. The second factor is spatial patterns of development.

5.3.1 Mining-Oriented Economy vs. Diversified Economic Sectors

By considering which economic sector should become a major driving force for promoting development of the Nacala Corridor Region, the following two types of development scenarios have been prepared:

- Scenario A: Mining-Oriented Regional Development
- Scenario B: Regional Development based on Diversified Economic Sectors

Major features of these scenarios are briefly described below.

(1) Scenario A: Mining Sector-Oriented Regional Development

In this scenario, the major economic sectors are limited to mining sectors. In the Nacala Corridor, there are two dominant mining sectors: 1) coal exploitation and coal transport for export and 2) natural gas export and LNG production for export.

In addition to the mining activities, there are some possibilities to develop other economic sectors to support to mining activities, including first processing of minerals (such as LNG for natural gas) and providing maintenance services to construction machinery, as well as food and other supply services. In addition to the supporting industries, it will be necessary to develop infrastructure and urban functions in order to support the mining activities. The return on invested capital would be higher even after including the costs not only for mining activities but also for supporting industries, infrastructure provision and urban functions.

In mining areas and their surrounding areas, it will be not so easy to develop other economic sectors even though they can utilise the infrastructure and urban functions to be provided for mining activities and their supporting sectors.

Mining activities together with supporting sectors will not be sustainable in the very long run. Therefore, the regional economy based on dominant mining sectors is not very sustainable.

(2) Scenario B: Regional Development based on Diversified Economic Sectors

In this scenario, in addition to mineral resource development, diversified economic sectors will be developed including manufacturing, tourism, agriculture and forestry, as well as commercial and services. There are the following development possibilities in the Nacala Corridor Region:

- Development of manufacturing sectors in Nacala Bay Area and Greater Nampula
- Development of Agro-processing industries in Cuamba
- Tourism bases are developed in Nacala Bay Area, Pemba and Lichinga for getting access to beaches and cultural and nature tourist destinations
- Agricultural development along the main corridor by applying ProSAVANA strategies
- Agricultural development in the areas near coal exploitation in Tete Province
- Agricultural development in the areas near natural gas exploitation in northern Cabo Delgado

The regional economy composed of diversified economic sectors will have the following various benefits:

- Different economic sectors could support each other so as to achieve synergetic economic growth
- Diversified economic sectors will be located in wide and various areas, resulting in contribution to region-wide development
- Diversified economic sectors will be able to enable people of various occupations to find their own jobs
- In the regional economy based on such diversified economic sectors, a wide range of occupations can participate in economic activities
- The regional economy with diversified economic sectors will have resilience to external shocks
- The regional economy supported by diversified economic sectors will be more sustainable than other cases

5.3.2 Three Different Spatial Patterns of Development

In addition to the first factor of major economic sectors, spatial patterns of development are used as the second factor to differentiate development scenarios. Considering different possibilities in the Nacala Corridor Region, the following three patterns are formulated:

- Spatial Pattern 1: Three Enclaves of Tete, Palma and Nacala
- Spatial Pattern 2: Tete-Nacala Single Corridor Development
- Spatial Pattern 3: Development based on a Region-Wide Corridor Network

These three spatial patterns are closely related to different major economic sectors. Spatial Pattern 1 is strongly oriented toward the mining sector oriented (Scenario A). Both Spatial Pattern 2 and Spatial Pattern 3 support the case of diversified economic sectors (Scenario B). Therefore, by combining the two factors (major economic sectors and spatial patterns), the following three development scenarios are naturally identified:

- **Scenario A-1**: Strong Mining Sector Orientation and Three Enclaves of Tete, Palma and Nacala
- **Scenario B-2**: Diversified Economic Sectors Development based on Tete-Nacala Single Corridor
- **Scenario B-3**: Diversified Economic Sectors Development based on a Region-Wide Corridor Network

Major characteristics of these development scenarios are described below.

(1) Scenario A-1: Strong Mining Sector Orientation and Three Enclaves of Tete, Palma and Nacala

Major development will take place mostly in the three enclaves at Tete, Palma and Nacala. Tete's enclave will be limited to coal exploitation and its supporting function. Palma's enclave will be limited to natural gas exploitation and LNG production with their supporting sectors. Palma will develop chemical industries, such as those of ammonia and methanol. Nacala's enclave will be based on Nacala Port's logistics sectors and manufacturing sectors oriented toward domestic markets.

In this scenario, the function of the railway from Tete to Nacala Port will not be well developed and mostly limited to coal transport, but neither general cargoes nor containers will be substantially transported.

Other economic sectors will not be able to grow well, except for the supporting sectors of mining activities, even though they can depend on infrastructures and urban functions to support mining sectors. Since it is subject to the world price fluctuation of mineral resources, Nacala Corridor Region's economy will be not very resilient to external shocks, resulting in unsustainablity in the long run. The regional economies based on such enclaves will not be sustainable in the very long run.

Since the railway from Tete to Nacala Port will be limited to coal transport in this scenario, heavy-loaded large trailers will run on the trunk roads (currently under construction) from Lichinga or Mandimba through Cuamba to Nampula and Nacala. In such a rail and road transport situation, the trunk roads would be in damaged conditions, even though the road upgrade projectss are completed. As a result, in the medium and long terms, well-maintained trunk roads would not be available in the Nacala Corridor, and the creation of a value chain for the agricultural sector would be very difficult.

(2) Scenario B-2: Diversified Economic Sectors Development based on Tete-Nacala Single Corridor

In this scenario, only a single transport corridor (composed of railway and trunk road) from Tete to Nacala Port will be upgraded and functional. The areas along this transport corridor will be developed including the areas surrounding Nacala Port.

In addition to coal, the railway from Tete to Nacala Port will transport general cargoes and containers, as well as passengers. As a result, the commercial and logistics catchment areas for major urban centres, such as Nacala and Nampula, will be significantly expanded. Then, not only commerce and logistics sectors but also manufacturing and other sectors will be able to grow, largely by taking advantage of development opportunities to arise due to the upgraded railway.

On the other hand, in the areas along the transport corridor, the creation of value chain for the agricultural sector will be relatively easy and possible so as to contribute to modernisation and intensification of small-scale farmers' agriculture.

In this scenario, the connection between Nacala Port and Tete will be strongly established both by railway and trunk road, while the connection between Nacala Port and Pemba/Palma is relatively weak.

(3) Scenario B-3: Diversified Economic Sectors Development based on a Region-Wide Corridor Network

In this scenario, a region-wide corridor network is developed by extending sub-corridors and feeder lines from the main corridor. A wide development will take place along the extensive corridor network.

With such an extensive corridor network, wide areas not only in inland Mozambique but also in Malawi and the eastern part of Zambia will be connected strongly to each other so as to form a larger and integrated regional economy. In this extensive and integrated regional economy, major

urban centres, such as Nacala Bay Area and Greater Nampula, will increase their roles in providing commercial and logistics services, as well as in industrial production. Other urban centres at nodal points of the corridor network will also be able to grow their urban and economic functions.

Since a region-wide corridor network and hierarchical system of urban centres are extensively established for serving wide areas of the Region, it will be possible to create a value chain for agricultural and other economic sectors.

When the regional economy becomes diversified, it could reduce risks due to external shocks to mining sectors, including price fluctuation, unlike Scenario A-1.

In this scenario, when diversified economic sectors grow by utilising a variety of resources and development potentials, not only large enterprises but also SMEs will be able to participate in economic development in the Region. As a result, the achievement of this scenario would contribute to sustainable growth of the national economy of Mozambique.

On the other hand, development and maintenance of the extensive region-wide transport corridor network is relatively costly; therefore, it is necessary to substantially develop diversified economic sectors in order to generate cargo demands for the transport corridor.

5.4 Evaluation of Alternative Development Scenarios

The evaluation of the three alternative development scenarios (A-1, B-2 and B-3) has been conducted. Economic and spatial impacts/benefits, social impacts and environmental impacts were analysed as shown in Table 5.1.

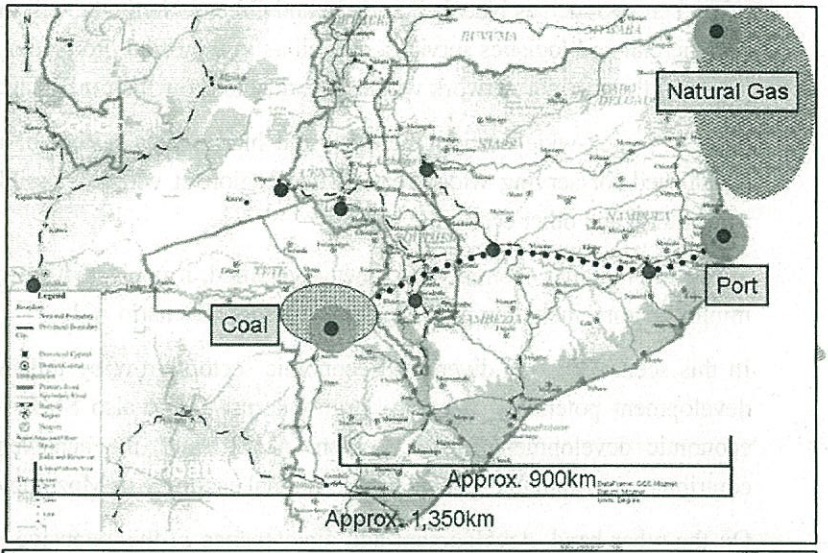
In the medium and long terms, Scenario B-3 is better than the other scenarios from the viewpoints of economic and social impacts. The intensity of the environmental impacts in Scenario B-3 would be lower than those of Scenarios A-1 and B-2. In this respect, environmental impacts in Scenario B-3 are easier to controlling or manage than those of Scenarios A-1 and B-2.

In broader terms, Scenario B-3 could bring about development benefits to wider areas, enabling more and various groups of people to participate in regional development by utilising various potentials available in a wide region.

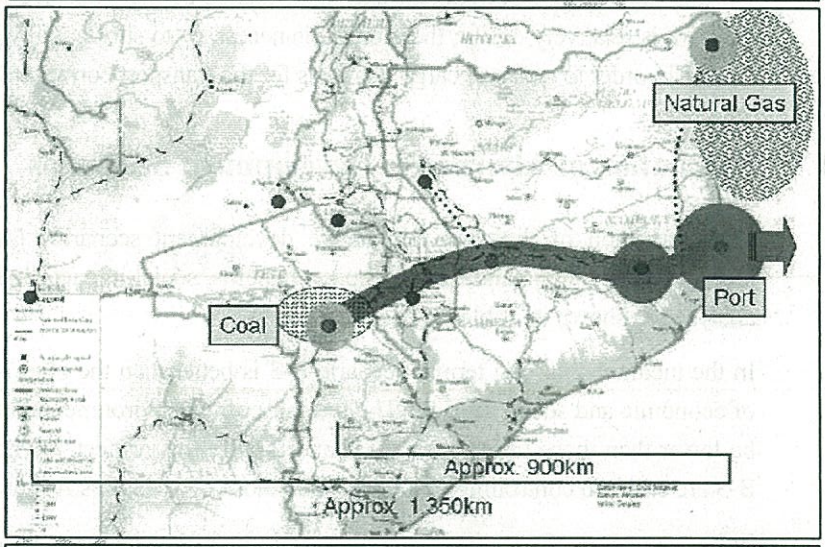
Not by limiting development effort at certain sectors, but by promoting development of diversified economic sectors, Scenario B-3 will be able to seek sustainable development than the other scenarios.

With Scenario B-3, there would be more possibilities to generate more cargo demands to sustain the region-wide transport corridor network than the other scenarios.

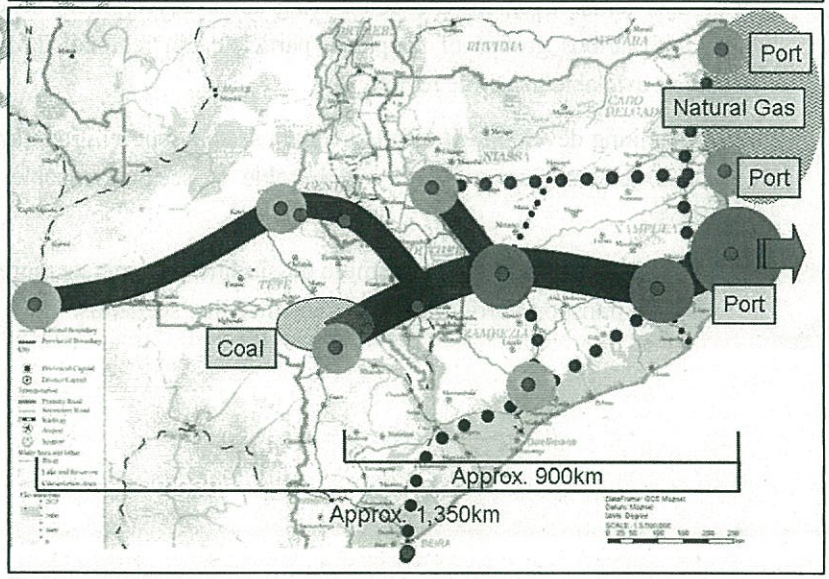
Scenario A-1: Strong Mining Sector Orientation and Three Enclaves of Tete, Palma and Nacala



Scenario B-2: Diversified Economic Sectors Development based on Tete-Nacala Single Corridor



Scenario B-3: Diversified Economic Sectors Development based on a Region-Wide Corridor Network



Source: JICA Study Team

Figure 5.1 Alternative Development Scenarios for the Nacala Corridor Region

Scena-rio Code	Scenario Name	Factors to Differentiate Scenarios		Characteristics of Benefits/Impacts		
		Major Industries	Spatial Pattern	Economic and Spatial Benefits/Impacts	Social Impacts	Environmental Impacts
A-1	**Strong Mining Sector Orientation and Three Enclaves of Tete, Palma and Nacala**	A. Mining-Sector-Oriented Regional Developmet	1:Three Enclaves of Tete, Palma and Nacala	• Concentrated investments to mining sectors, including supporting sectors, infrastructure and urban facilities, will take place in Tete and Palma. The efficiency of invested capital for such mining-related development will be relatively high. • However, since those supporting sectors, infrastructure and urban functions will be developed closely related to mining sectors, it will be difficult for other economic sectors to utilize them for their further development. As a result, not so wide a range of economic sectors will be able to develop based on the infrastructure and urban functions to be developed in relation to mining sectors in Tete and Palma. • Since mineral resource development is influenced by world price fluctuation and other external shocks, Nacala Corridor Region's economy will not be very sustainable in the long run.	• A large influx of migrant managers, engineers and other workers from outside the enclaves may occur, causing various social problems. • On the other hand, the employment of local human resources for mineral resources development will be limited. The supporting sectors for mining development include machine spare parts supply and maintenance services for excavation, and transport will also be operated by foreign-related enterprises. Therefore, benefits from this development scenario will not reach a wide area, but concentrate to the three enclave areas. • The social impacts caused by the development will also be limited to the three enclaves.	• Coal mining will change land features, which is likely to affect landscape, vegetation, habitats of wild animals, air quality and water quality. • Since the development will be limited mainly to three enclave areas, the environmental impact will also be limited geographically. This situation will make it relatively easier to implement environmental mitigation measures, environmental control and monitoring. • Large mining companies conduct environmental management relatively well. However, if an accident occurs, a large negative environmental impact will be caused in Tete and off-shore of Palma in Cabo Delgado. • There may be an increase in negative impact on the living environment and inhabitants' health due to dust pollution caused by coal transport, as well as by coal loading & unloading. • If the above negative impact is extremely large, there is a possibility of decline or suspension of mining operation, as well as closure of mines. In such a case, the impact on the regional economy will be serious.
B-2	**Diversified Economic Sectors Development Based on Tete-Nacala Single Corridor**	B. Regional Development Based on Diversified Econnomic Sectors	2:Tete-Nacala Single Corridor Development	• The risks caused by geographical concentration of economic development will be eased compared to Scenario 1 due to diverse economic sectors in wide areas. • Tete and Nacala Port will be connected strongly by railway and trunk road, which can transport non-coal cargoes in a long distance. With this upgraded corridor, development potentials will emerge. It will become possible to promote development of not only commercial and logistics sectors, but also manufacturing sectors, especially in major urban centres, such as Nacala and Nampula. Since the upgraded transport corridor is only one from Tete to Nacala Port, major economic development will tend to concentrate in the major urban centres and the areas along the main corridor. As a result, the intensity of such economic development will be increased significantly compared to Scenarios 1 and 2. • With this upgraded transport corridor, transport costs will be reduced greatly along the corridor. Moreover, with the upgraded urban centres on the corridor, private sectors will be able to create a value chain for agricultural sectors. • However, Palma and Pemba will not be strongly connected with the main corridor of Tete-Nacala Port. As a result, manufacturing sectors around Nacala Port will not have synergetic effect with natural gas exploitation and chemical industries in Palma.	• Since the transport corridor will be upgraded mainly from Tete to Nacala Port, the scale and extent of development benefits will be limited to the areas along the main corridor (Tete-Nacala Port). • As a result, the price decline of consumer goods and construction material due to the decrease in transport costs will not be enjoyed very widely in the region. The improvement of market access will also be limited to the corridor areas, but not in areas far from the main corridor. • With a less extensive transport corridor network, a huge size of remote areas will remain in the region.	• The environmental impact will be limited to the areas along Tete-Nacala Corridor. • In major urban centres at important nodal points, such as Nacala and Nampula, the environmental impact will increase due to the concentration in population increase and economic development.
B-3	**Diversified Economic Sectors Development Based on a Region-Wide Corridor Network**	B. Regional Development Based on Diversified Econnomic Sectors	3:Development Based on a Region-Wide Corridor Network	• Economic sectors will become more diverse and the risk caused by market demand fluctuation of mineral resources will be much eased compared with Scenarios 1 and 2. • Under the extensive upgraded transport corridor network, not only large enterprises but also small & medium enterprises (SMEs) will be able to participate in development opportunities to arise due to the upgrading of transport corridors. At the same time, a variety of economic sectors will be able to grow by utilizing various potentials scattering over a wide region. This will also benefit the national economy as a whole. • On the other hand, the improvement of such a region-wide corridor network will be costly. It will be necessary for economic sectors of the region to make continuous effort at promoting diversified and geographically wide economic development in order to generate a large enough volume of cargo to sustain the extensive corridor network.	• With the upgraded extensive corridor network, accessibility to infrastructure and services will be largely improved and time costs borne by people and businesses will be reduced in wide areas in the region. • This type of extensive corridor network has a positive effect on reducing the prices of daily commodities and construction materials. • Due to the decline of transport costs, purchasing prices of agricultural produce by small-scale farmers may also be improved. • Small-scale farmers will have opportunities to expand their markets due to better access. • Business opportunities will expand due to the geographical expansion of development areas. On the other hand, there is a risk of widening the gap between the rich and the poor. • The risks of crime and prevalence of infectious diseases may increase in wide areas due to a large volume of migration.	• If the provision of infrastructure is delayed, the negative impact on the living environment may become larger in Nacala Bay Area, because of its rapid population increase, causing rapid expansion of urban sprawl, heavy traffic congestion, increase of solid waste and sewage. • In the case of Nacala Bay Area, development of manufacturing sectors and increase of commercial and logistics activities will take place along Nacala Bay. It is likely to bring about environmental impacts in a compounding manner. • Nampula will also continue to increase its population and expand economic development. As a result, the environmental impact will become larger. The rail transport for massive coal through the central part of Nampula City might cause serious negative impacts. Moreover, the road traffic on National Road No. 13 on the main corridor will also go through the central area of Nampula City. These compounding impacts might cause serious negative impacts. Furthermore, such serious impacts might hinder economic development for Greater Nampula.

Table 5.1 Evaluation of Alternative Development Scenarios

Chapter 6 Future Socioeconomic Framework for the Nacala Corridor Region

6.1 Target Years for the Socioeconomic Framework

A Socioeconomic framework was prepared for formulating the regional development strategies for the Nacala Corridor Region. The Socioeconomic framework covers population and economy. The Socioeconomic framework indicates the foreseeable level of population growth and economic development as a result of the Nacala Corridor regional development. It is an indicative framework rather than definitive forecast.

The target years for the development strategies for the Nacala Corridor Region were set as follows:

- Short-Term Target Year: Year 2017
- Medium-Term Target Year: Year 2025
- Long-Term Target Year: Year 2035

The short-term target year was set at 2017 in consideration of the progress and prospects of a number of major projects in the Nacala Corridor Region, such as the Nampula-Cuamba trunk road upgrading, Lichinga-Montepuez trunk road upgrading, Moatize-Nacala railway upgrading, Nacala Port rehabilitation/upgrading and off-shore natural gas production in Cabo Delgado Province. These projects are planned to be completed and enter into operation by around 2017 to 2018. Immediate actions need to be taken by this time to link these projects with regional development.

The long-term target year is set at 2035. The year 2035 is the target year used by the National Development Strategy (NDS), which is under preparation by the MPD.

The medium-term target year is set at 2025, 10 years before 2035.

6.2 Future Socioeconomic Framework for the Nacala Corridor Region

The future Socioeconomic framework for the Nacala Corridor Regions is set by the following four parameters for the target years:

- Population by Province
- Gross Regional Domestic Product (GRDP)
- Labour Force by Province

The projection of the total population of Mozambique is set by using INE's projection. The provincial populations for the Nacala Corridor Region were set by modifying INE's projections, which are too high for the northern provinces. The provincial population increase trends were rather high in the years of 1997-2007 because the number of returnees was higher in those years. Therefore, provincial population growth rates in the years of 2011-2017, 2017-2025 and 2025-2035

were reduced from those of INE.

The National Development Strategy (NDS) 2015-2035 (draft version) designated two future GDP growth rates for Mozambique as follows:

- GDP growth rate including the value added to be created by the natural gas sector: 8.8% per annum at Year 2035
- GDP growth rate without the value added to be created by the natural gas sector: 7.1% per annum at Year 2035

PEDC-Nacala's future economic frameworks are prepared by using this GDP growth rate with natural gas sector used by the NDS 2015-2035 (draft)[12].

Table 6.1 Population Framework by Province, Years 2017, 2025 and 2035

	Population 10^3				Annual Growth Rate (%)	
	2011	**2017**	**2025**	**2035**	**2011-2025**	**2011-2035**
Niassa Province	1,415	1,739	2,112	2,648		
Annual Growth Rate (%)	-	3.5%	2.5%	2.3%	2.9%	2.6%
Cabo Delgado Province	1,762	1,987	2,413	3,026		
Annual Growth Rate (%)	-	2.0%	2.5%	2.3%	2.3%	2.3%
Nampula Province	4,527	5,251	6,239	7,503		
Annual Growth Rate (%)	-	2.5%	2.2%	1.9%	2.3%	2.1%
Zambezia Province*	2,022	2,365	2,787	3,263		
Annual Growth Rate (%)	-	2.6%	2.1%	1.6%	2.3%	2.0%
Tete Province	2,136	2,723	3,639	4,964		
Annual Growth Rate (%)	-	4.1%	3.7%	3.2%	3.9%	3.6%
Nacala Corridor Region	11,862	14,065	17,190	21,404		
Annual Growth Rate (%)	-	2.9%	2.5%	2.2	2.7%	2.5%
Other Area	11,188	13,064	15,975	20,150		
Annual Growth Rate (%)	-	2.6%	2.5%	2.3%	2.6%	2.5%
Mozambique	23,050	27,129	33,165	41,554		
Annual Growth Rate (%)	-	2.8%	2.5%	2.3%	2.6%	2.5%

Source: JICA Study Team

[12] According to the information given by an MPD officer in charge of the NDS, this GDP growth rate will be used in the final version of the NDS 2015-2035 of Mozambique.

Table 6.2 GRDP and GRDP by Sector, Years 2017, 2025 and 2035

	2007	2011	2017	2025	2035
Gross Regional Domestic Product (GRDP)					
GRDP of the Nacala Corridor Region Total (million MT in 2011 prices)	108,718	119,414	188,000	377,000	936,000
GRDP of the Nacala Corridor Region Total (million MT in 2003 prices)	45,859	64,254	101,000	203,000	503,000
GRDP at Factor Cost by Sector (million MT in 2003 prices)					
Agriculture, Livestock, Fishery and Forestry Sector	17,288	23,242	34,800	60,200	107,800
Mining Sector	47	85	2,000	23,300	124,700
Manufacturing, Construction and Utilities Sector	9,076	11,109	18,000	34,900	88,200
Service Sector	18,466	23,192	35,500	63,300	129,600

Source: JICA Study Team

Table 6.3 GRDP by Province, Years 2017, 2025 and 2035

	GRDP (2003 Constant Price) (million MT)				**Annual Growth Rate** (%)	
	2011	**2017**	**2025**	**2035**	**2011-2025**	**2011-2035**
Niassa Province	5,272	8,000	14,200	27,800		
Annual Growth Rate (%)	-	7.2%	7.4%	6.9%	7.3%	7.2%
Cabo Delgado Province	8,152	12,600	31,400	143,500		
Annual Growth Rate (%)	-	7.5%	12.1%	16.4%	10.1%	12.7%
Nampula Province	26,551	40,700	72,700	148,500		
Annual Growth Rate (%)	-	7.4%	7.5%	7.4%	7.5%	7.4%
Zambezia Province*	7,615	11,600	20,600	41,000		
Annual Growth Rate (%)	-	7.3%	7.4%	7.1%	7.4%	7.3%
Tete Province	10,038	17,400	43,000	89,400		
Annual Growth Rate (%)	-	9.6%	12.0%	7.6%	11.0%	9.5%
Nacala Corridor Region	57,629	90,300	181,900	450,200		
Annual Growth Rate (%)	-	7.8%	9.1%	9.5%	8.6%	8.9%
Other Area	120,143	185,004	324,626	698,971		
Annual Growth Rate (%)	-	7.5%	7.3%	8.0%	7.4%	7.6%
Mozambique	177,772	275,304	506,526	1,149,171		
Annual Growth Rate (%)	-	7.6%	7.9%	8.5%	7.8%	8.1%

Source: JICA Study Team

Table 6.4 GRDP per Capita by Province, Years 2017, 2025 and 2035

	GRDP per Capita (thousand MT in 2003 Constant Price)				Annual Growth Rate (%)	
	2011	2017	2025	2035	2011-2025	2011-2035
Niassa Province	3.73	4.60	6.72	10.50		
Annual Growth Rate (%)	-	3.6%	4.9%	4.6%	4.3%	4.4%
Cabo Delgado Province	4.63	6.34	13.01	47.42		
Annual Growth Rate (%)	-	5.4%	9.4%	13.8%	7.7%	10.2%
Nampula Province	5.86	7.75	11.65	19.79		
Annual Growth Rate (%)	-	4.8%	5.2%	5.4%	5.0%	5.2%
Zambezia Province*	3.77	4.90	7.39	12.57		
Annual Growth Rate (%)	-	4.5%	5.3%	5.4%	4.9%	5.1%
Tete Province	4.70	6.39	11.82	18.01		
Annual Growth Rate (%)	-	5.3%	8.0%	4.3%	6.8%	5.8%
Nacala Corridor Region	4.86	6.42	10.58	21.03		
Annual Growth Rate (%)	-	4.8%	6.4%	7.1%	5.7%	6.3%
Other Area	10.74	14.16	20.32	34.69		
Annual Growth Rate (%)	-	4.7%	4.6%	5.5%	4.7%	5.0%
Mozambique	7.71	10.15	15.27	27.65		
Annual Growth Rate (%)	-	4.7%	5.2%	6.1%	5.0%	5.5%

Source: JICA Study Team

Table 6.5 Proportion of GRDP per Capita to National Average, Years 2017, 2025 and 2035

	2011	2017	2025	2035
Niassa Province	0.48	0.45	0.44	0.38
Cabo Delgado Province	0.60	0.62	0.85	1.71
Nampula Province	0.76	0.76	0.76	0.72
Zambezia Province*	0.49	0.48	0.48	0.45
Tete Province	0.61	0.63	0.77	0.65
Nacala Corridor Region	0.63	0.63	0.69	0.76
Other Area	1.39	1.40	1.33	1.25
Mozambique	1.0	1.0	1.0	1.0

Source: JICA Study Team

Table 6.6 Labour Force by Sector, Years 2017, 2025 and 2035

	2007	2011	2017	2025	2035
Labour Force (thousand persons)					
Total of the Nacala Corridor Region	3,833	4,369	5,243	6,772	9,635
Agriculture, Livestock, Fishery and Forestry	3,249	3,701	4,390	5,535	7,382
Mining	12	12	20	52	72
Manufacturing	90	117	135	204	385
Energy	4	4	6	9	22
Construction	49	57	73	111	281
Commerce and Finance	259	300	374	520	792
Transport an Communications	19	29	28	39	79
Other Services	151	149	218	303	621

Source: JICA Study Team

Chapter 7 Spatial Structure of the Nacala Corridor Region

7.1 Spatial Structure of Nacala Corridor Region

The Spatial Structure of the Nacala Corridor Region is expressed in the following two ways:

1) Transport corridor network, and

2) Hierarchical system of urban centres.

7.2 Transport Corridor Network for the Nacala Corridor Region

PEDEC-Nacala recommends the spatial structure of Nacala Corridor Region in 2035 as shown in Figure 7.1. The blue arrows indicate the proposed corridor routes, while the brown arrows are the existing transportation routes. The corridor structure is designed in such a way that Nacala Port will be connected with Lilongwe of Malawi and Lusaka (or Serenje) of Zambia for approximately 2,000 km as an international corridor and the effect of improved access will disseminate to as many areas in the Mozambican part as possible to enhance people's mobility and promote development along the routes.

(1) Main Corridors

- **[M-1]** Nacala-Nampula-Cuamba-Lilongwe (Malawi)-Lusaka (Zambia)
- **[M-2]** Cuamba-Tete
- **[M-3]** Cuamba-Lichinga

The main corridor shown in solid blue arrows starts at Nacala at the eastern end, runs westward through Nampula and reaches Cuamba in Niassa Province, about 530 km west of Nacala. The main corridor splits at Cuamba into three directions: in the northwest direction to Lichinga, in the western direction to Lilongwe of Malawi and further to Lusaka (or Serenje) of Zambia and in the south western direction to Moatize of Tete Province through Malawi.

These main corridors will be served both by railways and trunk roads. This main part of the Nacala Corridor will ensure faster and lower cost transportation of cargoes, especially for long haul transportation, thus accelerating exports and imports for Malawi, Zambia and Mozambique. The Cuamba-Lilongwe-Lusaka Main Corridor [M-1] will ensure imports of goods at lower prices and increase the possibility of exporting goods produced in Malawi and Zambia through Nacala Port. The Cuamba-Lichinga Main Corridor [M-3] would dramatically change the status of Niassa Province, from a dead-end province with weak linkages with other areas to a province exporting abundant agro-related and wood-related products to other areas and overseas through the new corridor. Niassa Province could become a new international gateway to Malawi and southern Tanzania through water transport on Niassa Lake (Malawi Lake). The Cuamba-Tete Main Corridor [M-2] would add a new outlet for Tete Province, which has been an important node of the transportation network connected with Malawi, southern Zambia, Zimbabwe and Beira.

(2) Sub-Corridors

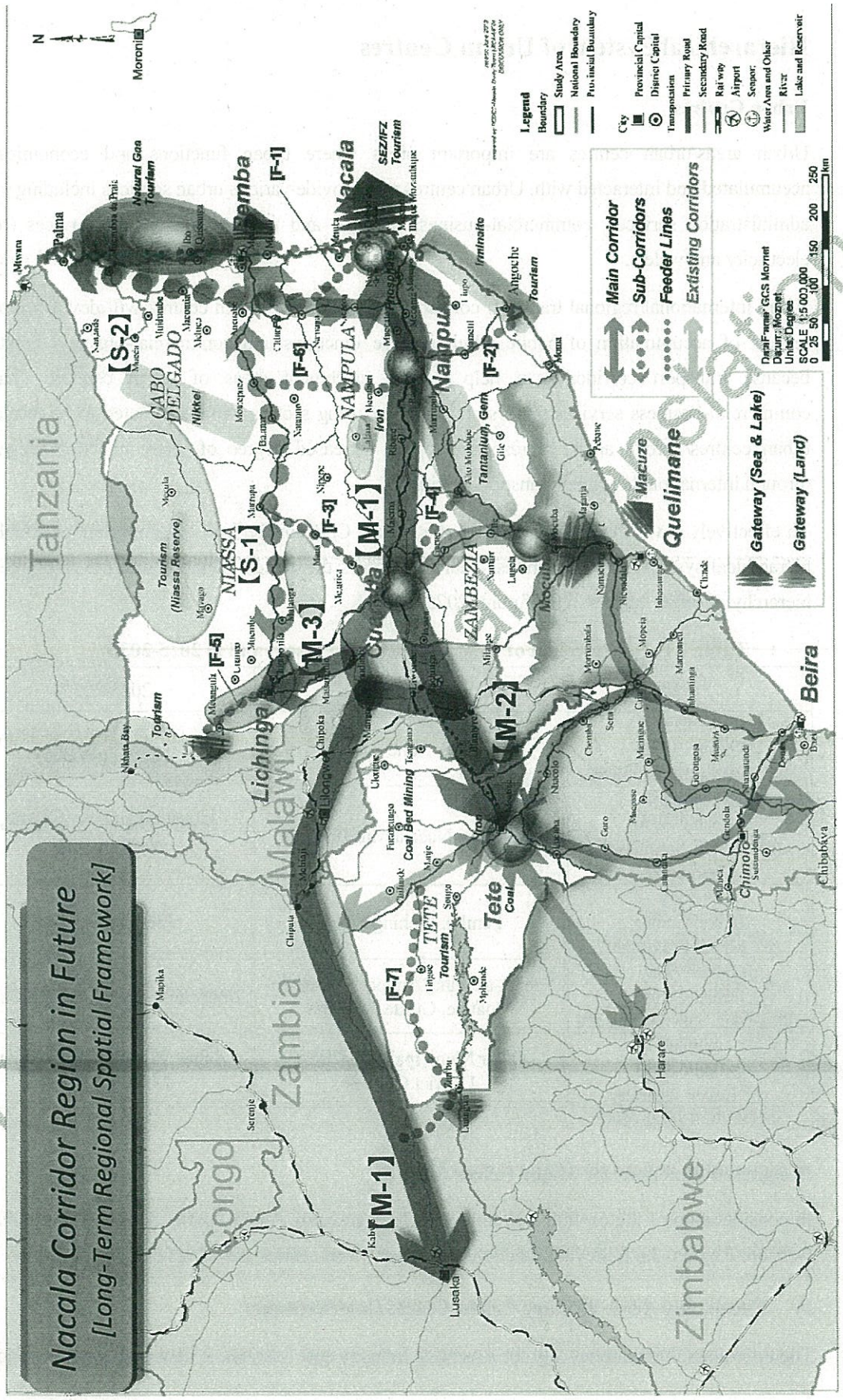
- **[S-1]** Lichinga-Pemba
- **[S-2]** Nacala-Pemba-Palma

Two sub-corridors are shown in big blue dashed lines in Figure 7.1. One runs east to west from Pemba of Cabo Delgado Province to Lichinga of Niassa Province for about 700 km, while the other runs south to north from Nacala all the way up to Palma in Cabo Delgado Province through Pemba for about 660 km. While both of these sub-corridors are served by roads, there may be a possibility of a natural gas pipeline connection for the Palma-Nacala section. The Lichinga-Pemba sub-corridor accommodates road traffic between Pemba and Niassa Province and provides an alternative route to the Nacala-Nampula-Cuamba-Lichinga main corridor in the event of hindrances such as emergencies and traffic congestion. The Nacala-Palma sub-corridor serves the traffi delivering goods to Palma for the natural gas project and tourist destinations along the coastal area and islands of Cabo Delgado Province and Nampula Province.

(3) Feeder Lines

PEDEC-Nacala proposes the following seven feeder lines shown in small blue dashed arrows in Figure 7.1. They would play a crucial role in expanding the impact of the corridor development spatially to every corner of rural areas.

- **[F-1]** Nacaroa-Nacala Feeder Line: to ensure easier access to Nacala Port to/from the north
- **[F-2]** Nampula-Angoche Feeder Line: to support development of the southern part of Nampula Province through promoting fishery and agriculture
- **[F-3]** Cuamba-Marrupa Feeder Line: to support development of agriculture along the route and strengthen the mutually supportive function of the Lichinga-Pemba Sub-Corridor and Nacala-Nampula-Cuamba Main Corridor
- **[F-4]** Cuamba-Gurue-Alto Molocue Feeder Line: to stimulate agriculture production along the route in northern Zambezia Province
- **[F-5]** Lichinga-Metangula Feeder Line: to promote development of agriculture and tourism along the route and create a new international gateway to Malawi and Tanzania by water transport
- **[F-6]** Nampula-Montepuez Feeder Line: to promote development of agriculture and tourism along the route and strengthen the mutually supportive function of the Lichinga-Pemba Sub-Corridor and Nacala-Nampula-Cuamba Main Corridor
- **[F-7]** Tete-Fingoe-Zumbu Feeder Line: to promote agriculture production in the fertile land along the route and open a new outlet to the southern part of Zambia



Source: JICA Study Team

Figure 7.1 Spatial Structure for the Nacala Corridor Region in 2035 (Long-Term Future)

7.3 Hierarchical System of Urban Centres

7.3.1 Urban Centres

Urban areas/urban centres are important areas where urban functions and economies are accumulated and interacted with. Urban centres will provide various urban services including public administration services, commercial-business services and urban infrastructure services (roads, electricity and water).

When international/regional transport corridors are developed, urban centres will develop more in respect of accumulation of public administrative functions and commercial-business functions, because transport corridors can help expand catchment areas of urban centres. That is, commercial-business services sectors and manufacturing sectors will be attracted to be located in urban centres/ urban areas, in response to the increased degree of interconnection/integration through international/regional transport corridors.

To effectively cover the wide region like the Nacala Corridor Region, it is important to establish a hierarchical system of urban centres. Table 7.1 shows the present situation and the recommended hierarchy of urban centres in the future (2025-2035).

Table 7.1 Classification of Urban Centres at Present and in 2025-2035

Level	Present	2025-2035
Primary Urban Centre (1st Level: International)	None	Nacala Bay Area (Nacala and Nacala-a-Velha)
Secondary Urban Centre (2nd Level: National & Regional)	Nampula, Nacala Municipality	Greater Nampula, Cuamba, Tete-Moatize
Tertiary Urban Centre (3rd Level: Provincial)	Pemba, Lichinga, Tete	Pemba, Lichinga
Quaternary Urban Centre (4th Level: Sub-Provincial)	Nacala-a-Velha, Angoche, Cuamba, Moatize, Gurue, Mocuba	Angoche, Gurue, Mocuba, Palma
Quinary Urban Centre (5th Level: District)	Other Municipality Centres/ District Centres	Other Municipality Centres / District Centres

Source: JICA Study Team

7.3.2 Designated Functions for Major Urban Centres

In consideration of the Overall Development Strategies and Future Spatial Structure of the Nacala Corridor Region, the following functions for major urban centres are designated for the future:

1) Nacala Bay Area: Primary Urban Centre (International)

The First-class International City for Business, Industry and Tourism: a New Gateway for Africa

2) **Greater Nampula: Secondary Urban Centre (National & Regional)**

Regional Growth Pole for the Northern Region

3) **Cuamba City: Secondary Urban Centre (National & Regional)**

Inland Regional Logistics and Industrial Centre

4) **Tete City with Moatize: Secondary Urban Centre (National & Regional)**

Inland Regional Administrative and Business Centre with Support Base for Coal Mining

5) **Lichinga City: Tertiary Urban Centre (Provincial)**

Provincial Growth Pole and Service Centre with Academic-Scientific Centre and Wood Processing Base

6) **Pemba City: Tertiary Urban Centre (Provincial)**

Provincial Growth Pole and Service Centre with Support Base for Natural Gas Exploitation, as well as with Tourism Base

7) **Angoche: Sub-Provincial Urban Centre**

Commercial and Service Centre

8) **Gurue: Sub-Provincial Urban Centre**

Commercial and Service Centre

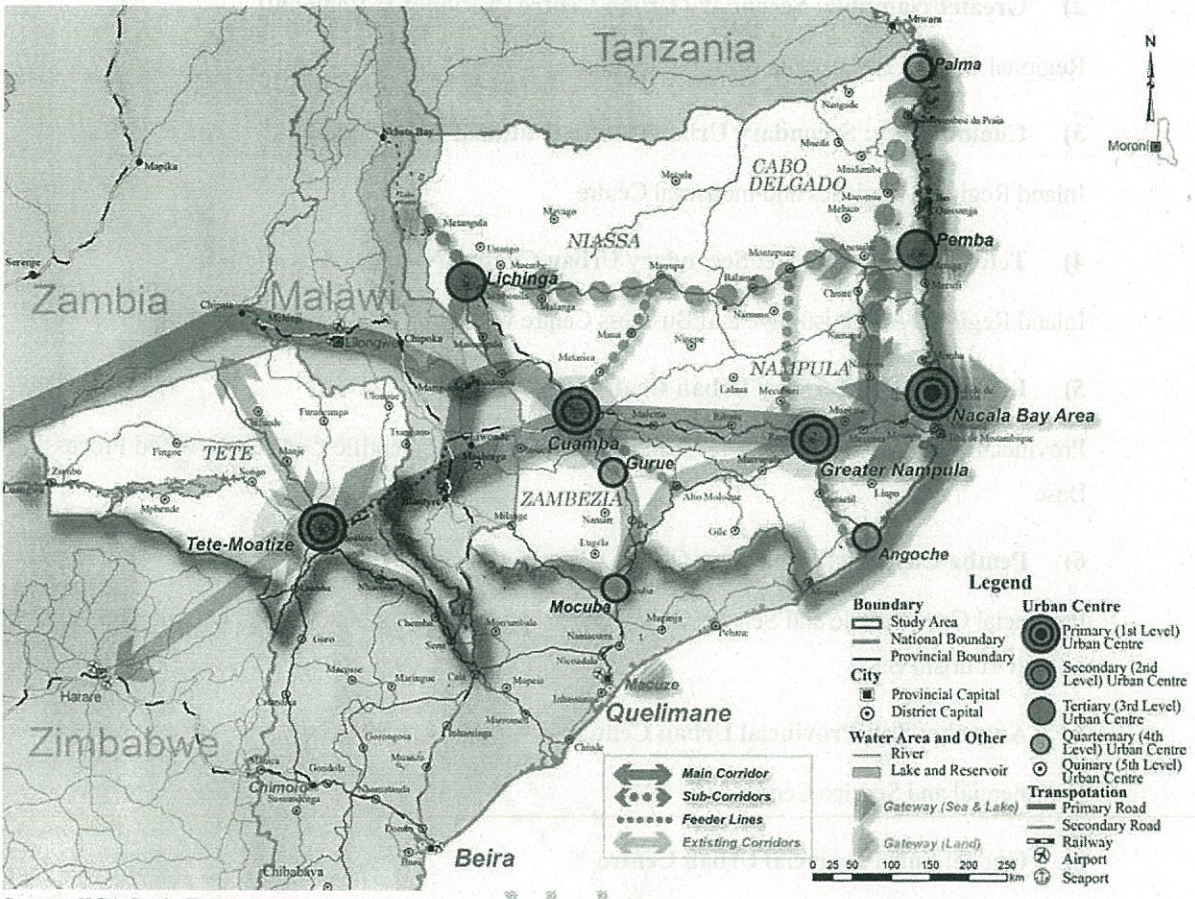
9) **Mocuba: Sub-Provincial Urban Centre**

Commercial, Service and Industrial Centre with Industrial Production Base

10) **Palma: Sub-Provincial Urban Centre**

Commercial, Service and Industrial Centre for Natural Gas Exploitation and Chemical Industrial Base

Figure 7.2 shows the hierarchical pattern of urban centres in the Nacala Corridor Region. Table 7.2 and Figure 7.3 show the future urban populations of major urban centres.



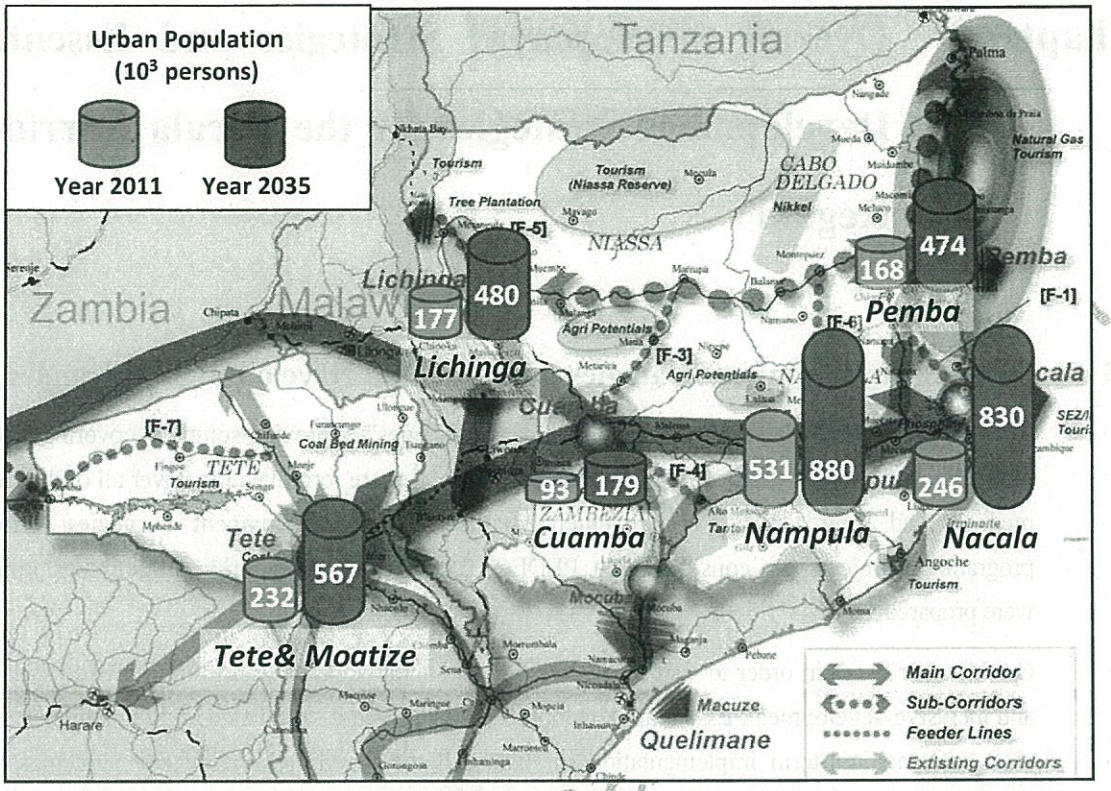
Source: JICA Study Team

Figure 7.2 Hierarchical Pattern of Urban Centres in the Nacala Corridor Region, Year 2025-2035

Table 7.2 Urban Population of Major Urban Centres in 2011 and 2035

	Year 2011	Year 2035
Nacala Bay Area	246,000	830,000
Greater Nampula	531,000	880,000
Cuamba City	93,000	180,000
Tete & Moatize	232,000	567,000
Lichinga City	177,000	480,000
Pemba City	168,000	470,000

Source: JICA Study Team



Source: JICA Study Team

Figure 7.3 Urban Populations of Major Urban Centres, Years 2011 and 2035

Chapter 8 Overall Development Strategies and Essential Development Strategies for the Nacala Corridor Region

8.1 Overall Development Strategies and Essential Development Strategies

PEDEC-Nacala formulates "Overall Development Strategies" to provide solutions covering a wide range of overall issues. The Overall Development Strategies are formulated to cover all of the short, medium and long terms. For implementing the Overall Development Strategies, priority programmes/projects are considered. In PEDEC-Nacala, ideas on priority programmes/projects were prepared.

On the other hand, in order to start up regional development so as to lead to region-wide dynamic and inclusive development, Essential Development Strategies are formulated and recommended for short and medium-term implementation in line with the Overall Development Strategies. For implementing the Essential Development Strategies, especially important priority programmes/projects are selected out of the priority programmes/projects.

8.2 Overall Development Strategies for the Nacala Corridor Region

For achieving the selected development scenario for the Nacala Corridor Region, PEDEC-Nacala formulated the following seven overall strategies for the development of the Nacala Corridor Region.

(1) Effective Region-Wide Transport and Logistics System

- Creation of an effective region-wide transport and logistics system by ensuring that key transport projects could come into operation, the railway could be used for general cargoes, containers and passengers, not limited to coal transport, and inter-modal cargo transhipment could be secured among sea transport, rail transport and road transport.

(2) Foundation for Manufacturing Sectors in Major Urban Centres

- Strengthening of the foundation for manufacturing sectors at major urban centres in addition to commercial and logistics functions

(3) Agriculture and Other Economic Sector Development oriented to Non-Mineral Resources

- Promotion of agricultural development and other economic sectors development that are oriented toward non-mineral resources by implementing support measures in addition to upgrading of the transport corridors.

(4) Environmental Management and Land Management

- Strengthening of environmental management for increasing economic and development activities, and land management for assuring responsible agricultural investment (RAI) guidelines for agriculture and forestry development.

(5) Human Resources Development

- Strengthening of human resources development through capacity development for both basic education and technical and vocational education and training (TVET)

(6) Coordination and Promotion of Integrated Regional Development

- Establishment of an institutional framework and implementation of capacity development for coordinating and promoting integrated development

(7) Deep Inclusive Development

- Coping with emerging social problems, socially vulnerable people and geographically remote areas for promoting region-wide inclusive development

8.3 Essential Development Strategies

In line with the directions and emphases of the Overall Development Strategies, Essential Development Strategies are formulated and the following necessary actions are recommended:

(1) Securing of the Transport Function of the Nacala Corridor

For long-term effort at establishment of a region-wide corridor network, it is necessary to start with the securing of the transport function of the Main Corridors by the following actions:

- Assuring Coal Railway Transport from Moatize to Nacala Port
- Assuring Non-Coal Railway Transport for the Nacala Corridor
- Port-Railway Integration at Nacala Port
- Port-Road Integration in Nacala Bay Area
- Securing the Upgraded Road Function of the Nacala Corridor
- Capacity Development of Railway Regulatory Function of INATTER

(2) Development of the Foundation for Economic Development in Nacala Bay Area, Greater Nampula and Palma

For developing diversified economic sectors, it is essential to take advantage of emerging development potential due to the upgrading transport corridor. Such development potential will arise significantly in Nacala Bay Area and Greater Nampula. Moreover, by taking advantage of prospective natural gas exploitation in northern Cabo Delgado, it is possible to develop chemical industries using natural gas (including methanol and ammonia) in Palma.

However, it is not an easy task to start up economic sector development considering the present poor infrastructure situation. Therefore, it is necessary to start with the development of the

foundation for economic sector development in Nacala Bay Area, Greater Nampula and Palma by taking the following actions:

- Development of the Foundation (Investment Promotion, Roads, Electricity and Water Supply, Other Urban Infrastructure and Services) for Manufacturing Sectors in Nacala Bay Area, Greater Nampula and Palma
- Water Resource Development and Urban Water Supply for Nacala Bay Area, Greater Nampula and Palma
- Securing of Electricity Supply in Nacala Bay Area, Greater Nampula and Palma

(3) Promotion of Agricultural Development by Implementing ProSAVANA Strategies

PEDEC-Nacala recommends the promotion of agricultural development by implementing ProSAVANA principles and strategies not only in the areas along the Main Corridor (Lichinga-Mandimba-Cuamba-Nampula-Nacala) but also in the areas near coal exploitation areas in Tete and natural gas exploitation areas in northern Cabo Delgado.

- Implementation of ProSAVANA Strategies in the areas along the Main Corridors including the area near Nacala
- Implementation of ProSAVANA Strategies near Coal Production Areas and Natural Gas Production Areas

(4) Strengthening of Implementation System and Capacity for Environmental Management and Land Management

In order to cope with increasing environmental problems and land disputes due to increasing economic activities, development activities and investments in the course of regional development, it is essential to start with the strengthening of implementation systems and capacity development for environmental management and land/forest management as follows:

- Strengthening of Implementation System for Environmental Management including Environment Monitoring
- Establishment of Environmental Laboratories (Maputo, Tete, Nacala and Pemba)
- Capacity Development of Technical Personnel for Environmental Laboratories
- Capacity Development for Monitoring of Conformity with RAI Guidelines
- Capacity Development of Appropriate Operation of DUAT System in accordance with Land/Forest Management Policies

(5) Strengthening of Basic Education and Industrial Human Resources Development

Considering the present situation of primary and secondary education in the Nacala Corridor Region, it is essential to start with the strengthening of basic education (primary and secondary education) for enriching people's lives and preparing for employment. At the same time, it is also essential to establish and improve technical and vocational education and training institutions.

- Increase of Budgets for Improving the Quality of Basic Education
- Encouragement of Community Participation in Improvement of Quality of Primary Schools in Communities
- Strengthening of Secondary Education through Focus on Science and Mathematics Education
- Establishment of Technical and Vocational Education and Training (TVET) Institutions

(6) Establishment and Capacity Development of Institutional Framework for Coordinating and Promoting Integrated Regional Development

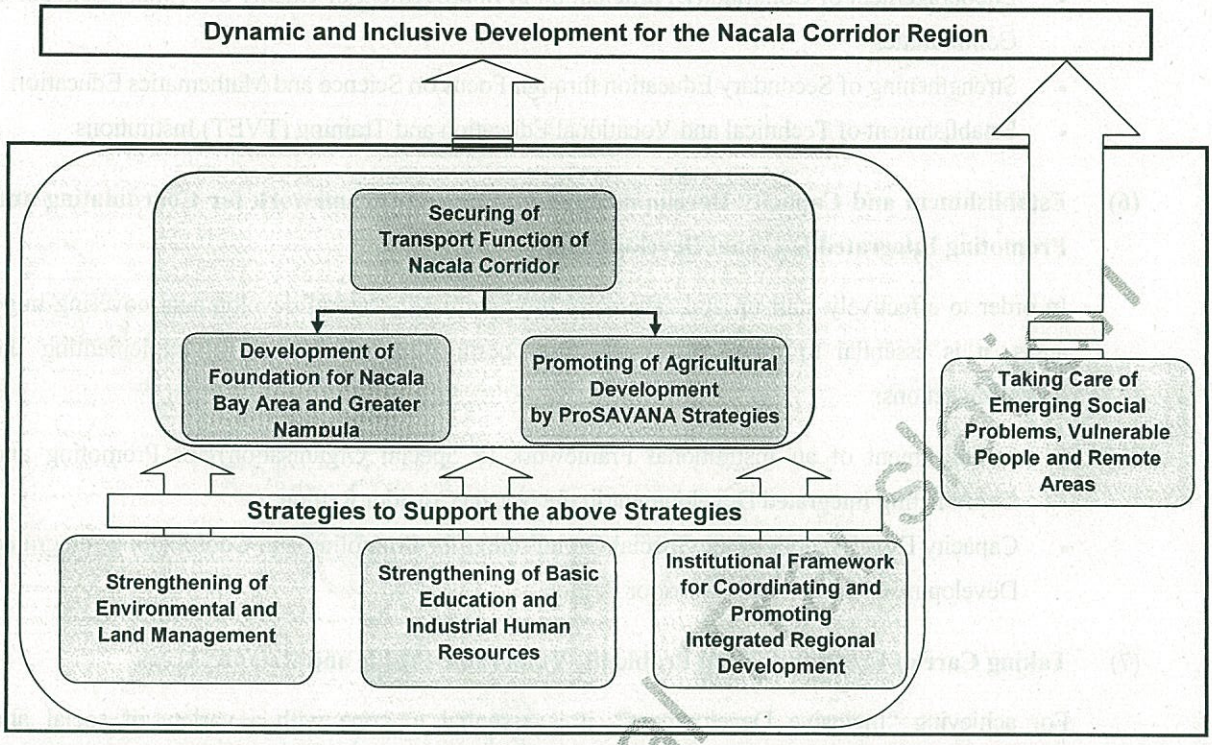
In order to effectively start up and efficiently promote multi-sectoral development covering huge areas, it is essential to establish an effective coordinating mechanism by implementing the following actions:

- Establishment of an Institutional Framework (a Special Organisation) for Promoting and Coordinating Integrated Development in the Nacala Corridor Region
- Capacity Development of the Special Organisation for Promoting and Coordinating Integrated Development in the Nacala Corridor Region

(7) Taking Care of Emerging Social Problems, Vulnerable People and Remote Areas

For achieving "Inclusive Development", it is essential to cope with a variety of social and environmental problems to emerge in the course of promoting dynamic development in the Region. Special attention should also be paid to socially vulnerable people, who might not be able to participate in prospective development opportunities, and to geographically remote areas, which might not be able to be well covered by a region-wide corridor network and by a hierarchical urban centre system. The following actions are among the starting points required for this kind of effort:

- Paying Attention to and Preparation for Emerging Social and Environmental Problems
- Conducting Dialogues with Groups of Vulnerable People and Remote Area People
- Upgrading of Health Services Capacity in Major Urban Centres
- Strengthening of Primary Health Care System in Rural Areas



Source: JICA Study Team

Figure 8.1 Composition of Essential Development Strategies

8.4 Medium and Long-Term Actions to be Taken in Line with Overall Development Strategies

After taking necessary actions to implement the Essential Development Strategies for starting up regional development and promoting inclusive development in the short and medium terms, further actions (medium and long-term actions) should be taken. These actions are summarised in Tables 8.1 through 8.3.

Table 8.1 Medium and Long-Term Actions to be Taken for Implementing Overall Development Strategies

	Overall Development Strategies	
	Essential Development Strategies Short- and Medium-Term Actions to be Implemented	Medium- and Long-Term Actions to be Implemented
(1) Effective Region-Wide Transport and Logistics System	Start with Securing of Transport Function of the Main Corridor (Nacala-Nampula-Nayuchi-Nkaya-Moatize) (by Capitalizing on Ongoing and Planned Transportation Projects) - Assuring of Coal Railway Transport from Moatize to Nacala Port - Assuring of Non-Coal Railway Transport for the Nacala Corridor - Port-Railway Integration at Nacala Port - Port-Road Integration in Nacala Bay Area - Securing of the Upgraded Road Function of the Nacala Corridor - Capacity Development of Railway Regulatory Body (INATTER)	In the Medium and Long Terms, Develop a Region-Wide Corridor Network by Extending Sub-Corridors and Feeder Lines - Strengthening of Cuamba-Lichinga Route of Northern Railway - Upgrading of Nkaya-Lilongwe-Mchinji Route of Malawi Railway System - Upgrading of Train Operation at Mchinji-Chipata - Extending of Mchinji-Chipata up to Serenje to connect with Tazara Railway - Strengthening of Capacity of Road Maintenance
(2) Foundation for Manufacturing Sectors in Major Urban Centres	Start with Nacala Bay Area and Greater Nampula for Development of the Foundation for and Promotion of Manufacturing Sectors - Development of Foundation for Manufacturing Sectors in Nacala Bay Area and Greater Nampula - Water Resources Development and Urban Water Supply for Nacala Bay Area and Greater Nampula - Securing of Electricity Supply in Nacala Bay Area and Greater Nampula - Development of Foundation for Natural Gas Exploitation and Natural Gas Related Chemical Industries, including Public Port, Electricity Supply, Water Supply, Urban Functions and Social Services, in Palma	In the Medium and Long Terms, Develop the Foundation for Manufacturing Sectors in Other Major Urban Centres, such as Tete-Moatize, Cuamba City, Lichinga City, Pemba City and Palma - Tete/Moatize as an Inland Regional Administration and Business Centre on the Main Corridor - Cuamba as an Inland Regional Logistics and Industrial Centre on the Main Corridor - Palma as a Chemical Industrial Centre - Pemba as a Provincial Growth Pole and Service Centre Including the Function of Supporting Base for Natural-Gas Exploitation and Tourism Centre - Lichinga as Provincial Growth Pole and Service Centre Including the Function of Academic and Research Function, as well as Wood Processing Industry
(3) Agriculture and Other Economic Sector Development Oriented to Non-Mineral Resources	Start with Areas Along the Main Corridor from Nacala, Nampula, Cuamba, Mandimba and Lichinga - Implementation of ProSAVANA Strategies in the Areas Along the Main Corridors Including the Area Near Nacala - Implementation of ProSAVANA Strategies near Coal Production Areas and Natural-Gas Production Areas	In the Next, Implement ProSAVANA Strategies and Promote Other Economic Sectors in Areas along Sub-Corridors and Feeder Lines - Areas Along Lichinga-Marrupa Sub-Corridor - Areas Along Cuamba-Marrupa Feeder Line - Areas Along Marrupa-Montepuez Sub-Corridor - Tourism Development

Source: JICA Study Team

Table 8.2 Medium and Long-Term Actions to be Taken for Implementing Overall Development Strategies

	Overall Development Strategies	
	Essential Development Strategies Short- and Medium-Term Actions to be Implemented	Medium- and Long-Term Actions to be Implemented
(4) Environmental Management and Land Management	Start with Strengthening of Implementation System and Capacity Development for Environmental Monitoring and Land/Forestry Management - Strengthening of Implementation System for Environmental Management including Environment Monitoring - Establishment of Environmental Laboratories (Maputo, Tete, Nacala and Pemba) - Capacity Development of Technical Personnel for Environmental Laboratories - Capacity Development for Monitoring of Conformity with RAI Guidelines - Capacity Development of Appropriate Operation of DUAT System in Accordance with Land/Forest Management Policies	Furthermore, Continue the Strengthening of Implementation Systems and Capacity Development for Environmental Management and Land/Forest Management - Increase of Technical Personnel for Environmental Management - Expansion of Variety of Chemical Substances to be Analysed by Environmental Laboratories - Capacity Development of Technical Personnel for Environmental Laboratories
(5) Human Resources Development	Start with Strengthening of Basic Education and Industrial Human Resources Development - Increase of Budgets for Improving the Quality of Basic Education - Encouragement of Community Participation in Improvement of the Quality of Primary Schools in Communities - Strengthening of Secondary Education Through Focus on Science and Mathematics Education - Establishment of Vocational Education and Training Institutions	Furthermore, Continue the Strengthening of Basic Education, Especially in Remote Areas, and Improvement of TVET Institutions by Paying Attention to the Needs of Economic Sectors - Continuation of Improvement of Basic Education - Paying More Attention to Remote Areas for Improvement of Basic Education - Improvement of Vocational Education and Training Institutions in Accordance with Needs of Industrial and Business Sectors
(6) Coordination and Promotion of Integrated Regional Development	Start with Establishment of and Capacity Development for a New Organization Specially Designed for Coordination and Promotion of Integrated Development - Establishment of Institutional Framework for Promoting and Coordinating Integrated Development in the Nacala Corridor Region - Capacity Development for Promoting and Coordinating Integrated Development in the Nacala Corridor Region	Continue the Coordination and Promotion for Integrated Development by Revising PEDEC Strategies Based on Monitoring and Evaluation - Revision of PEDEC Strategies Based on Analysis of Results of Monitoring and Evaluation - Improvement and Adjustment of Mechanism and Organization for Promoting and Coordinating Integrated Development in the Nacala Corridor Region - Coordination and Promotion for Implementation of Revised PEDEC Strategies

Source: JICA Study Team

Table 8.3 Medium and Long-Term Actions to be Taken for Implementing Overall Development Strategies

	Overall Development Strategies	
	Essential Development Strategies Short- and Medium-Term Actions to be Implemented	Medium- and Long-Term Actions to be Implemented
(7) Deep Inclusive Development	Start with Preparation for Taking Care of Emerging Social and Environmental Problems, Vulnerable People and Remote Areas - Paying Attention to and Preparation for Emerging Social and Environmental Problems - Conducting Dialogues with Groups of Vulnerable People and Remote Area People - Upgrading of Health Services Capacity in Major Urban Centres - Strengthening of Primary Health Care System in Rural Areas	Continue the Implementation of Measures Against Social and Environmental Problems and Special Measures for Taking Care of Vulnerable People and Remote Areas - Strengthening of Capacity for Coping with Social and Environmental Problems due to Increasing Economic and Development Activities - Implementation of Special Measures for Vulnerable Groups of People - Implementation of Special Measures for Remote Areas - Further Expansion of Health Services Capacity in Urban Centres Including Major and Minor Urban Centres - Further Expansion of Primary Health Care System in Rural Areas

Source: JICA Study Team

Chapter 9 Action Plan for Short and Medium-Term High Priority Projects

9.1 Selection of Short and Medium-Term "High Priority Projects"

The 74 projects selected as the priority projects to be implemented until 2035 in Chapter 19 of the Draft Strategy Report were further reviewed in order to select "high priority projects" to be initiated by 2017 and completed by 2025 in the short and medium terms. The following criteria were applied to identify "High Priority Projects":

- Especially important projects in making the transport corridors effectively function as an initial driving force for development in the Nacala Corridor Region
- Especially effective projects in mitigating negative impacts of transport corridors upgrading and economic sectors development on the natural and social environments
- Especially effective projects in promotion of economic sectors by taking advantage of development opportunities to arise due to the effectively upgraded transport corridors
- Especially important projects in starting up regional development so that other important development efforts could be implemented smoothly
- Higher level of maturity of projects whose necessity and methodology have been well understood by concerned agencies and stakeholders
- Projects whose negative environmental and social impacts could be mitigated certainly by technologically established measures

As a result, a total of 46 projects were selected as the "short- and medium-term High Priority Projects" as listed below. Preparation of all these short- and medium-term high priority projects should be started immediately. Some projects will be implemented and completed in the short term until 2017, while others will be implemented and completed in the medium term of 2018-2025 because a longer time is required for survey, design and construction, as well as decision-making.

<u>Nacala International Gateway Programme</u>

- Nacala Industrial Park Project
- Nacala Industrial Belt Area Development Project
- Nacala Port Access Road Project
- Nacala Multi-Modal Terminal and Railway Shunting Yard Project
- Nacala Thermal Power Plant Project
- Nacala Urban Water Supply Expansion Project
- SEZ/IFZ Management Improvement Project

Nampula Regional Growth Centre Programme

- Nampula Southern Road Bypass Project
- Nampula Railway Bypass Project
- Nampula Multi-Modal Terminal and Railway Shunting Yard Relocation Project
- Railway Crossings Improvement Project

Logistics Modernization Sector Programme

- Malawi Central Inland Container Depot Project (Malawi)
- Chipata Inland Container Depot Project (Zambia)
- N-13 Highway Service Stations and Truck Terminals Establishment
- Mandimba One Stop Border Post Project
- Mocuba SEZ Project
- Railway Regulator Capacity Development Project

Cuamba Logistics and Industrial Centre Programme

- Cuamba Bypass Road Project
- Cuamba Industrial Park Project
- Cuamba-Marrupa Road Upgrade projects

Palma Natural Gas Exploitation and Chemical Industrial Centre Programme

- Palma Port Project
- Palma Thermal Power Plant Project
- Palma Urban Water Supply Project
- Palma Urban Expansion Project

Water Resources Development Sector Programme

- Meteorological and Hydrological Observation Network System and Capacity Development Project
- Sanhute Dam Project (for Urban Water Supply to Nacala)
- Project for Lurio River Water Resources Development for Water Supply to Nacala Bay Area
- Monte Tiza Dam Project (for Urban Water Supply to Nampula)

Power and Energy Sector Program

- Nampula-Nacala Power Substation Reinforcement Project
- Chimuara-Namialo-Nacala Transmission Line Project
- Palma-Pemba-Nacala Transmission Line Project
- Tete Coal Briquette Project

Social and Environmental Management Sector Programme

- Environmental Management Capacity Development Project

- Project for Strengthening on DUAT Acquisition Process
- Project for Capacity Development on Resettlement Process

Human Resources Development Programme

- Community-Based School Management Program
- Programme for Strengthening of Secondary Education with Focus on Science and Mathematics Education
- Nacala Medium-Level Technical and Vocational School Project
- Cabo Delgado Medium-Level Technical and Vocational School Project
- Nacala Superior Polytechnic Project
- Cabo Delgado Superior Polytechnic Project

Coordination and Promotion of Integrated Development Programme

- Nacala Corridor Regional Development Management Reinforcement Project

Investment Promotion Sector Programme

- Large-Scale Projects and Local Industry Linkage Project

Support Programme for Remote Areas

- Support Programme for DUAT Acquisition for Small-Scale Farmers in Remote Areas
- Programme for Primary School Development in Remote Areas
- Programme for Health Centre Development in Remote Areas

9.2 Outline of Short and Medium-Term High Priority Projects

The ideas on Short and Medium-Term High Priority Projects are summaried under each programme in Tables 9.1 through 9.12.

Table 9.1 Nacala International Gateway Programme

Project	Outline	Province	Executing Agency
Nacala Industrial Park Project	An international-class industrial park with a full set of on-site and off-site infrastructures will be established in order to create a new manufacturing base capitalising on the Nacala's nodal function of being an international gateway. The IFZ status will be granted. It is located at about 5 km south of Nacala Port by the proposed port access road, utilising the land already acquired by GAZEDA. The total development area will be 500 hectares, of which the initial development of 50 hectares will promoted as a public investment project, while the remaining 450 hectares will be developed by private developers.	Nampula	GAZEDA
Industrial Belt Area Development Project	A total of 100 hectares of land plots will be prepared in the industrial belt area where industries intending to locate in Nacala SEZ are guided. GAZEDA will get land use rights (DUAT) and arrange utilities for providing private investors with land plots equipped with infrastructures (access roads, electricity and water supply). This project is an immediate measure to cater to the rapidly growing demand for industrial land in	Nampula	GAZEDA

	Nacala SEZ until the Nacala Industrial Park comes into operation.		
Nacala Port Access Road Project	The project will accommodate the road traffic expected to increase as a result of the expanded port capacity and urban development of Nacala Bay Area. It extends from National Road No.12 northward up to Nacala Port 13.5 km, including 0.7 km bridge section. The road will be a two-lane road initially, and expanded later to a four-lane road.	Nampula	ANE
Nacala Multi-Modal Terminal and Railway Shunting Yard Project	The project will have three components, namely 1) multi-modal terminal (railway and truck), 2) shunting yard and 3) locomotive depot. The project will ensure smooth transshipment of cargoes from railway to trucks and vice versa at multi-modal terminal (railway cargo station with truck terminal). The railway shanting yard in the project will enable efficient shunting of trains whose number is expected to rise as a result of larger cargo handling volume generated at Nacala Port, planned IFZ and industrial areas in the hinterland. The cargo handling capacity will be 50 to 60 thousand TEU per year. The proposed project site is about 10 km south of Nacala Port along the proposed Port Access Road route.	Nampula	MTC
Nacala Thermal Power Plant Project	A thermal power plant will be established in Nacala SEZ. The capacity will be 200 to 300 MW in the first phase and 600 MW in the second phase. The proposed project site is on the western side of the entrance of Nacala Bay, which is on the opposite bank of Nacala Bay. Either coal or natural gas will be used as fuel.	Nampula	EDM
Nacala Urban Water Supply Expansion Project	The project will enhance the water supply capacity by 50,000 m^3 per day (14.6 million m^3 per year) to meet increasing water demand in Nacala Bay Area by year 2017. The components include enhancement of the capacity of the existing treatment plant at Muecula Dam, expansion of water distribution system in Nacala Porto Municipality and development of a water distribution system in Nacala-a-Velha District.	Nampula	FIPAG
SEZ/IFZ Management Improvement Project	Mozambique, especially the Nacala Corridor Region and Maputo, requires the physical and soft capacity of accommodating incoming investments/enterprises by providing industrial parks or designated industrial areas with necessary infrastructure, as well as by providing management services for incoming and operating enterprises. The project aims at capacity development of GAZEDA for improvement of Nacala SEZ management and planning new SEZs and IFZs in Mozambique, especially for the purpose of increasing GAZEDA's physical and soft capacity for accommodating incoming enterprises and supporting operating enterprises.	Nampula	GAZEDA

Source: JICA Study Team

Table 9.2 Nampula Regional Growth Centre Programme

Project	Outline	Province	Executing Agency
Nampula Southern Road Bypass Project	Nampula City will continue to grow as the business, commercial and industrial centre of northern Mozambique and transportation node of national highways and inter-regional roads. The project will divert the through traffic from National Road No.13 to/from the west and National Road No.1 to/from the east avoiding concentration of traffic in the city centre. It is 32.5 km long running south of Nampula City as part of a ring road proposed for the future and will be 16-metre wide for the initial development.	Nampula	ANE

Nampula Multi-modal Terminal and Railway Shunting Yard Relocation Project	The project will provide a multi-modal cargo terminal (railway and truck) so as to efficiently handle cargoes to/from Nacala and inland areas toward Malawi. The project will also relocate the existing shunting yard at the Nampula station eastward by about 30 km at the same place for the multi-modal cargo terminal. It will provide a locomotive workshop as well. The total area will be about 22 hectares. The container handling capacity will be 50 to 60 thousand TEUs per year.	Nampula	MTC
Nampula Railway Bypass Project	The double track railway bypass will divert the trains transporting coal produced in Moatize, general cargoes and containers to avoid congestion and degradation of the urban environment in the central part of Nampula City. The bypass route runs in the north of Nampula City with a length of 43 km.	Nampula	MTC
Railway Crossings Improvement Project	The project will minimize traffic accident risks and division of local community areas that might be created by the railway with increased railway traffic. The project proposes 3 two-lane flyovers on National Road No.13 and one four-lane flyover at an urbanized area within Nampula City.	Nampula	ANE

Source: JICA Study Team

Table 9.3 Cuamba Logistics and Industrial Centre Programme

Project	Outline	Province	Executing Agency
Cuamba Bypass Road Project	The project will divert the through traffic on National Road No.13 to prevent degradation of urban environment and minimize traffic accidents risk and to guide expansion of the urban area to the north of Cuamba across the river, a tributary of the Lurio River. The bypass road will be a two-lane road of about 11 km long including a 50-metre bridge over the river. The new road section of the bypass branches off from National Road No.13 at about 5 km east of Cuamba, runs west-northwest and converges with National Road No.360.	Niassa	ANE
Cuamba Industrial Park Project	The project will provide an industrial park where various agricultural produce and wood from the surrounding areas will be processed, taking advantage of Cuamba's geographical location. Agro-produce to be processed will include maize, cassava, haricot beans, pigeon pea, soybean, sesame, cotton and tobacco. The 25 hectare industrial park will be located in a triangular area surrounded by National Road 360 (N-360), National Road 13 (N-13) and the railway track to Lichinga at the N-360-N-13 junction.	Niassa	GAZEDA
Cuamba-Marrupa Road Project	The project will provide an all-weather road from Cuamba to Marrupa to secure access to an all-season all-weather passable road for the population along the route and improved access to market for the farmers in the surrounding areas with high agriculture potential. The road will be a two-lane road, 236 km long.	Niassa	ANE

Source: JICA Study Team

Table 9.4 Palma Natural Gas Exploitation and Chemical Industrial Centre Programme

Project	Outline	Province	Executing Agency
Palma Port Project	In Palma, LNG plants are expected to be established using natural gas from off-shore gas fields by 2018. At the same time, chemical industries for producing methanol and ammonia using natural gas are expected to	Cabo Delgado	CFM

	be developed in Palma around 2020. To accommodate these natural gas-related industries in Palma and to smoothly develop supporting sectors for these natural gas-related industries, it is essential for Palma to have a public port. Currently the construction of LNG plants is planned without proper consideration of land use and infrastructure for the chemical industries and further development in Palma. It is urgent to prepare an integrated plan for land use and infrastructure supporting not only LNG production, but also chemical industries and further development in Palma.		
Palma Thermal Power Plant Project	Taking advantage of the presence of natural gas to be exploited at offshore gas fields, a thermal power plant will be constructed with an initial generation capacity of 75MW or so for supplying not only to Palma's urban areas and supporting sectors for LNG production and other chemical industries using natural gas, but also to other areas including Pemba and Nacala Bay Area.	Cabo Delgado	EDM
Palma Urban Water Supply Project	Urban water supply will be expanded in order to cope with the increasing water demand due to increasing urban populations and development of supporting sectors for natural gas exploitation and prospective chemical industries.	Cabo Delgado	FIPAG
Palma Urban Expansion Project	Palma needs to accommodate an increasing number of influx of migrants and a large expansion of urban areas. Urban roads, drains, electricity lines and water lines will be provided for expanded urban areas. This urban expansion project will also provide sites for a variety of social services, hospitals, health centres and schools.	Cabo Delgado	To be Determined

Source: JICA Study Team

Table 9.5 Logistic Modernization Sector Programme

Project	Outline	Province	Executing Agency
- Liwonde and Chipoka Inland Container Depots Project (Malawi) - Chipata Inland Container Depot Project (Zambia)	Inland container depots (ICDs) will be established at two locations in Malawi (Liwonde and Chipoka) and at one location in Zambia (Chipata) in order to ensure efficient export and import of railway cargoes through Nacala Port (time and cost saving), thus enhancing the attractiveness of the railway transport among Mozambique, Malawi and Zambia. Each ICD will be 1.2 hectares with railway yard, bonded warehouses, container freight station and container yard.	Malawi and Zambia	To be Determined
N-13 Highway Service Stations and Truck Terminals Development Programme	Highway service stations with truck terminals will be established at four locations along National Road No.1 (N-1) and National Road No.12 (N-12): Namialo, Ribaue and Malema in Nampula Province and Cuamba in Niassa Province. They will offer rest areas for truck drivers, parking spaces, vehicle maintenance service, emergency response service, markets for local products and logistic services (storage, breaking bulk and distribution to smaller distribution trucks). Each area will be 250 to 400 metres long and 100 to 200 metres wide.	Nampula, Niassa	ANE
Mandimba One Stop Border Post Project	The project will ensure smoother movements of goods, services and people across the Mozambique-Malawi border at Mandimba. The project will include construction of facilities (building, parking lot and approach road), procurement of equipment (weigh bridge and X-ray scanner), development of a legal framework and streamlined procedure and training of immigration and customs officers. Coordination among relevant government organizations will be crucial. The project period will be 6 years including, design, formulation of legal framework,	Niassa and Malawi	Revenue Authority

	construction and training.		
Mocuba SEZ Project	GAZEDA plans to develop a special economic zone (SEZ) of 10,727 km^2 in the area covering Mocuba District and Munhande Administrative Post in Zambezia Province, taking advantage of its strategic location. Two private initiatives for developing railway systems, one from Tete province to Nacala and the other to Macuse Port, will significantly enhance the viability of Mocuba SEZ. The project components include development of infrastructure, multi-modal transportation terminal, industrial park (19ha), new hotels and upgrading of the existing airport.	Zambezia	GAZEDA
Railway Regulator Capacity Development Project	The roles of INATTER (Instituto Nacional dos Transportes de Terrestre), responsible for regulation and supervision of the railway and road sectors, will become important when the private concessionaire for the Nacala Corridor Railway (Northern Railway and new sections) comes into operation soon. The capacity of INATTER will be strengthened in the areas of monitoring and guidance of private operators and enforcement of regulations, as well as transport statistics data collection, transport policy and programme formulation, international standardization and transport safety development. The project period will be three years.	Maputo	INATTER

Source: JICA Study Team

Table 9.6 Water Resources Development Sector Programme

Project	Outline	Province	Executing Agency
Meteorological and Hydrological Observation Network System and Capacity Development Project	The deteriorated meteorological and hydrological observation network system in the three regional management authorities (ARA-Central North, ARA-North and ARA-Zambezi), will be rehabilitated and upgraded by procurement of equipment and training of ARA officers. Hydrometric equipment and meteorological equipment to be procured will be 68 and 138 respectively. A total of 15 ARA officers will be trained on site for 6 months. DNA officers will be trained for data analysis.	Nampula, Niassa, Cabo Delgado, Tete, Zambezia	ARA North, ARA Central North and ARA Zambeze
Sanhute Dam Project	The Sanhute Dam will be constructed about 39 km southwest of Nacala City along N-12. The water of about 40,000 m^3 per day will be conveyed to the existing Maecula Dam, about 9 km from the Sanhute Dam, and further transferred to Nacala area through the existing water pipeline. An FS has been completed already.	Nampula	ARA Central North
Lurio River Resource Development Project for Water Supply to Nacala Bay Area	For growing urban areas and economic activities in Nacala Bay Area, it is essential to develop water resources of the Lurio River. Water transmission like the following is a way of water resources development of the Lurio River for Nacala Bay Area. A water transmission system will be established, by which the water of the Lurio River is taken at a new weir located about 170km west-northwest of Nacala Bay Area, transferred to the Mecuburi River by a tunnel channel 56 km long, flows down the Mecuburi River by gravity to another new weir about 110 km downstream, and transferred from there to Nacala Bay Area by an open channel 60 km long. The water supply volume will be about 518,000 m^3 per day or 189,000,000 m^3 per year, sufficient to cater to the water demand estimated for 2035. Considering possible negative impact on the downstream area of a water intake from the Lurio River, the water volume usable from the Lurio River might not be sufficient enough to fully satisfy the increasing water demand in Nacala Bay Area. It is necessary to pay careful attention to the	Nampula	ARA Central North

	water-related environment of the downstream of the water intake for water resources development of the Lurio River.		
Monte Tiza Dam Project	The Monte Tiza Dam will be constructed about 50 km south of Nampula City to supply water of about 259,000 m^3 per day or 95,000,000 m^3 per year. A raw water transmission pipeline system of about 60 km will also be installed.	Nampula	ARA Central North

Source: JICA Study Team

Table 9.7 Power and Energy Sector Programme

Project	Outline	Province	Executing Agency
Nampula-Nacala Power Substation Reinforcement Project	Phase 1 of the project aims to stabilize the power supply to Nampula City, Nacala City and the areas in between by establishing a new power substation in Namialo in Nampula Province and introducing substation control systems and other equipment at the existing Nampula 220 Substation and Nampula Central Substation. In Phase 2, the transformers of the four power substations will be repaired.	Nampula	EDM
Chimuara-Namialo-Nacala Transmission Line Project	New transmission lines (635km for 400kV, 190km for 220kV and 21km for 110kV) will be installed between Chimuara in Zambeze province with Nacala through Nicuadala, Mocuba and Alto Morocue in Zambeze Province and Nampula, Namialo and Monapo in Nampula Province to ensure stable power supply to these areas. The project also includes construction of two new power substations and instalment of transmission-related equipment at the six existing substations.	Nampula	EDM
Palma-Pemba-Nacala Transmission Line Project	A new transmission line (over 450 km long) and 3 substations will be installed between Palma, a prospective natural gas exploitation and chemical industrial centre, and Nacala Bay Area through Pemba. This transmission line will be necessary when a new Thermal Power Plant using natural gas is constructed in Palma for supplying power to the power grid. The 3 substations will be installed in Palma, Pemba and Nacala.	Cabo Delgado and Nampula	EDM
Tete Coal Briquette Project	Dissemination of the use of bio-briquette as a new domestic energy source replacing firewood will be promoted by the project, taking advantage of massive middling from coal production in Moatize and bio-mass available in the province. The project will contribute to decelerating deforestation and creating jobs. Corporate Social Responsibility (CSR) activities are expected to support the project. The project period will be 3 years minimum including research and survey and mobilization of SMEs.	Tete	FUNAE and Private Sector

Source: JICA Study Team

Table 9.8 Social and Environmental Management Sector Programme

Project	Outline	Province	Executing Agency
Environmental Management Capacity Development Project	In the existing EIA system, project proponents should prepare and submit environmental management plans. However, MICOA has not developed enough capacity to monitor and guide their implementation of environment management plans. Firstly, an implementation system for monitoring and guiding of project proponents will be established. Secondly, accordance to the implementation system to be established, the capacity	Maputo, Tete, Nampula, Cabo Delgado	National Agency for Environmental Quality and Control, MICOA

	development will be conducted for implementing monitoring and guidance of project proponents' activities for environmental management plans. Furthermore, environmental laboratories will be established in Maputo, Tete, Nampula and Pemba, which will be provided with a set of environmental monitoring equipment required for collecting fundamental environmental information. Capacity development will be also undertaken for MICOA officers on the usage of equipment, preparation of monitoring program, periodical inspection, maintenance of equipment and preparation of environmental audit program. The environmental legal framework will be improved as well.		
Project for Strengthening on DUAT Acquisition Process	• The following operation of provincial and district level cadastre offices is strengthened to avoid land conflicts between investors and communities. ➢ Management of land use information database and the administrative/ technical procedure of land registration (land identification and GIS mapping) ➢ Monitoring of the participatory consultation process ➢ Awareness raising of the communities on their land rights or land value • An approach combining "community DUATs" and "small-scale farmers' individual DUATs" is to be pursued for securing farmer's land. • MINAG, DNTF and SPCG are the relevant administration units.	Nampula, Niassa, Cabo Delgado, Tete, Zambezia	MINAG
Project for Capacity Development on Resettlement Process	• The following operation of provincial and district level territorial planning department (under MICOA) is strengthened to avoid conflicts between investors and communities regarding resettlement. ➢ Monitoring of the participatory consultation process, as well as monitoring of implementation process of resettlement and compensation ➢ Awareness raising of the communities on their land rights, land value and compensation value • MICOA, DINAPOT and DPOT* are the relevant administration units. The project will be for two years.	Nampula, Niassa, Cabo Delgado, Tete, Zambezia	MICOA

Source: JICA Study Team

Table 9.9 Human Resources Development Programme

Project	Outline	Province	Executing Agency
Community-Based School Management Project	The project aims to improve the quality of education by promoting community participation in primary school management. Utilising existing organization called "school council", school management activities, such as rehabilitation of school buildings will be implemented by mobilizing community resources under the supervision of district and provincial administrations. The project period will be two years.	Nampula, Niassa, Cabo Delgado, Tete, Zambezia	MINED
Strengthening of Secondary Education with Focus on Science and Mathematics Education Programme	The project aims to improve the quality of secondary education by focusing on science and mathematics education, so that human capitals which will contribute to country's economic growth will be developed. Cascade training system will be developed from the central level, provincial level toward school district. Teaching manuals will be prepared as well. The project will be for three years.	Nampula, Niassa, Cabo Delgado, Tete, Zambezia	MINED
Nacala Medium-Level	A medium-level technical and vocational school will be established in Nacala Bay Area, which will provide technical and vocational education	Nampula	MINED

Technical and Vocational School Project	for transport, logistics, manufacturing and service industries. Demand for skilled labours by foreign investors locating in Nacala will be fulfilled locally. The project period will include concept planning, FS, DD, construction, procurement of equipment, development of educational programmes and curriculum, training of teachers and institutional development.		
Cabo Delgado Medium-Level Technical and Vocational School Project	A medium-level technical and vocational school will be established in Palma, which will provide technical and vocational education on the technologies for natural gas and related industries. The project will be a development of the existing Macomia Professional School. Demand for skilled labours by foreign investors locating in Palma will be fulfilled locally. The project period will include concept planning, FS, DD, construction, procurement of equipment, development of educational program and curriculum, training of teachers and institutional development.	Cabo Delgado	MINED
Nacala Superior Polytechnic Project	Nacala Superior Polytechnic will be established in Nacala Bay Area, which will provide higher-level and practical technical education on transport, logistics, manufacturing, and service industries including tourism. Demand for engineers and technicians by foreign investors locating in Nacala SEZ will be fulfilled locally. The project period will include concept planning, FS, DD, construction, procurement of equipment, development of educational program and curriculum, training of teachers and institutional development.	Nampula	MINED
Cabo Delgado Superior Polytechnic Project	Cabo Delgado Superior Polytechnic will be established in Pemba or Palma, which will provide higher-level and practical technical education for natural gas and related industries. Demand for engineers and technicians by foreign investors locating in Palma will be fulfilled locally. The project will include concept planning, FS, DD, construction, procurement of equipment, development of educational program and curriculum, training of teachers and institutional development.	Cabo Delgado	MINED

Source: JICA Study Team

Table 9.10 Coordination and Promotion of Integrated Development Programme

Project	Outline	Province	Executing Agency
Nacala Corridor Regional Development Management Reinforcement Project	A new organization "Nacala Regional Development Agency (NRDA)" will be created under Ministry of Planning and Development. Its main responsibility will be to make coordination of planning and development across all the sectors and different government levels in the Nacala Corridor Region. Its function is mainly technical. It submits reports to the existing decision-making bodies at the political level. Capacity development for this agency (to be established newly) will be conducted to cover monitoring, evaluation, coordination and promoting for integrated development.	Nampula, Niassa, Cabo Delgado, Tete, Zambezia	MPD and NRDA (a new agency)

Source: JICA Study Team

Table 9.11 Investment Promotion Sector Programme

Project	Outline	Province	Executing Agency
Large-Scale Projects and Local Industry Linkage Project	The objective of this project is to promote linkages between large-scale incoming investment projects and local industries. For this purpose, company directory of both large scale companies and local SMEs is introduced, and matching of both parties will be done.	Tete, Cabo Delgado and	CPI

	CPI is currently working with UNIDO for creating company database, whose output will be utilised for this proposed project. This project period will be for two years.	Nampula	

Source: JICA Study Team

Table 9.12 Support Programme for Remote Areas

Project	Outline	Province	Executing Agency
Support Programme for DUAT Acquisition for Small-Scale Farmers in Remote Areas	In the target areas for ProSAVANA and the areas near Tete's coal mining and Palma's natural gas exploitation, "Project for Strengthening on DUAT Acquisition Process" will be implemented in line with ProSAVANA strategies. On the other hand, remote areas away from the transport corridor and major mining sites also require special actions for supporting small-scale farmers especially when private investments and infrastructure projects are determined to come to such remote areas.	Niassa and Cabo Delgado	MINAG
Programme for Primary School Development in Remote Areas	In remote areas away from the transport corridors, the situation of primary schools will be improved in school buildings, furniture and teachers' houses, as well as in school management. In this programme, firstly, government effort and resources including budget will be mobilized for improving the situation of primary schools in remote areas. Secondly, community initiatives will be promoted in participation in school management at the community level.	Niassa and Cabo Delgado	MINED
Programme for Health Centre Development in Remote Areas	In remote areas away from the transport corridors, the situation of health centres will be improved in buildings, equipment, health staff's houses, as well as in health centre management. In this programme, firstly, government effort and resources including budget will be mobilized for improving the situation of health centres in remote areas. Secondly, community initiatives will be promoted in participation in Primary Health Care activities at the community level.	Niassa and Cabo Delgado	MISAU

Source: JICA Study Team

Appendix

Meetings Held for PEDEC-Nacala including Steering Committee Meetings and Working Group Meetings

A Steering Committee (SC) for "the Nacala Corridor Project" and a "Working Group (WG)" have been established for the purpose of guiding and assisting the JICA Study Team as shown below.

In addition, Discussion Group Meetings, Roadshows and International Seminars were organised to share the information with concerned people in different organizations and countries and to exchange views on development of the Nacala Corridor Region.

Project Management Structure

Project Management Structure	Proposed Members	Roles, Timing and Place of Meetings
Steering Committee (SC) for the Nacala Corridor Project	Ministry of Planning and Development (as Secretary for SC) GAZEDA MTC MIC Permanent Secretariat of Five provinces	• To discuss and define main items of the Project to guide the Project, and take necessary actions required for smooth implementation of the Project. • To hold a meeting as every main report of the Project becomes ready to discuss in the city of Maputo.
Working Group (WG)	MPD (as the Secretary for WG) Five provinces of the target area GAZEDA MTC CENACARTA Ministry of Energy Ministry of Agriculture Ministry of Mineral Resources Ministry of Trade and Industry Ministry of Tourism Public Company of Ports and Railway (CFA) Public Road Company (ANE)	• To discuss technical aspects of the Project properly and provide the necessary data and information for the Project. • To hold a meeting as every main report of the Project becomes ready to discuss although the topic and the timings will be set based on necessity.

	National Directorate of Water (DNA)	

The following table summarises the dates, places and number of participants of various meetings held for PEDEC-Nacala. Main purposes of these meetings are to present and discuss study results with line ministries and/or governmental organizations periodically, and to get feedbacks to PEDEC-Nacala.

Dates, Places and Number of Participants of Various Meetings for PEDEC-Nacala

No.	Date	Main Objectives	Places	No. Participants *
Steering Committee (SC)				
SC1	04, May, 2012	Explanation of ICR and Launching of the Project	Maputo	32
SC2	27, Nov, 2012	Explanation of PR	Maputo	19
SC3	30, Aug, 2013	Explanation of ITR	Maputo	15
Working Group (WG)				
WG1	24, Aug, 2012	To share the study progress of each sector	Maputo	6
WG2	06, Sep, 2012	To share the study progress of each sector	Maputo	7
WG3	21, Sep, 2012	To share the study progress of each sector and to implement Project Vision Workshop	Maputo	8
WG4	28, Sep, 2012	To share the study progress of each sector and to implement Project Vision Workshop	Nampula	16
WG5	02, Oct, 2012	To share the study progress of each sector	Maputo	5
WG6	28, Mar, 2013	To share the study progress of each sector	Maputo	5
WG7	16, May, 2013	To share the study progress of each sector	Maputo	12
WG8	10, Jun, 2013	To share the study progress of each sector	Nampula	11
WG9	12, Jun, 2013	To share the study progress of each sector, ITR and priority projects	Maputo	19
WG10	09-10, Dec 2013	To share the study progress of each sector and implement SEA workshop	Nampula	21

WG11 **	13, Dec, 2013	To discuss on the priority projects and share the result of SEA workshop held in Nampula	Maputo	19
Integrated Working Group				
IWG1	26, Nov, 2012	Explanation of PR	Maputo	23
IWG2	29, Aug, 2013	Explanation of ITR	Maputo	28
**Discussion Group Meeting (DGM) ** **				
DGM	30, Sep, 2013	Discussion on Nacala Bay Area and Greater Nampula development programs, and railway cargo operation program	Maputo	30
Roadshow (RS)				
RS1	07, Dec, 2012	Explanation of PR	Lichinga	20
RS2	10, Dec, 2012	Explanation of PR	Nampula	23
RS3	11, Dec, 2012	Explanation of PR	Pemba	29
RS4	14, Dec, 2012	Explanation of PR	Quilimane	-
RS5	17, Dec, 2012	Explanation of PR	Tete	-
International Seminar (IS)				
IS1	15, Mar, 2013	To share information and strengthen cooperation between neighbouring countries	Maputo	93
IS2 **	20-21, Mar, 2014	To share information and strengthen cooperation between neighbouring countries as well as the private sector	Nampula	129

Participants from Japanese side are not included (*). Representatives from municipalities and districts (mayors and district administrators) attended Discussion Group Meeting, 11th Working Group meeting in Maputo, and the 2nd International Seminar to discuss on the Project (**).