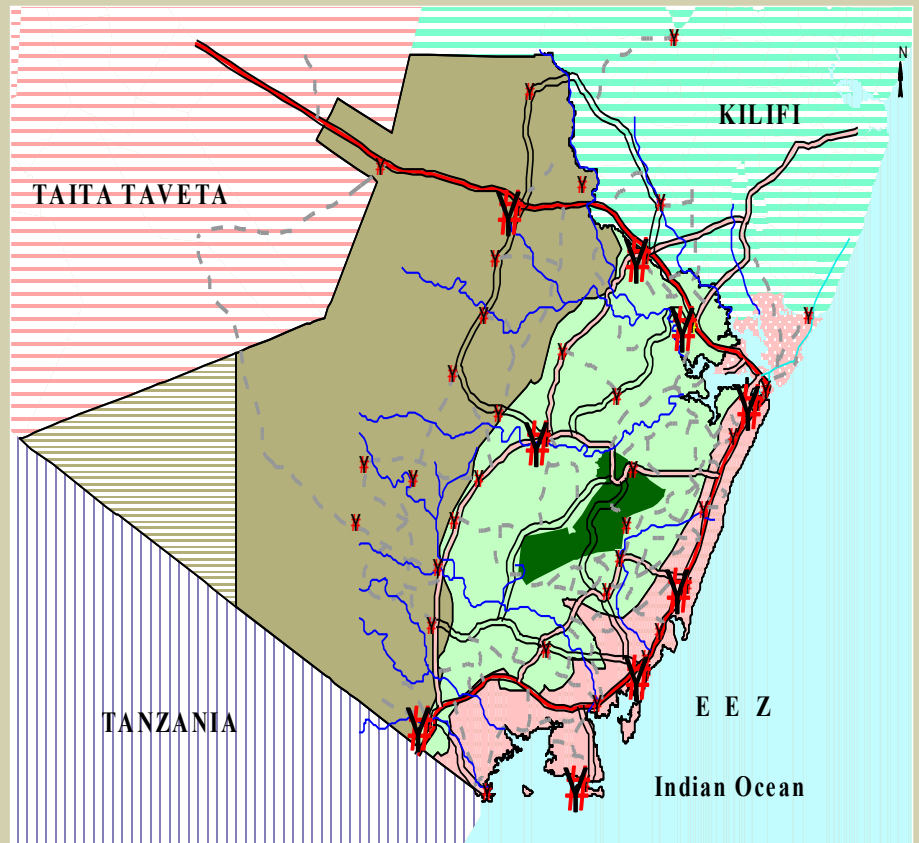




Ministry of Lands
Department of Physical Planning

Kwale District and Mombasa Mainland South Regional Physical Development Plan

2004-2034



United Nations Centre
for Regional Development
Africa Office



The County Council
of Kwale



Ministry of Planning, National
Development and Vision 2030



Department of Urban
and Regional Planning,
University of Nairobi

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Development (UNCRD)
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Ministry of Planning



Department of Urban
and Regional Planning
University of Nairobi

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The local communities played a major role in sharing local knowledge and experiences that greatly enriched the knowledge base and the plan proposals.

Plan Approval

This Plan has been prepared, publicized and circulated as per the requirements of the Physical Planning Act (Cap 286). The Plan has fulfilled all the statutory requirements and is hereby approved.

CERTIFIED

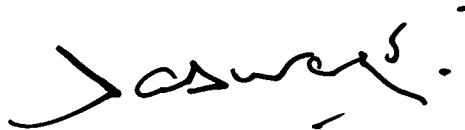


Director of Physical Planning

Date: _____

9th March, 2012

APPROVED



Minister for Lands

Date _____

13TH MARCH 2012

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Abbreviations

AFC	Agriculture Finance Corporation
AIDS	Acquired Immuno-Deficiency Syndrome
APDK	Association of Physically Disabled of Kenya
CBO	Community-Based Organization
CBS	Central Bureau of Statistics
CDA	Coast Development Authority
CDF	Constituency Development Fund
CDTF	Community Development Trust Fund
DC	District Commissioner
DDC	District Development Committee
DDO	District Development Officer
DLASO	District Lands Adjudication and Settlement Officer
DVO	District Veterinary Officer
EMCA	Environmental Management Coordination Act
GDP	Gross Domestic Product
GoK	Government of Kenya
GTZ	German Technical Aid
HIV	Human Immuno Virus
IFAAD	International Fund for Africa Aid Development
KARI	Kenya Agricultural Research Institute
KATO	Kenya Association of Tour Operators
KCB	Kenya Commercial Bank
KEFRI	Kenya Forest Research Institute
KEMFRI	Kenya Marine and Fisheries Research Institute
KNCCI	Kenya National Chamber of Commerce and Industry
KENGEN	Kenya Electricity Generating Company
KFS	Kenya Ferry Service
KM	Kilometer
KPA	Kenya Ports Authority
KWFT	Kenya Women Finance Trust
KWS	Kenya Wildlife Service

LATIF	Local Authority Transfer Fund
MoA	Ministry of Agriculture
MoCD	Ministry of Cooperative Development
MoCGS&SS	Ministry of Culture, Gender, Sports and Social Services
MoE&NR	Ministry of Environment and Natural Resources
MoNH	Ministry of National Heritage
MoH	Ministry of Health
MoL	Ministry of Lands
MoL&F	Ministry of Livestock and Fisheries
MoPW	Ministry of Public Works
MoW&I	Ministry of Water and Irrigation
MoT&I	Ministry of Trade and Industry
MoT&WL	Ministry of Tourism and Wildlife
MoYA	Ministry of Youth Affairs
NC&PB	National Cereals and Produce Board
NEMA	National Environmental Management Act
NGO	Non-Governmental Organization
NLDP	National Livestock Development Policy
NMK	National Museums of Kenya
OP	Office of the President
PMEC	Provincial Monitoring and Evaluation Committee
SACCOS	Savings and Credit Cooperative Society
TB	Tuberculosis
UNCRD	United Nations Centre for Regional Development
UNEP	United Nations Environment Programme
UNICEF	United Nations Children's Fund

Acknowledgements

This Regional Physical Development Plan is the result of a wide, long, complex process of intensive consultations and teamwork. The process involved the people of Kwale District and Likoni Division of Mombasa District, planning teams, service providers, the private sector, development partners and various Government stakeholders.

The Ministry of Lands, in general, and the Physical Planning Department, in particular, are very grateful to everyone who contributed in one way or another to the successful preparation of this Plan. Special thanks go to the members of the planning teams who worked between 2000 and 2006 for their tireless, visionary, and focused efforts to oversee the completion of the plan preparation process.

Most importantly, there was concerted effort to involve most of the departmental heads of both Kwale and Mombasa districts, the people of Kwale and Likoni, the political wing that constituted members of parliament and civic leaders from the two districts and particularly from Kwale County Council, which is a major stakeholder and implementer of the plan.

The Ministry of Lands appreciates the contributions, finance and technical support from the United Nations Centre for Regional Development (UNCRD) and the University of Nairobi, and other partners in the private sector. UNCRD in particular gave this plan an international face.

Finally the Ministry of Lands would like to express its appreciation to all individuals and institutions who contributed towards this worthy cause and made it a success.

N. M. Nthiga
Director of Physical Planning

Foreword

The initiation of the Kwale District and Mombasa Mainland South Regional Physical Development Plan was in line with the national development priorities as articulated in the National Development Plan, the Economic Recovery Strategy for Wealth and Employment Creation and the Poverty Reduction Strategy Paper, among others. At the international level, it makes reference to the global goals of “shelter for all; and sustainable human settlements in an urbanizing world”; and the Millennium Development Goals. This corresponds with the mandate of the Department of Physical Planning as the lead agency in ensuring that all human settlements are appropriately planned to facilitate socio-economic development of all the regions of the country. The Physical Planning Act, Chapter 286 of the Laws of Kenya grants this mandate.

The Plan focuses on spatial aspects of development, in the context of socio-economic environment. Its overall goal is to provide a spatial framework for planning, use and sustainable management of the resources in the defined region for a period of 30 years.

The Department views the planning approach used in preparing the plan as an opportunity to further improve the participatory planning methodology, which it has embraced. The approach was participatory, providing for direct involvement of the local people in identifying development issues; and consultation with various stakeholders and formation of partnerships with diverse local and international development partners. In the context of this Plan, the vision of the Department of Physical Planning is to create “empowered local communities and local authorities who are able to articulate their own development agenda; plan, implement and sustain their efforts with respect to human settlements.” The Department is looking forward to the time that it will only play a supervisory and/or facilitative role in policy formulation and development of guidelines for planning human settlements.

Partnerships that were built with strategic partners, especially the United Nations Centre for Regional Development (UNCRD) and the University of Nairobi, should be sustained for the benefit of all involved. UNCRD not only provided an international dimension to the partnership but also facilitated a healthy link between research and practice. It is hoped that lessons learnt in Kenya will add to the pool of experiences in Africa and the rest of the World. The teamwork among the planners in the Physical Planning Department and their counterparts from the various line ministries, local authorities, regional bodies and other development agencies, demonstrated during the preparation of the plan should be seen as a starting point towards implementation of the plan.

The approach used in preparing the Plan provided an opportunity to open up dialogue among the various development partners in Kwale and Mombasa Mainland South. The real challenge is to develop a sustainable framework for implementing the Plan. The Department is committed to facilitating the process of preparing an implementation framework. It is my hope that this plan will make a big and positive difference in the lives of the people of Kwale District and Likoni Division of Mombasa District.

Hon. James Orengo, EGH, MP.
MINISTER OF LANDS

Preface

Regional planning is about making decisions and choices among alternative ways of achieving certain goals and objectives in a spatial context, using effectively the available resources. In this regard, regional planning aims at achieving higher economic growth, fair distribution of resources, employment opportunities, social cohesion and sustainable environment in a regional context.

The Kwale District and Mombasa Mainland South Regional Development Plan is a long-term development plan that addresses the socio-economic and environmental problems of the region to improve the standard of living of the people through employment creation, reduction of poverty, and creation of wealth. In this regard, the plan provides comprehensive strategies and policy guidelines to solve the problems of rural and urban development, including agriculture, mining and industry, infrastructure and human settlement, eco-tourism and sustainable environmental management.

The objectives and vision of the Regional Plan are in line with the various declarations and policy statements of the major international conferences, such as the World Summit for Social Development, held in Copenhagen in 1995, the World Summit on Sustainable Development held in Johannesburg in 2002 and the Millennium Assembly held in September 2000 in New York. The recommendations and Plan of Actions adopted at all these Summits underscored the importance of building African capacity to effectively plan and utilize its resources to reduce poverty and achieve sustainable development.

The Kwale District and Mombasa Mainland South Regional Development Plan was prepared through a consultative and participatory process that involved the community and various stakeholders at all stages of the plan preparation. The Regional Plan is a product of a long participatory process and partnership between the Physical Planning Department, Ministry of Lands; the United Nations Centre for Regional Development (UNCRD) Africa office; the University of Nairobi; Kwale County Council; the Ministry of Planning and National Development; and other stakeholders in the region.

Since UNCRD Africa Office launched its technical assistance programme to support the Physical Planning Department in preparation of the Regional Plan, several consultative and training workshops were held to enhance the capacity of planners of the Department and other stakeholders involved in preparation of the Regional Plan. First, UNCRD Africa Office, in collaboration with the Physical Planning Department, conducted a field reconnaissance mission in February 2004. The objective of the reconnaissance mission was to get first-hand information about the regional development issues and challenges of the region. Following the reconnaissance mission, UNCRD, in collaboration with its partners, held a workshop in October 2004 in Kwale to review the data collected by the planners and to identify any existing data gaps. In August 2005, UNCRD, jointly with the Physical Planning Department, organized an in-house seminar to review and discuss the progress the planning team had made in filling the data gaps identified during the previous workshop.

In October 2005, UNCRD and the Physical Planning Department, in collaboration with other partners, organized a training workshop on data analysis, synthesis and plan formulation. The objective of the workshop was to train the planners on techniques of data analysis, projection and formulation of development strategies for the region. In January 2006, UNCRD, in collaboration with the Physical Planning Department and Kwale County Council, organized a workshop on stakeholders' consulta-

tion and regional plan preparation in Mombasa. The main objective of the workshop was to provide a forum for all stakeholders, local community leaders, representatives of local NGOs and other civil society groups of the district to examine the draft document and give their comments and input to improve the regional plan. Finally, in September 2006, UNCRD in collaboration with other partners, organized a workshop to provide a forum for all stakeholders and planners to review the strategies and projects proposed in the regional plan and discuss its effective implementation.

The Regional Plan presented here is one of the outputs of the above-mentioned activities and collaboration between various stakeholders. The Regional Plan attempts to demonstrate the existing resources and potentials as well as the problems and challenges of the region. Based on these analyses, the plan proposes several strategies and policy prescriptions to be implemented to achieve the desired objectives. It is our hope that the plan will assist the Government of Kenya in guiding its regional development policies to make Kwale and Mombasa Mainland South a prosperous and developed region. We also hope that the document will serve as reference material for all other agencies involved in development of the region.

Asfaw Kumssa
Coordinator
UNCRD Africa Office

Executive summary

OVERVIEW

The Kwale District and Mombasa Mainland South Regional Development Plan is a long-term plan that gives a spatial framework for development of the region for a period of 30 years. The plan articulates the various policy goals of the Government of Kenya, local authorities and the citizens of Kwale and Mombasa Mainland South. It is prepared in the context of the global goal of Sustainable Human Settlement Development in an Urbanizing World and Millennium Development Goals, 2000. The whole process of plan preparation was participatory in appreciation of the local aspirations and resource realities.

MANDATE

The mandate to prepare the plan is derived from the provisions of the Physical Planning Act Cap 286 of the Laws of Kenya.

CONTENT

The plan consists of the written statement and graphical representation of the existing and proposed spatial structure. The Plan is divided into thirteen chapters: Chapter one covers the objectives, vision and problem statement, the methodology used and the context within which the plan has been prepared. Chapter two to eight constitute an exposition of the thematic sectoral situation analysis of the existing spatial structure and the socio-economic dynamics of Kwale District and Likoni Division of Mombasa District. Chapter nine gives the summary of all the emerging issues as per data analysis in the thematic sectors. The conceptual framework; alternative development models; and the integrated regional development plan and the implementation matrix are covered in chapters ten to thirteen, respectively.

MISSION STATEMENT

To prepare a regional development plan for Kwale District and Mombasa Mainland South to guide development for the next 30 years.

Opportunities in the Region:

- 255 km coastline with fine sand beaches;
- Places of historic, cultural and archaeological significance;
- Presence of wildlife and marine life;
- Rich cultural diversity;
- Topographical diversity of the landform ranging from the Shimba Hills through the Nyika Plateau to the coastal plains;
- Strategic location relative to Mombasa city which offers readily available market for agricultural produce and source of consumer goods and services;
- Industrial potential in terms of mineral exploitation, agro-based industries and labour pool;
- Potential for alternative energy sources in terms of solar and wind power; and
- 8356 sq. Km. of land with potential for agricultural production for both domestic and industrial use.

STATEMENT OF THE PROBLEM

Despite all these opportunities the region is faced with the following challenges:

- Collapsing industries e.g Bixa, Ramisi sugar factories;
- Closure of cashew nut factory in Kilifi and a decline in nuts production;
- Decline in the tourism sector;
- Declining agricultural production for food and cash crops;
- Inadequate and deteriorating infrastructure; and
- High and rising poverty levels.

The plan aims at addressing these challenges and enhancing the tapping of the opportunities for sustainable development of the Region.

VISION

A thriving regional economy with vibrant and sustainable agricultural, tourism, industrial and urbanisation-led development that will empower the people of Kwale and Likoni.

The vision was derived from the aspirations of Kwale and Likoni people and other stakeholders based on the challenges and opportunities that exist. The aspirations of the people are as outlined below:

- A flourishing industry-driven regional economy;
- Self-sufficiency in food production;
- Vibrant and sustainable tourism industry;
- A thriving economy with vibrant well-planned centers;
- Protected, conserved and clean environment;
- Positive cultural change;
- Efficient and effective infrastructure
- Effective and direct involvement of the people of the region in development of the area; and
- Empowered, efficient and self-sustaining institutions.

MISSION

To identify the region's resources, their potential and levels of utilization, identify the region's existing problems and opportunities and formulate a framework for short, medium and long-term plan with strategies, programmes and projects for sectoral and spatial development in the region.

OBJECTIVES

Among the objectives of the plan are:

- To identify the region's resources and their level of utilization;
- To suggest strategies to enhance utilization of these resources;
- To provide a spatial framework for provision of adequate infrastructure and services;
- To identify the region's environmental concerns and propose protection and conservation measures;
- To provide a framework for sustainable human settlements;
- To analyze existing institutional structures and propose measures to enhance their efficiency;
- To examine the role of socio-cultural practices in development;
- To develop an integrated plan for the region; and
- To identify institutions and actors for implementation of the plan.

RATIONALE

First and foremost, it is the mandate of the Department of Physical Planning to prepare regional plans for all districts in the Republic. The South Coast is a major contributor to the economy because of its tourism potential and thus the need to treat Kwale as a special area in need of a plan to guide and enhance this industry. Kwale and Likoni have potential that has not been harnessed and our aim is to

identify this potential and ensure that the opportunities are utilized. Finally, Kwale is ranked among the poorest districts in Kenya, yet it has great potential. This plan addresses these problems and suggests remedies.

THE DEVELOPMENT PLAN

At the end of every thematic chapters (two to eight), opportunities and challenges for each subsector are given. The challenges are later collated to form Chapter Nine as a basis for formulation of a conceptual framework of the plan. The challenges and opportunities were also a guide to the formulation of alternative development models and strategies. Three development models were formulated as alternative development paths for the region. These models are discussed in Chapter Eleven. The models are:

1. Agriculture and Rural Development Model;
2. Tourism and Environment Development Model; and
3. Industrialization and Urbanization Development Model.

The alternative Development Models indicate strategies that could steer Kwale and Mombasa Mainland South to high and sustained levels of economic growth. However, each model taken separately cannot lead to sustainable development of the region. The development models' strategies were integrated in order to have a spatial framework for sustainable human settlements. This spatial framework for sustainable development of human settlement is what is referred to here as the "Integrated Plan."

The Integrated Regional Development Plan as the preferred model is, therefore, supposed to guide development of the Plan Area for the next 30 years. The plan proposals are made along the development zones identified in Chapter 10. And the aim is to preserve the topographical and ecological conditions with a layout of specialized zones, which are harmoniously linked with each other while their independence and special features are ensured.

Lastly, a plan implementation Matrix was developed for each specialized zone to facilitate implementation of this plan. The matrices portray issues or challenges being addressed, specific objectives as to why the issue is being addressed. Strategies on how to address the challenges, preferred actions, who is to act on the actions and time frames of the actions form part of matrices.

Introduction

1.1 OVERVIEW

The Kwale District and Mombasa Mainland South Regional Development Plan is a long-term plan intended to suggest a spatial framework for development of the region for a period of 30 years. It articulates the aims of the Government of Kenya, local authorities and the citizens of Kwale and Mombasa Mainland South. It also proposes strategies and policies intended to achieve those aims. The mandate to prepare the plan derives from the provisions of the Physical Planning Act Cap 286 of the Laws of Kenya.

The Plan has been prepared in the context of the global goal of sustainable human settlement development in an urbanizing world and Millennium Development Goals, 2000. It employs a participatory approach to planning in appreciation of the local aspirations and resource realities and consists of the written statement and graphical representation of the existing and proposed spatial structure. The following paragraphs are an exposition of the mission statement, problem statement, vision, objectives, methodology and the policy and legal context that set the stage for the rest of the document.

1.2 MISSION STATEMENT

To prepare a regional development plan for Kwale District and Mombasa Mainland South to guide development for the next 30 years.

1.3 OPPORTUNITIES OF THE REGION

- 200 km coastline with fine beaches;
- Places of historic, cultural and archaeological significance;
- Presence of wildlife and marine life;
- Rich cultural diversity;
- Topographical diversity of the landform ranging from the Shimba Hills through the Nyika Plateau to the coastal plains;
- Strategic location relative to Mombasa city which offers readily available market for agricultural produce and source of consumer goods and services;
- Industrial potential in terms of mineral exploitation, agro-based industries and labour pool;
- Potential for alternative energy sources in terms of solar and wind power; and
- 8356 sq. Km. of land with potential for agricultural production for both domestic and industrial use.

1.4 STATEMENT OF THE PROBLEM

Despite all these opportunities the region is faced with the following challenges:

- Collapsing industries such as Bixa and Ramisi Sugar;
- Closure of cashew nut factory in Kilifi and a decline in nuts production;
- A decline in the tourism industry;
- Declining agricultural production for food and industrial crops;
- Inadequate and deteriorating infrastructure; and
- High and rising poverty levels.

The Plan aims at addressing these challenges and enhancing the tapping of the opportunities for sustainable development of the region.

1.5 VISION

A thriving regional economy with vibrant and sustainable agricultural, tourism, industrial and urbanisation-led development, that will empower the people of Kwale and Likoni. The vision of this plan was derived from the aspirations of Kwale and Likoni people and other stakeholders, based on the challenges and opportunities that exist. These aspirations are as indicated below:

- A flourishing industry-driven regional economy;
- Self-sufficiency in food production;
- A vibrant and sustainable tourism industry;
- A thriving economy with vibrant well-planned centers;
- A protected, conserved and clean environment;
- Positive cultural change;
- Efficient and effective infrastructure and institutions;
- Effective and direct involvement of the people of the region in development of the area; and
- Empowered and self-sustaining institutions.

1.6 MISSION

The Mission of this plan is to identify the region's resources, their potential and levels of utilization, identify the region's existing problems and opportunities and provide a framework for drawing up short and mid-term sectoral and other plans, programmes and projects.

1.7 OBJECTIVES

The objectives of the plan include:

- Identifying the region's resources and their level of utilization;
- Suggesting strategies to enhance utilization of these resources;
- Providing a spatial framework for provision for adequate infrastructure and services;
- Identifying the region's environmental concerns and proposing protection and conservation measures;
- Providing a framework for sustainable human settlements;
- Analyzing existing institutional structures and proposing measures to enhance their efficiency;
- Examining the role of socio-cultural practices in development;
- Developing an integrated plan for the region; and
- Identifying institutions and actors for implementation of the plan.

1.8 BACKGROUND OF THE PLAN

The preparation of this Plan was started in November, 1996 but the proposal to plan was approved by the Director of Physical Planning in April, 2001. Thereafter, several stakeholder workshops, barazas and team workshops were held. A sensitization workshop was held in June 2002 at Lotus Hotel, Mombasa and formulation of data collection groups was done at a workshop held at Safari Beach Hotel in February 2002. Data collection began in May 2002 and a data analysis workshop was held at Glory Hotel in 2003. A data verification workshop was held in March 2004 at Travelers Beach Hotel, Tiwi and data analysis was reviewed in April 2004 at Millennium Park Hotel, Ukunda. Participants were later trained on regional planning concepts, data collection and analysis at Cape of Good Hope in October, 2004, and later, a plan was prepared and compiled at Bandari College in November 2005.

1.9 THE RATIONALE

The rationale for this Plan is derived from the mandate of the Department of Physical Planning to prepare regional physical development plan for all districts in Kenya. The South Coast of the country makes a major contribution to the economy because of its tourism potential. The Plan considers Kwale

District and Mombasa Mainland South as a special area in need of appropriate framework to guide and enhance this industry.

Kwale District and Likoni that form Mombasa Mainland South have potential that has not been harnessed and our aim is to identify this potential and ensure that the opportunities are utilized. Kwale is ranked among the poorest districts in Kenya, yet it has immense potential. This plan addresses these problems and suggests remedies. The Department of Physical Planning has prepared a Regional Plan for Nyandarua District in the highlands region, a Transmara Regional Plan in the Rift region, and the Nyando Regional Plan in the Lakeside Region, is under preparation. Kwale, which falls in the lowlands, was picked as a case study.

1.10 METHODOLOGY

Participatory methodology was used in preparation of the Plan with the purpose of securing ownership of the Plan and therefore support for its preparation and subsequent implementation; empowering the local community through participation in the process and therefore acquiring skills in articulation of development issues and coming up with solutions; pooling resources; sharing knowledge and contributing skills among other benefits. The participation process included:

1. Direct involvement of community representatives in identifying development concerns and suggesting possible solutions through the stakeholder meetings in every division of the region. These meetings were followed by further consultative sessions and interviews to confirm and verify some of the issues raised earlier.
2. Consultative workshops with representatives of the government line ministries, the local authorities (Kwale County Council, Mombasa Municipal council and Kwale Town Council), the service providers (Kenya Ports Authority, Telkom Kenya, Kenya Railways, Kenya Tourism Board, Kenya Wildlife Services, among others), development agencies (NGOs, CBOs), and research institutions (e.g. KEMFRI, KEFRI, and Museums of Kenya). These workshops brought together resource persons with specialized expertise who helped to focus on and interpret the issues raised in the stakeholder meetings. The workshops also helped in identifying sources of data and information of thematic groups to collect and analyze the data and participate in the Plan formulation.
3. Partnership was established with international organizations such as the United Nations Centre for Regional Development (UNCRD); and institutions of higher learning (University of Nairobi) on international experiences and global concerns while leveraging emerging knowledge from research and training institutions.
4. A number of steps beginning with the profiling where the core planning team developed a fact file for the planning area, followed by a preliminary survey to enable a general appreciation of the planning area.

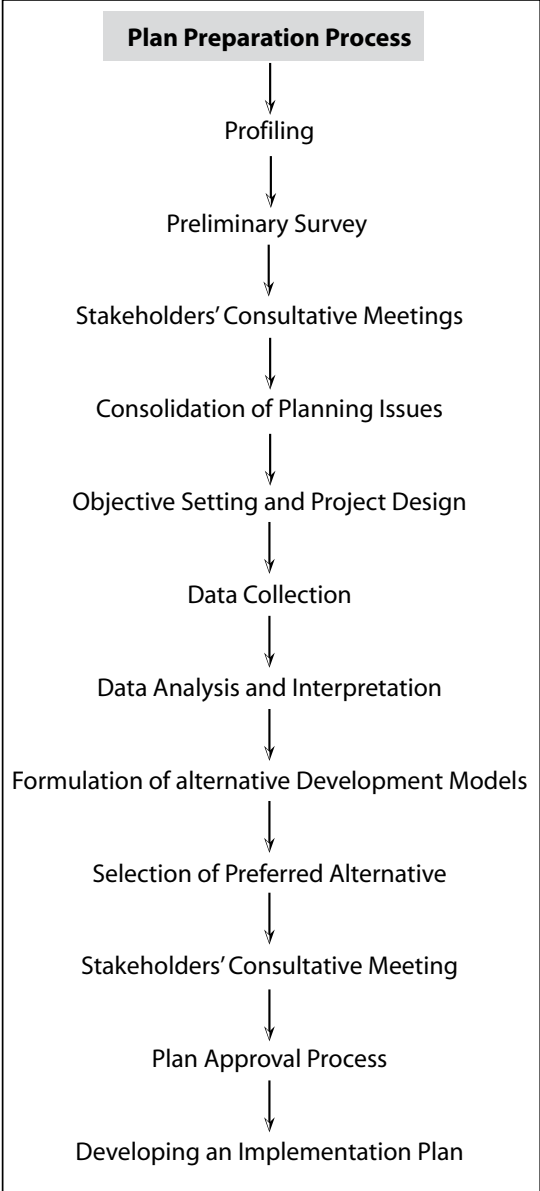


Plate 1.1: A Consultative Workshop at Cape of Good Hope — Diani



Source: Physical Planning Department, 2004.

The next set of activities were the stakeholder consultative meetings; consolidation of planning issues, objective setting and project design, data collection and data analysis and interpretation, formulation of the draft plan, consultative meetings, subjecting the plan to the approval process, and preparation of an implementation plan.

1.11 DATA ANALYSIS

The techniques for data analysis were determined by the kind of information collected. The techniques were either qualitative or quantitative and included land classification, carrying capacity, time series and forecasting and matrix analysis, among others. Data collected was grouped and analyzed along six themes, namely Physiographic and Natural Resource Base, Socio-cultural and Demographic Dynamics, Economic Base, Human Settlements, Infrastructure and Services, and Institutional Framework.

1.12 THE PLANNING CONTEXT

The plan preparation was undertaken within the guiding framework of the Global Human Settlement Goals and the Millennium Development Goals, the National Development Policy and the local aspirations and concerns. These are summarized below.

1.12.1 The Global Human Settlement Goals

The main global goals for human settlement are adequate shelter for all and sustainable human settlement development in an urbanizing world. The constituent principles of these goals are:

1. **Equality**
Planning should promote human settlements where all people women and children and the youth have equal access to basic housing, infrastructure, health care, green and open spaces; equal opportunity for education, for productive and freely chosen livelihood and for personal, spiritual, cultural and social development; equal rights and obligation with regard to the conservation and use of natural and cultural resources; equal opportunity to participate in public decision-making.
2. **Eradication of Poverty**
Planning should aim at meeting the basic needs of the low-income groups within human settlements and providing for full productive and freely chosen employment.
3. **Sustainable Development**
Sustainable human settlements planning should guarantee that economic development, employment opportunities and social progress will take place with least possible detrimental impact on

the environment; carrying capacity of the eco-system should not be exceeded and opportunities for future generations should not be inhibited; replenishment of the stock of resources while drawing on them and maintenance of bio-diversity and cultural diversity; and promotion of human health as well as air, water and soil qualities.

4. *Livability*

Physical conditions and spatial characteristics of towns, villages and cities have to be taken into account. In addition, city layout and district land-use patterns, population and building densities and ease of access to adequate public amenities have to be accounted for.

5. *Civil Engagement and Government Responsibility*

The planning process should generate a sense of citizenship and identity, a spirit of volunteerism and civic engagement. People should be encouraged and have opportunity to participate in decision-making and development. It should take into account that governments have a responsibility to protect their citizens' health, safety and general welfare and to ensure all rights are protected under the law. Partnerships should be fostered between and among all actors from public, private and community organizations and individuals. There is need for broad-based participation to ensure formation of alliances, pooling of resources, sharing of knowledge, contribution of skills and capitalization on comparative advantages leading to collective action.

1.12.2 Millennium Development Goals, Targets and Indicators

a) *Eradicate extreme poverty and hunger*

Target 1: Half, between 1990 and 2015, the proportion of people whose income is less than US\$1 a day.

Indicators: Proportion of population earnings below US\$1 (1993 PPP) per day, incidence of poverty, and share of poorest quintile in national consumption.

Target 2: Half, between 1990 and 2015, the proportion of people who suffer from hunger.

Indicators: Prevalence of underweight children under five years of age; proportion of population below minimum level of dietary energy consumption.

b) *Achieve universal primary education*

Target 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.

Indicators: Net enrolment ratio in primary education; proportion of pupils starting grade 1 who reach grade 5; Literacy rate of 15-24 years old.

c) *Promote gender equality and empower women*

Target 4: Eliminate gender disparities in primary and secondary education preferably by 2005, and in all levels of education no later than 2015.

Indicators: Ratio of girls to boys in primary, secondary and tertiary education; ratio of literate women to men, 15-24 years old; share of women in wage employment in the non-agricultural sector; proportion of seats held by women in national parliament.

d) *Reduce child mortality*

Target 5: Reduce by two thirds, between 1990 and 2015, the under-five mortality rate

Indicators: Under-five mortality rate; infant mortality rate; proportion of one year-old children immunized against measles.

e) *Improve maternal health*

Target 6: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.

Indicators: Maternal mortality ratio; proportion of births attended by skilled health personnel.

f) Combat HIV/AIDS, malaria and other diseases

Target 7: Have halted by 2015 and begun to reverse the spread of HIV/AIDS

Indicators: HIV prevalence among pregnant women aged 15-24 years; condom use rate of the contraceptive prevalence rate; condom use among high-risk groups; percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS; contraceptive prevalence rate; ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years.

Target 8: Have halted, by 2015, and begun to reverse the incidence of malaria and other major diseases.

Indicators: Prevalence and death rates associated with malaria; proportion of population in malaria-risk areas using effective malaria prevention and treatment measures; prevalence and death rates associated with tuberculosis; proportion of tuberculosis cases detected and cured under DOTS (internationally recommended TB control strategy).

h) Ensure environmental sustainability

Target 9: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

Indicators: Proportion of land area covered by forest; ratio of area protected to maintain biological diversity to surface area; energy use (kg oil equivalent) per \$1,000 GDP; carbon dioxide emissions per capita and consumption of ozone-depleting; proportion of population using solid fuels.

Target 10: Half, by 2015, the proportion of people without sustainable access to safe drinking water and sanitation.

Indicators: Proportion of population with sustainable access to an improved water source, urban and rural; proportion of population with access to improved sanitation, urban and rural.

Target 11: By 2020, have achieved a significant improvement in the lives of at least 100 million slum dwellers.

Indicators: Proportion of households with access to secure tenure.

i) Develop a global partnership for development

1.12.3 National Development Goals and Strategies

Kenya's development goals are spelt out in a number of policy documents but the plan made specific reference to two key documents, namely the Economic Recovery Strategy for Wealth and Employment Creation, and the Poverty Reduction strategy Paper. These two documents articulate the current Government policy direction in respect to the growth and development of the country.

a) The Economic Recovery Strategy for Wealth and Employment Creation policy document identifies six policy action pillars to spur the sustained development of the economy, namely:

- i. Rapid economic growth in an environment of macro-economic stability. This will be achieved through measures to enhance revenue collection, expenditure restructuring and a monetary policy that will support the achievement of economic growth without putting into jeopardy price stability objective. Four priority areas will form the core of the macro-economic framework: maintenance of revenue at 21% of the GDP to enable Government expenditures to be financed from tax revenues. This target will be achieved by rationalizing the tax rates, broadening the tax base to include the informal sector and modernization of revenue administration. Secondly, the Government will restructure expenditures to be

more growth-and pro-poor oriented. Thirdly, the Government will focus its deficit financing on non-domestic sources to enable private sector credit to grow despite the limited growth in money supply. Fourthly, the Central Bank will pursue a monetary policy consistent with low inflation without compromising the recovery effort.

- ii. Strengthening of institutions of governance. In this regard the strategy outlines various reforms in public administration, national security and law and order. The programme proposes reforms to enhance efficiency and improvement in governance. Focus will be on building capacity of institutions involved in making justice available to all, especially the poor.
 - iii. Rehabilitation and expansion of physical infrastructure. The Government vision is for Kenya to become Africa's commercial center. To achieve this vision, the country needs to modernize, and uplift to first world class, its key economic infrastructure. The main components of this strategy are: Firstly, rehabilitation, reconstruction and expansion of the road network, including the rural access roads. This will be done through implementation of the Roads 2000 Programme for rural access roads, the concessioning of the Mombasa-Malaba Highway for conversion to a dual carriageway, rehabilitation of the road network and strengthening of the legal and institutional framework, which includes the Kenya Roads Board. Secondly, energy availability will be improved by linking to the southern Africa power pool, completion of the power generation projects including Olkaria and Sondu Miriu. Thirdly, the telecommunications sector will be opened up to increased competition and private sector participation. Fourth, restructuring and eventually privatizing Kenya Railways through concessioning will revamp the railway sector. Fifth, the Port of Mombasa will be converted to a landlord port and this will enable the private sector to participate in its modernization, while construction of a bypass at Dongo Kundu will eliminate the need for ferry services and potentially enable the conversion of the port into a free port. Air transport will be improved through modernization and expansion of facilities and increasing the role of the private sector.
 - iv. Investment in the human capital of the poor. The Government believes a well-educated and healthy population is an important factor in enhancing productivity and the general performance of the economy.
 - v. Improvement in the productive sectors of the economy including agriculture, tourism, trade and industry for sustained growth.
 - vi. Improvement of the enabling environment for business and removing the various impediments that may hamper private sector development.
- b) The Poverty Reduction Strategy Paper outlines the priorities and measures necessary for poverty reduction and economic growth. It identifies aspects of the pro-poor growth strategy that will form the focus of Government policy, which include:
- i. Promotion of access to markets and market opportunities for the poor. This requires infrastructure provision, access to credit and employment, among other aspects;
 - ii. Improvement in the overall effectiveness of public resources geared towards poverty reduction;
 - iii. Enhancing security of the poor by addressing the critical issues of marginal groups in marginal areas and protecting the vulnerable groups;
 - iv. Allocating increased resources to human capital; and
 - v. Generating employment, improving productivity and conditions in the labour market.

c) Decentralization Policies

The key policy actions aimed at promoting decentralization through Government resource disbursement to the districts and the local authorities are likely to influence the implementation of the Regional Plan and they include:

- i. The Constituency Development Fund, which is a Government programme, is aimed at supporting development projects at the constituency level. The funds are used on projects identified by the constituency development committee, which consists entirely of local people. The committee will benefit from the Plan by identifying priority projects for implementation. It is, therefore, a possible source of funds for implementation of the Plan.
- ii. The Kenya Roads Board represented at the district level by the District Roads Committee is responsible for road improvement in the district and receives funds from the Central Government. This programme is part of the central Government reform programme aimed at ensuring there is regional balance in access to resources for infrastructure improvement and development.
- iii. Education bursaries disbursed to the constituencies for purposes of supporting education for the needy.
- iv. Water Boards, which are regional bodies for management of water resources in the regions. They represent an opportunity for capacity building in local resource management and lessons learnt could be used in building local capacity for management of other resources.
- v. The Local Authorities Transfer Fund (LATF) is a fund for supporting the development of programmes for local authorities and is a possible source of funds to implement the plan.

1.13 ORGANIZATION OF THE PLAN

The Plan is divided into thirteen chapters: Chapter One presents the objectives, vision and problem statement, the methodology used and the context in which the plan has been prepared. An exposition of the thematic sectoral situation analysis of the existing spatial structure and the socio-economic dynamics of the Planning Region is given in Chapters Two to Nine. Chapter Ten contains the conceptual framework while Chapters Eleven to Thirteen present the proposed Alternative Development Models, the Integrated Plan and the suggested Plan Implementation Matrix, respectively.

Physiographic and Natural Resource Base

2.1 LOCATION AND SIZE

2.1.1 Location

Kwale District and Mombasa Mainland South region borders Mombasa Island and Kilifi District to the north, and Taita Taveta District to the west. To the south, the region borders the Republic of Tanzania. It is the southern most part of Kenya between latitudes 3 degrees 30 minutes and 4 degrees 45 minutes south and 38 degrees 31 minutes and 39 degrees 31 minutes east. Maps 2.1 and 2.2 give the national and local context, respectively.

2.1.2 Size

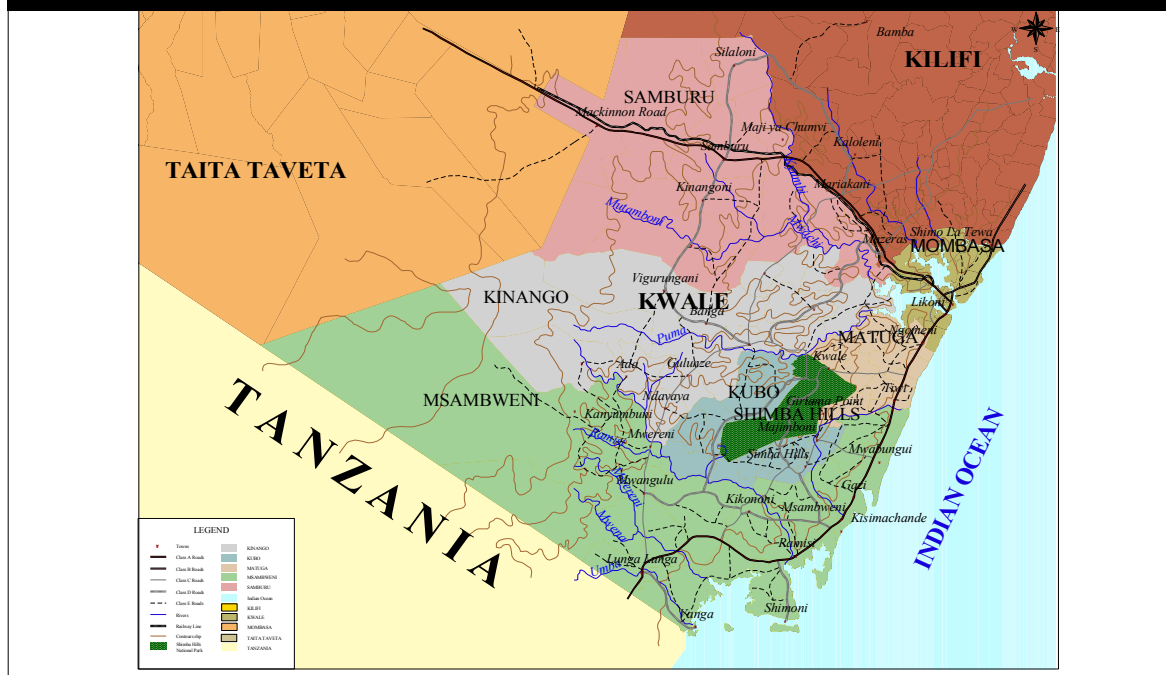
The region covers the entire Kwale District and Likoni Division of Mombasa District. Its total area is 8,373 square Kilometers, which is 1.5 per cent of the country's total and 10 per cent of the Coast Province (Map 2.2). Broadly the region is underlain by four groups of rocks (Map 2.3). These include basement rocks in north west, the Karoo sediments that cover middle of the region up to Shimba Hills, rocks underlying the coastal strip and recent sediments.

Map 2.1: Location and Size



Source: Survey of Kenya

Map 2.2: Administrative Boundaries of South Coast



Source: Survey of Kenya

2.2 GEOLOGY

2.2.1 The Basements Rocks

These are the oldest rocks. They occur as gneisses schists, quartzites and granitoids and crystalline limestone. The basement rocks are the chief bearers of gemstones in the region.

2.2.2 The Karoo Sediments

Rocks called the Duruma sandstone series represent the Karoo sediments. They are divided into the following formations.

a) The Taru Formation

It is found to the west bordering the basement rocks and the younger Mazeras formation to the east where they form the Shimba hills. The Taru formation forms a continuous belt of more than 20 km wide in north south direction from Samburu to Tanzanian border.

b) The Maji-ya-Chumvi Formation

This formation is divided into two, the lower and the upper Maji-ya-Chumvi formation. It occurs between the Taru and Mariakani formation. The economic minerals found in this rock formation are rock slabs used in the construction industry and minor quantities of coal at various stages of formation.

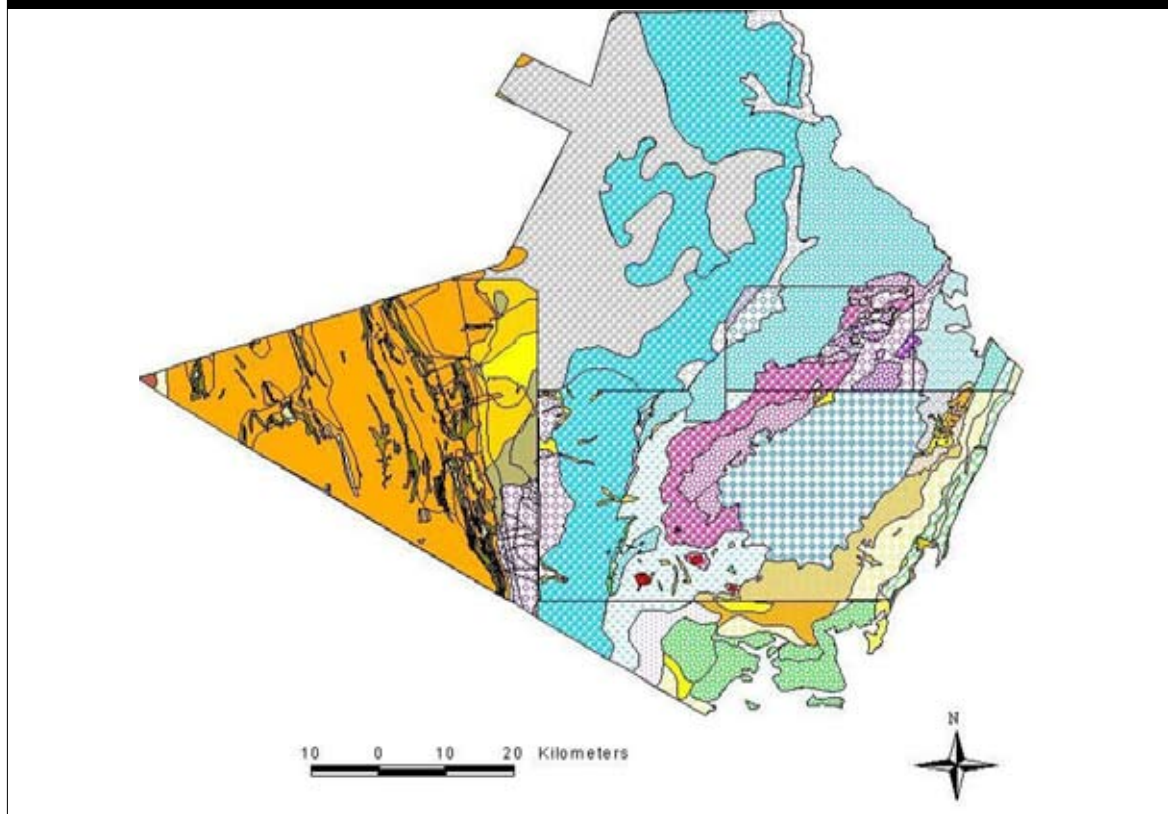
c) The Mariakani Formation

The Mariakani formation runs almost in a north south direction but does not reach the Tanzanian border. This is due to faulting. They form the eastern part of the region's hinterland. The economic minerals found in this formation are the Mariakani sandstone, which is used as a source of ballast for road and the building construction industry.

d) The Mazeras Formation

This rock formation consists of sandstones and arkoses, which form the Shimba Hills. The Mazeras sandstones are the source of the Marere Springs, which supplies fresh water to Kwale town and some parts of Mombasa.

Map 2.3: Geology of the Region



Source: District Geological Office, Kwale 2004

2.2.3 The Jurassic-Cretaceous Rocks

These rocks include the Kambe limestone. They are found between the north east of Shimba Hills and on the western shores of Mombasa island. The economic minerals found in the Jurassic Cretaceous rocks are iron oxide within the Kambe limestone, lead, zinc and copper mineral within Kambe limestone Maji-ya-Chumvi sandstone contact around Mkang'ombe area in Kinango Division, limestone blocks and ballast used in the construction industry; and limestone around Waa (Matuga Division) used as raw material in manufacturing of lime and associated products.

2.2.4 The Recent Sediments and Deposits

These consist of the Marafa and the Magarini formations. Magarini formation consists of sand dunes and can be found making up ridges parallel to the coastal line from Marenje Hill in the south to some parts of Shimba Hills and north of Mwachema and south of Mwena Rivers. Economic minerals found in the recent sediments and deposits are Titanium and various other heavy detrital minerals such as those found in Maumba and Nguluku where an estimated 200 million tonnes can be mined; and silica sand, a major economic mineral, hosted by these rocks. It is currently mined at Ramisi and Msambweni and used in the glass and soap manufacturing industries.

Other recent sediments and deposits formation include pleistocene sand facies. They are the back reef lagoon deposits formed during sea level fluctuations and consist of sands with coral debris found in places close to the beach line. These landforms are found in Ramisi and Majoreni. They also include the Reef Complex. The raised pleistocene coral reef has a narrow outcrop extending to about three kilometres but in some places is less than one km wide along the coastline. The coral reef consists of a tough white to yellow limestone, which is dense and compact. The economic minerals found in this formation are quarried building blocks and guano deposits from caves, which are used as organic fertilizer. They are found in caves at Similani, Ng'ombeni, and Shimoni.

2.2.5 Intrusive Rocks

These rocks occur in the central southern part of the region. Landforms like Dzombo Chiruku, Mrima and Nguluku Hills and Dzirihini Hills are intrusive formations. They are composed of igneous rocks, which contain relatively higher percentages of alkaline earth elements than other rocks. The economic mineral found in these intrusive rock forms are niobium and rare earth elements and phosphates both found at Mrima.

2.2.6 Beaches

These land forms are formed by eroded reef material, i.e. coral sand material when it is deposited on the inshore side of the reef. Mombasa Mainland South and Kwale District region has a coastline covering approximately 255 km. Along this coastline there are fine sand beaches with important recreation areas. Areas with fine sand beaches that are or can be exploited for tourism purposes are Shelly (Likoni), Tiwi, Diani, Msambweni, Shimoni and Vanga.

2.2.7 Coral Reefs

Coral reefs in the region occur as coral flats, lagoons, reef platforms and fringing reefs. They cover a total estimated area of 50,000 ha. Stony coral cover averages between 30% and 40%. In addition to their undisputed value in attracting tourists, the region's coral reefs are also important for fisheries, with the tourism industry as one of the main markets for fish products. There is a serious habitat damage caused by over-exploitation and careless collection methods. These pressures, coupled with silt deposition from rivers draining agricultural land and pollution from the cement industry, chemical and textile plants near Mombasa, domestic effluent, mining and oil discharge from tanker traffic, have diminished both the productivity and the species richness and diversity of the entire coast. Virtually all reefs outside the marine protected areas are degraded to some extent.

Table 2-1: Beach Characteristics, Problems and Level of Exploitation

Name of beach	Characteristics	Levels of exploitation	Problems	Remarks
Shelly Beach	Fine grained sand coral reefs Tidal flats mangrove swamps sheltered	Not fully exploited	- Beach erosion - No solid waste management - periodic beach odour from decaying organic matter - No sanitary facilities (Public beaches)	- Sea wall erected - Litter and non-biodegradable solid waste
Tiwi Beach	"	"	"	"
Diani Beach	"	Moderately exploited	- Beach erosion - No solid waste management - Periodic beach odour from decaying organic matter - No sanitary facilities (Public beaches) - Blast fishing from neighbouring countries destroying corals acting as buffers to coastline	- Beach management programme between commuters and fisheries department in place
Shimoni	Sheltered coral reefs Tidal flats sea grass meadows mangrove swamps exposed cliffs and steep rocks	Not fully exploited	"	"
Vanga	Fine grained sand sheltered tidal flats mangrove swamps sea grass meadows steep rocks	Not yet exploited	- Solid waste and sanitary waste discharged directly into the sea - Beach erosion	- Litter and solid waste floating in sea water

Source: Physical Planning Department

Plate 2.1: Fine Sands at Shelly Beach



Source: Physical Planning Department, 2004

2.3 RELIEF AND DRAINAGE

2.3.1 Relief

Mombasa Mainland South and Kwale District is composed of four major topographical or physical zones. These are the coastal plain, foot plateau, coastal uplands and Nyika plateau.

1. Coastal Plain

The Coastal plain is sometimes referred to as the “coral rag”. It is a narrow strip of land, three to 10 kilometres wide, with a distance of approximately 255 kilometres from Likoni to Vanga. It lies 30 metres above sea level and extends 10 kilometres inland. This strip of land consists of corals, sand and alluvial deposits.

2. The Foot Plateau

Behind the coastal plain is the foot plateau. It lies at an altitude of between 60 and 135 metres above sea level on a flat plain surface with high potential permeable sand hills and loamy soils. This is the sugar cane zone of the region.

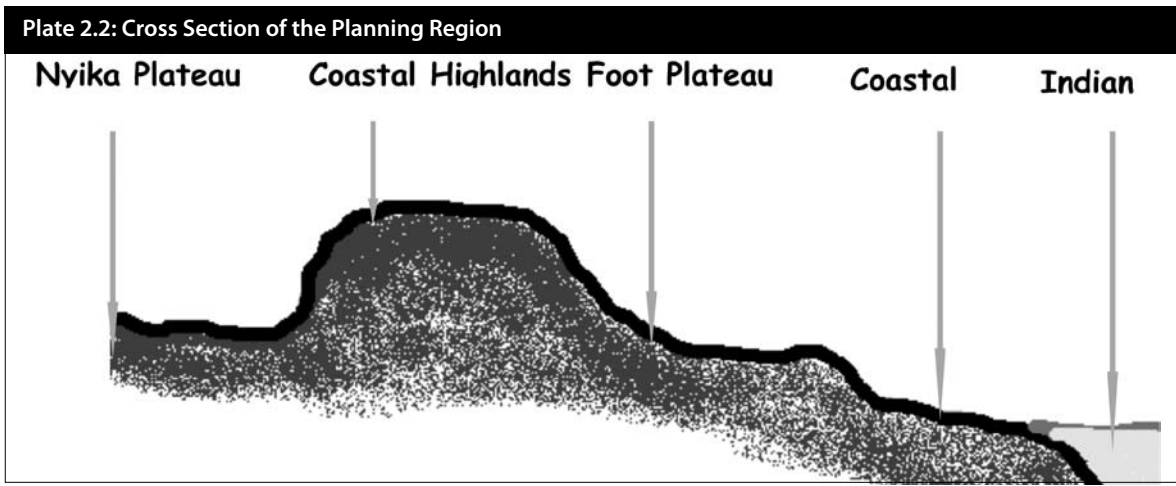
3. Coastal Uplands

Commonly known as Shimba Hills, the area rises steeply from the foot plateau to an altitude between 150 metres and 462 metres above sea level. This topographical zone is made up of many sandstone hills. The hills include Shimba Hills (420 m), Tsimba (350 m), Mrima (323 m) and Dzombo (462 m). This is an area of medium to high agricultural potential.

4. The Nyika Plateau

This zone stands at an altitude of about 180 to 300 metres above sea level on the western boundary of the region. The zone is underlain by a basement rock system. Occupying over a half of the region, it is semi-arid with the exception of occasional patches of reddish sand soils and is, therefore, generally poor. The main activity in the area is livestock rearing.

The discussion of relief of the region is summarized below in Plate 2.2.

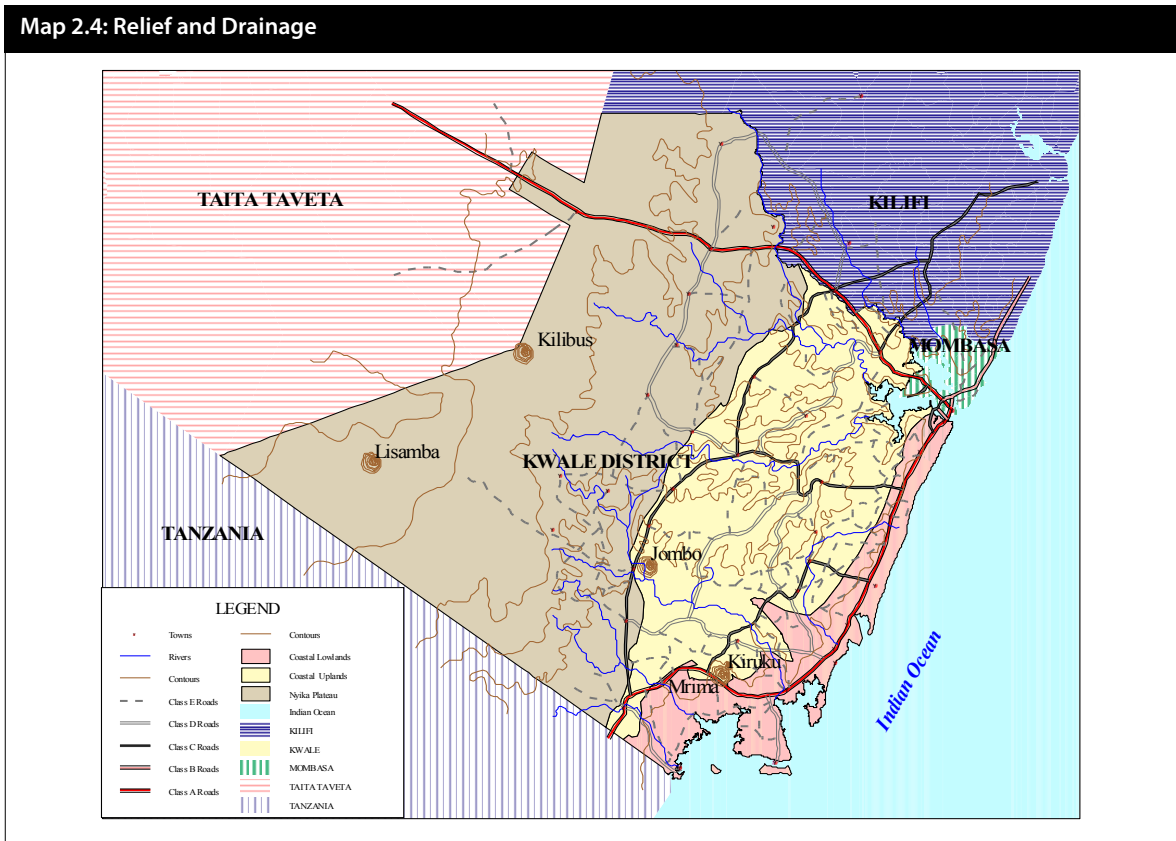


Source: Physical Planning Department, 2004.

2.3.2 Drainage and Surface Water Resources

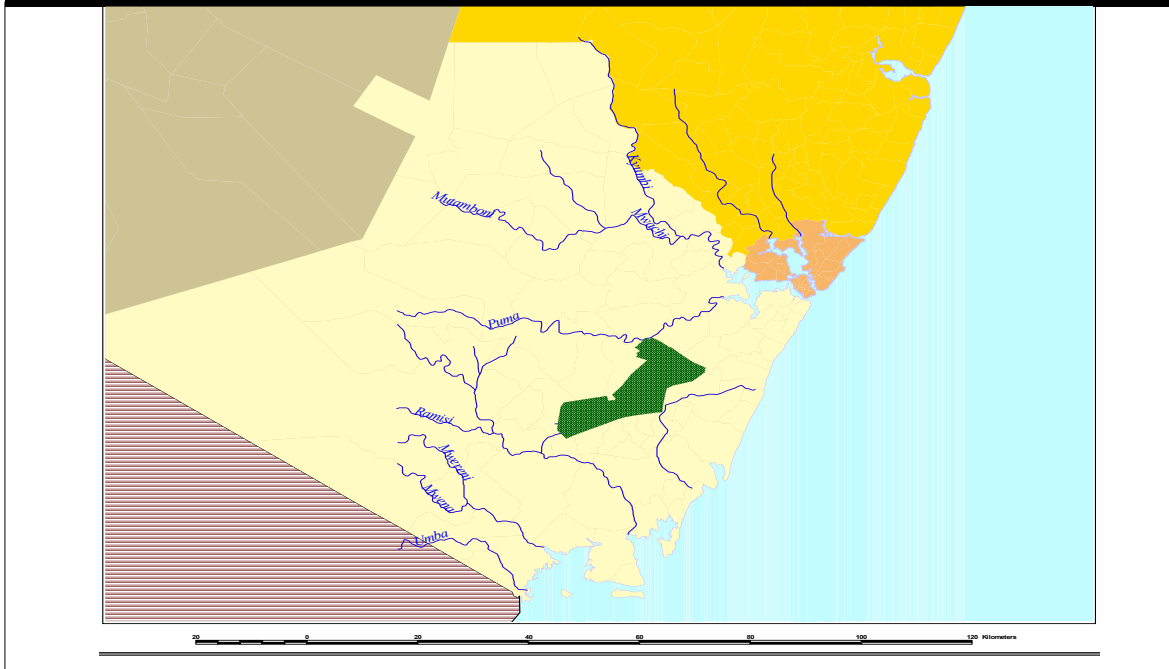
Generally, the region is well drained by seven major rivers and numerous minor streams. Of the seven, rivers, four traverse Msambweni Division. All these rivers drain to the Indian Ocean. All are seasonal but some large pools which contain water through the dry season can be found. Most of the rivers of the region have not recorded any serious pollution. Their waters are potable, save for a few when entering the India Ocean. Maps 2.4 and 2.5 show the drainage pattern and basins of the region. Table 2.2 shows water potential and yields for the rivers and streams draining the region.

The principal drainage trend follows the regional dip to the east-south-east direction, with Shimba Hills forming a barrier to the normal seaward course directing the rivers to the north.



Source: Derived from Farm Management Hand Book of Kenya, 1978

Map 2.5: Drainage Pattern



Source: Survey of Kenya

2.3.3 Ground Water Resources

Ground water potential is a function of rainfall and porosity of the underlying rock. Its quality is largely determined by the geology of the area. The Duruma sandstone series occupy a great part of the middle area of the region, Kinango and Samburu Divisions. Most of underground water in this series is saline and found in greater depths. Along the coastal belt, the region has a great potential of potable underground water.

There are six underground water catchments and/or reservoir areas along the coastal belt. These are:

(a) *Tiwi Catchment*

The aquifer has a width of 20 km with good quality water. It has a through flow of 42,000m³/hr. This reduces to 25,000m³/hr to the north of Ng'ombeni due to decrease in permeability (GoK 1999). Of the total capacity, only 20,000m³/day is obstructed through shallow boreholes and the National Water Conservation and Pipeline Corporation.

(b) *Msambweni Catchment*

This covers about 42 km² with a through flow of 27,440m³/hr. Out of the total capacity, only 13,720m³/hr can be obstructed without changes in water quality during the dry spell. Currently 17,800m³/day is obstructed through 251 shallow boreholes (GoK 1999).

(c) *Diani Catchment*

The aquifer covers 19 km² and has a very low recharge due to high clay content which decreases permeability. It has a through flow of 1400m³/hr. A number of shallow boreholes have been drilled in the area.

(d) *Ramisi Catchment*

This is a very large catchment that reaches westward to include outcrops of the Duruma sandstone series. Due to this reason surface runoffs are saline. Water Quality is fair along the coast.

(e) *Mwachema Catchment*

It has low potential for fresh water due to increased clay content and sea interference.

(f) *Umba and Mwenya Catchments*

The underlying geology of this area consists of the Duruma sandstone series, which is highly mineralized. Water in these catchments, therefore, is saline.



Source: Physical Planning Department, 2004.

River	Source	Area Traversed	Volume (M3/D)	Quality	Destination
Marere	Marere Spring Shimba rain forest	Shimba Hills National Park	9087	Good	Indian Ocean at Bombo Creek
Pemba	Marere Spring Kinango area	Kinango – Tsunza	7605	Good Saline at destination	Indian Ocean at Bombo Creek
Mkurumudzi	Shimba Hills	Shimba Hills – Msambweni	9917	Good Saline at destination	Indian Ocean at Gazi Msambweni
Umba	Usambara Mountains	Lunga-lunga - Vanga	6104.	Good but Saline at destination	Indian ocean at Vanga
Ramisi	Chenze Ranges	Mwereni – Shimoni	8190m ³	Good but Saline at destination	Dzombo Ndavaya Mwereni
Mwachema	Majimboni - Msulwa	Majimboni – Gombato-Diani	341.73	Good but Saline at destination	Indian Ocean at Diani
Mwachi	South Samburu	South Samburu	-	Good but Saline at destination	Indian ocean at Mazeras

Source: Physical Planning Department

2.4 CLIMATE

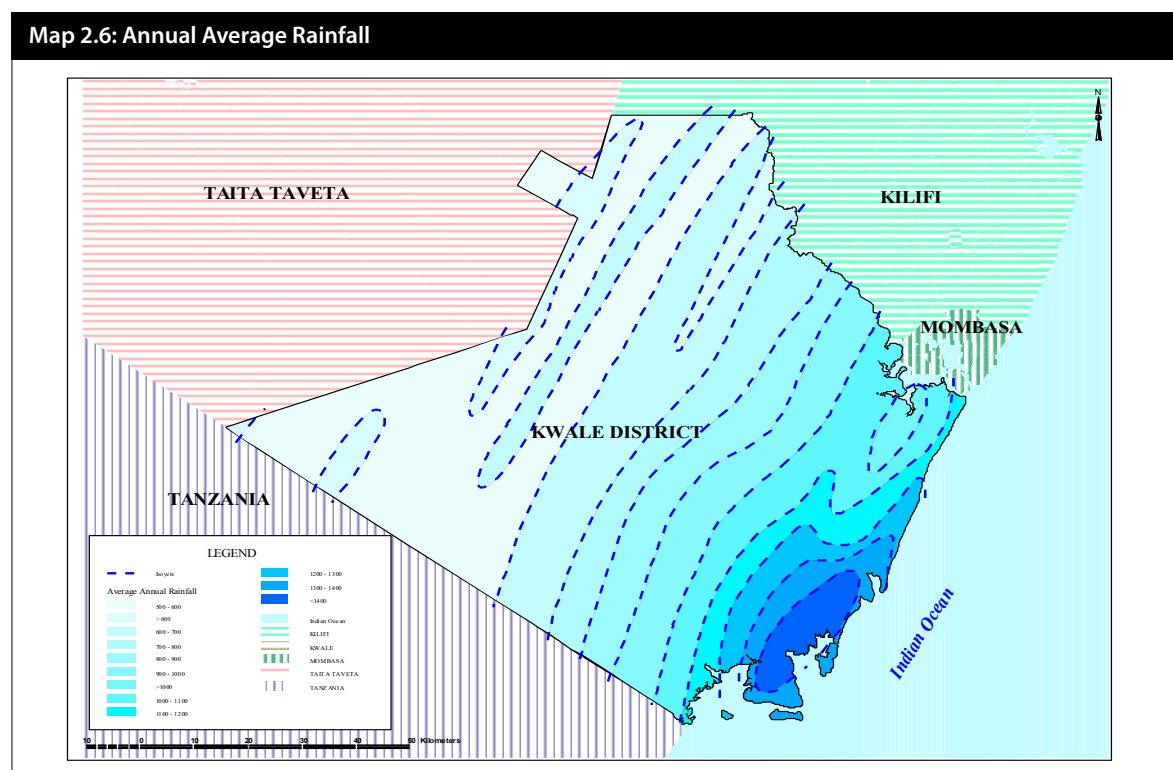
The climate of Kwale District and Mombasa Mainland South is warm and humid especially along the Coastal strip. The climate of the region is influenced mainly by the two prevailing winds including the south-west Monsoon and northeasterly winds. These two winds bring changes in rainfall and temperatures.

2.4.1 Rainfall

The rainfall of the region varies greatly and decreases as distance increases from the coast to the interior (Table 2.3 and Maps 2.6, 2.7, 2.8 and 2.9). The region's rainfall is bimodal with long rains coming in March to June and short rains in September to October. Average rainfall ranges from 500 mm in the rangelands of the Nyika Plateau to 1,200 mm in the high rainfall areas of the Coastal Strip. With about 5,000 mm rainfall per annum, Shimba Hills are most wet zone.

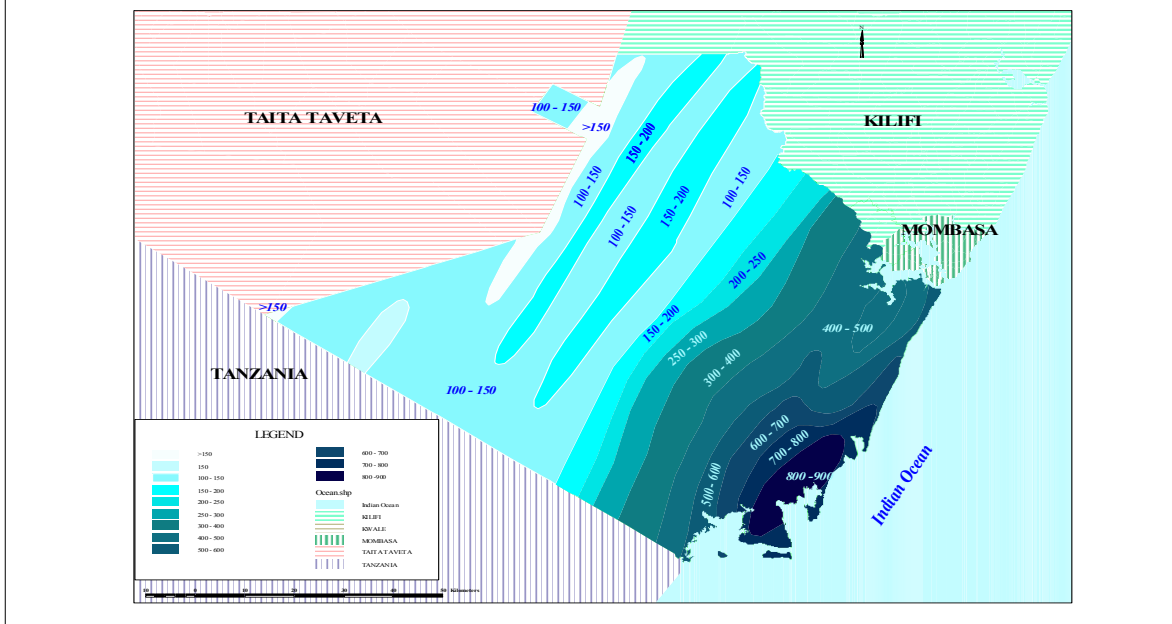
Table 2.3: Mean Annual Rainfall for Various Stations in the Region	
Station	Mean Annual Rainfall (mm)
Marere (Shimba Hills)	4974.9
Kwale Town	1079.3
Ndavaya	759.3
Kinango	822.9
Samburu	598.0
Mackinon Road	692.2
Mariakani	868.9
Vanga	1118.8
Tiwi	1290.9
Gazi	1375.6
Lunga-lunga	882.6

Source: Coast Province — Regional Physical Development Plan 1969



Source: Derived from Farm Management Hand Book of Kenya, 1978

Map 2.7: Rainfall Reliability (Long Rains)

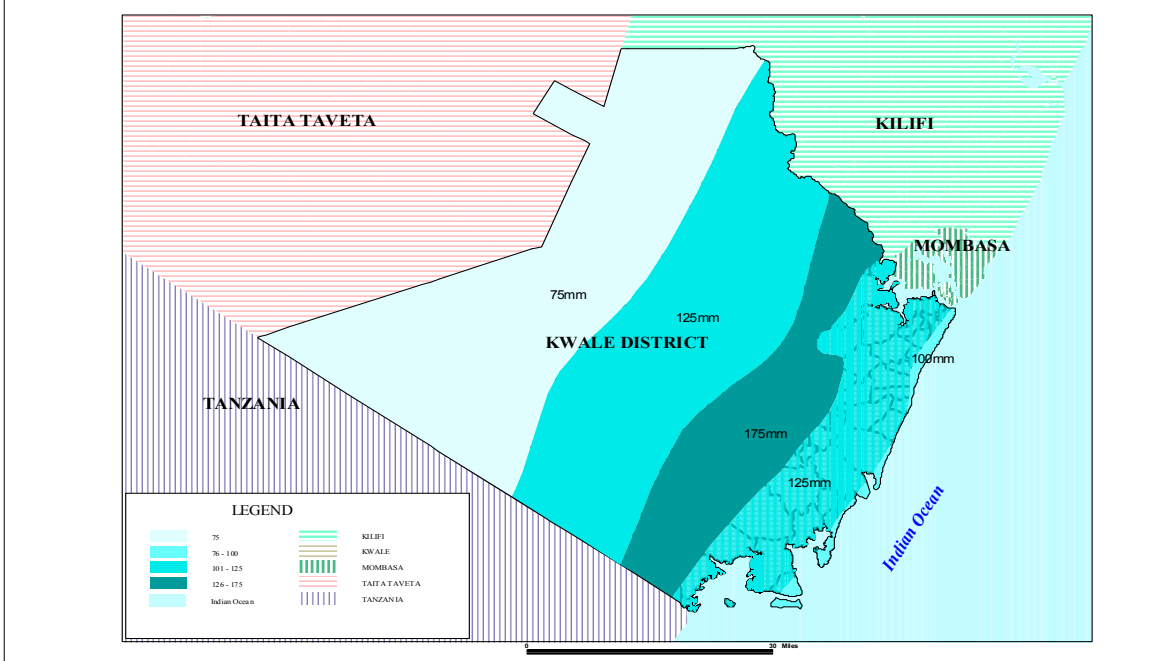


Source: Derived from Farm Management Hand Book of Kenya, 1978

2.4.2 Temperature and Humidity

Being close to the sea as well as near the equator, the region has high temperatures and high relative humidities. However, the regions hinterland is hot with lower humidity than the coastal strip. Humidity thus varies between 95 per cent along the Coastal strip to 60 per cent in the hinterland. The coastal areas have temperature ranging from 26 degrees centigrade to 30 degrees centigrade. The hinterland has relatively higher temperatures ranging between 30 degrees centigrade and 40 degrees centigrade. The region's mean annual minimum temperature is 22 degrees centigrade but Shimba Hills and Mrima, which are very close to the sea, have a cooler climate accounted for by their high altitude.

Map 2.8: Rainfall Reliability (long rains — March to May)

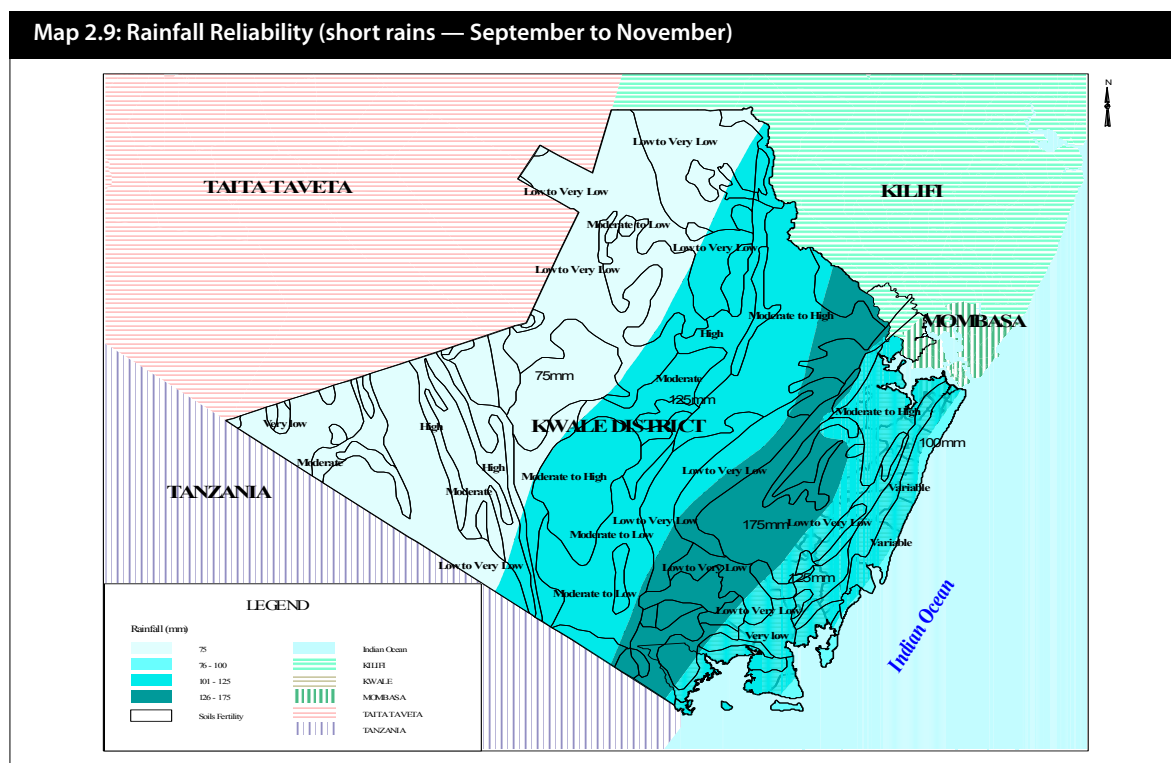


Source: Derived from Farm Management Hand Book of Kenya, 1978

Similarly, humidity is low. The Nyika plateau, which is lower than Shimba Hills and is a rain shadow area, is dry with high temperature and low relative humidity.

2.4.3 Winds

Two prevailing wind directions influence the climate of the region. These are the Southwest Monsoon winds. The South-Westerlies blow inland in October to March while the North-Easterlies blow towards the sea in April to September. These two prevailing winds bring in changes in rainfall and temperatures in the region. Short rains are usually in October to November when the monsoons blow inland. Long rains are in March to May and are influenced by Monsoons blowing towards the sea.



Source: Derived from Farm Management Hand Book of Kenya, 1978

2.5 SOILS

Soil can be defined as a mixture of living organisms, organic matter, minerals, water and air.

2.5.1 Soil Types and Distribution

Soil types and distribution over the region can broadly be categorized into four physiographic subdivision zones:

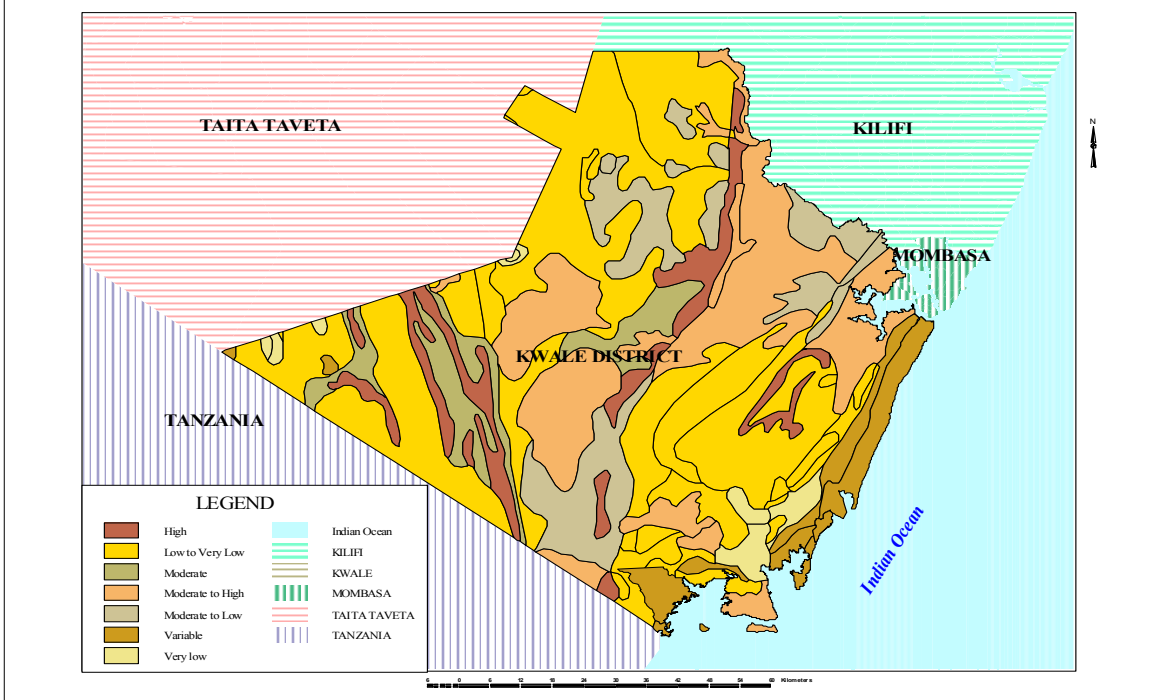
(a) Coastal Plains

In this zone, soils are developed on raised coral reef and on unconsolidated lagoon deposits. These soils are predominantly sand and loamy textured. Maps 2.10 and 2.11 show soil type distribution. Areas covered by coastal plain zone types of soils are Likoni to Chale, parts of Msambweni, Funzi, Shimoni and Wasini Island. Other areas are Muhaka, Ramisi, Majoreni and Vanga / Lunga-lunga. Some of the soils in this zone are partly saline.

(b) Coastal Uplands

In this zone, soils are developed on unconsolidated sandy deposits, shale and limestone. They range from sand to loam, loam to clay and shallow to deep and are heavy textured. The areas covered by these types of soils are Waa/Matuga, Vuga/Tsimba, Magodzoni/Kundutsi, Bongwe/

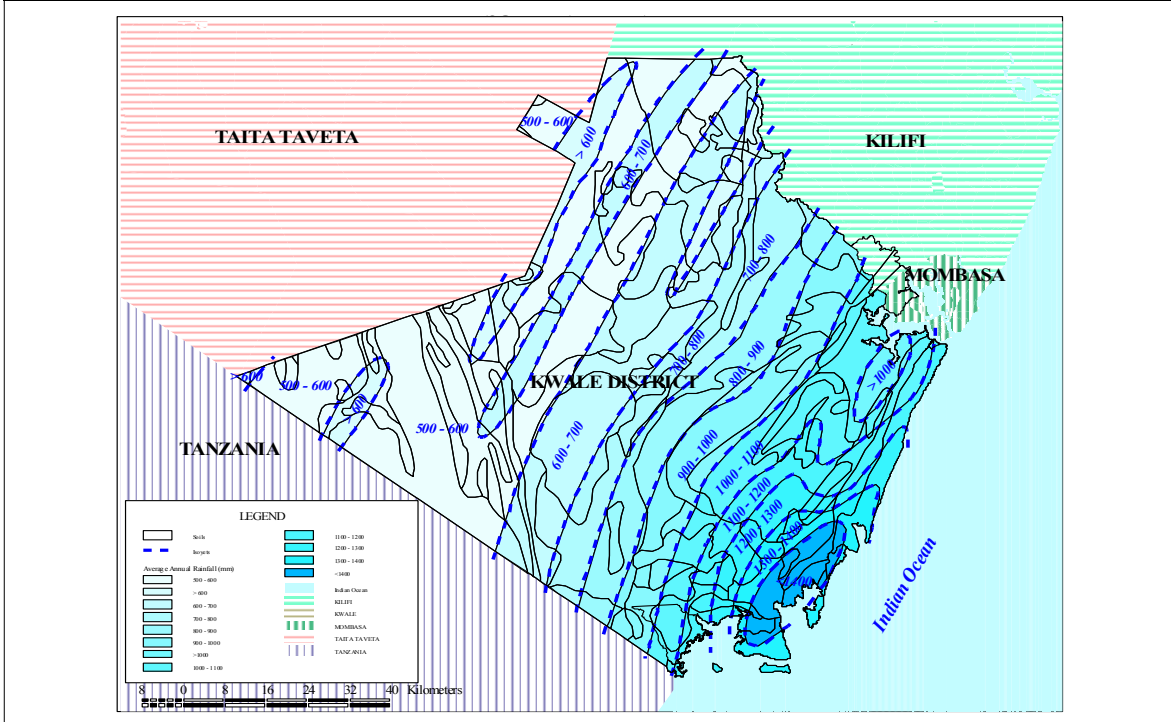
Map 2.10: Soil Distribution



Source: Derived from Farm Management Hand Book of Kenya, 1978

Makobeni and Kiwegu/Jego. Others are Shimba Hills, Kikoneni, Perani, Mkongani, Mbuguni, Tsunza and some parts of Kinango and Mariakani. The moisture content of soils in this zone range from well to imperfectly drained.

Map 2.11: Soils and Rainfall



Source: Derived from Farm Management Hand Book of Kenya, 1978

(c) **Inland Plains**

In this zone are soils developed on gritty sandstones, shale and basement system rocks. The soils in this zone, also referred as the Nyika Plateau, are deep and imperfectly drained. Areas covered by these soils are Taru, Samburu, Mackinon, Kilimangodo and west of Shambini.

(d) **Other types of Soils**

Two categories can be recognized:

Soils developed in tidal swamps and flood plains. They mostly cover areas in the southern parts of the Coastal plain, namely Wasini Island, Majoreni, Shirazi/Bodo, Gazi, and Tsunza and along Uмба River flood plain. There also are soils developed on the hill scarps and Kuranze Triangle. They are loamy-to-sandy, shallow to deep and well-drained.

In order to improve on crop yields, measures should be undertaken to raise the soil fertility of the region. Efforts should be directed towards having a positive effect on the humus content of the soil. Applications of fertilizer should consider nitrogen and phosphorus as the most important nutrients.

2.5.2 Soil Fertility

Generally, the soils of the region range from moderate to low in fertility. This is demonstrated by looking at the parameters that constitute a fertile soil. Table 2.4 generally shows the average available nutrients of the soils of the region.

Parameter	Rating	Remarks
Soil reaction (PH) Acidity	Moderately acid Low	Suitable for plant growth P45-6
Available Nutrients		
Sodium	Low	
Potassium	Low to adequate	
Calcium	Low	
Magnesium	Low to adequate	0.4 – 1.6 MC/100 gm
Manganese	Low	
Phosphorus	Low	
Total Nitrogen	Low	
Organic carbon	Favourable	
Carbon/Nitrogen Ratio	Not favourable	
Calcium/magnesium Ratio	Not favourable	
Potassium/Magnesium Ratio	Not favourable	

Source: District Agricultural officer Kwale

Plate 2.4: Typical Soils in Kinango



Source: Physical Planning Department, 1978

2.6 VEGETATION AND WILDLIFE

The distribution of vegetation and wildlife in the Mombasa Mainland South/Kwale District as a region is controlled by a number of factors that are interrelated. These are climate, the geological formation (soil), man's activities i.e. tree cutting, clearing, burning and overgrazing. Vegetation in the region can be grouped into two, terrestrial and marine vegetation.

2.6.1 Forests

The total area covered by forests in the region is about 7 per cent, 54,544 ha. Out of this total, 35,043 ha. are gazetted forest cover while 19,500 ha. are not gazetted. Four types of forests can be discerned.

- i. *Tropical Rain Forest*
Only remnants of this forest exist and cover about 29,000 ha. Most of the Shimba Hills Plateau, Mrima and Dzombo Hills and Buda, Muhaka and Gongoni fall under this type.
- ii. *Planted Forest*
These are mainly exotic species. The planted area of this forest covers about 1000 ha., of which 90% is of soft wood and 10% indigenous type. Part of the open grassland in Shimba Hills Plateau is planted with exotic species.
- iii. *Dry land Forest*
Dry land forest in the region is like Marenje Forest, the area behind Shimoni and the area in the northern escarpment of Shimba Hills. Other areas in the region covered by this type of vegetation are west and south of Mkongani. Also in this type of forest are the various Kaya forests that dot the region.
- iv. *Bushes and Grassland*
This type of vegetation covers areas next to tropical forest, dry land forest and uncultivated areas outside these two areas. Where bushes have been cleared giving way to cultivation and charcoal burning, the most dominant feature is grass (See Plate 2.5).
- v. *Farmland*
This type of vegetation is composed of coconuts, cashew nuts and mango trees. Others are citrus, maize and horticultural crops. Most of this vegetation is along the coast and in areas of good rainfall.

Plate 2.5: Natural Forest in Kinango



Source: Physical Planning Department, 2004

2.6.2 Marine Vegetation

Marine vegetation of the region includes:

a) *Mangroves*

Mangrove swamps cover approximately 8000 ha., with the largest systems in Gazi and Vanga-Funzi area. People have traditionally harvested mangrove posts for subsistence, and for commercial use as building material. Despite this, estimates of area under mangrove cover have remained constant.

b) *Sea grass Beds*

Sea grass beds occur along the region's coastline usually adjacent to or associated with coral reefs. They serve as an important habitat for many species and as sediment trap, thus keeping coastal beaches pristine.

2.6.3 Wildlife

This can be divided into two: terrestrial and marine wildlife communities.

i. *Terrestrial Wildlife*

The remnant of the tropical forest in the region has been gazetted for conservation as the Shimba Hills National Reserve and the Mwaluganje Elephant Sanctuary. This is so because of the abundance of animal species that has made the reserves a tourist attraction. Among the species found in the reserves are elephant, eland, sable antelope, giraffe, yellow baboon, Angolan columbus, sakes monkey, Grimm's bush buck, hyena, leopard, buffalo, and water back.

In the other types of terrestrial vegetation some of the above animal species of tourist attraction are found especially in the ranches of Kinango and Samburu Division. They include zebra, impala, Grants gazelles, eland oryx, gerenuk, lesser kudu and lion. Some of these ranches such as Kuranze, should be developed for tourism. Out of these animal species, the sable antelope is endemic. Also, 111 forests birds, of which 20 are coastal birds, have been recorded.

ii. *Marine Wildlife*

The mangrove forests and sea grass beds perform vital functions in protection and enrichment of the coast eco-system. They serve as habitat for many species of fish octopi and holothurians that are exploited commercially. Mangrove forests are habitat for a variety of terrestrial and aquatic plants and animals. The terrestrial fauna includes many species of birds, reptiles, mammals and insects. The aquatic fauna include prawns, crabs and molluscs.

Plate 2.6: Bushes and Grassland in Kinango



Source: Physical Planning Department, 2004

Sea grass beds are also feeding ground for endangered species such as the green turtle, the hawksbill turtle and the dugong. The Kisite Mpunguti Marine Reserve has been established to protect and conserve some of the endangered species and their breeding grounds.

2.7 AGRO-ECOLOGICAL ZONES

Tables 2.5 and 2.6 illustrate the land potential in the region.

Basically, the study region falls within the lowland zones (coastal lowland zones), L1. This can be further subdivided into five distinct Agro-ecological zones.

a) Lowland Sugarcane Zone, L2

This zone is characterized by long to medium cropping season and intermediate rains, good yield potential (average 60–80 per cent of the optimum) for maize, sorghum, sweet potatoes, sunflower, soya beans, cowpeas, simsim and all vegetables. Cassava, bananas, coconuts, mangoes, bixa, paws, avocados, curcuma can be grown throughout the year. Fair yields can also be derived

Table 2.5: Land Potential for Agriculture

	Km²	Per cent
High	126	15.25
Medium	162	19.61
Low	508	61.50
Total	796	96.36
All other land	30	3.63
Total land Area	826	100.00

Source: Statistics Abstracts 2003

Note:

Rainfall Potential	Average Annual rainfall
High	Above 980 mm
Medium	735 – 980 mm
Low	Less than 735

Table 2.6: Distribution of Agro-Ecological Zones per Division

Area	Kwale District	Kubo	Matuga	Msambweni	Kinango
Total Area (ha)	832,200 100%	65,200 7.8%	32,000 3.8%	274,000 33%	460,000 55%
Agric. Area (ha)	776,700 93%	43,478 5.7%	24,922 3.2%	250,015 32%	458,285 58%
High Potential	-	-	-	-	-
Medium Potential	120,000 15%	33,478 28%	12,422 10%	74,100 62%	-
Marginal	147,000 18%	10,000 7%	12,500 18%	95,915 65%	28,585 29%
Range & Desert	530,300 67%	-	7,078 1.3%	93,422 18%	429,700 81%

Source: Kwale District Development Plan 1989–1993

(40–60) per cent of the optimum in rice, groundnuts, sunflower and soya beans in flood plains and light soils. Sugarcane, cashew nuts, citrus and pineapples can be grown throughout the year on light soils.

Pasture and forage for animals is available in this zone. The zone is suitable for growing of napier grass and other types of fodder. Generally, it is a high potential zone.

b) Coconut, Cassava Zone, L3

This zone is characterized by good yield potential, fair yield potential and poor yield potential (20–40 per cent of the optimum). Pasture and forage can also be grown in this zone. Suitable crops include maize, sorghum, potatoes, beans, simsim, sunflower, soya beans, vegetables, tomatoes, onions, kales, and cabbages. Coconuts, cassava, bixa, mangoes, bananas, pawpaw, avocados, sisal, pineapples, guavas, castor, citrus can be grown throughout the year.

c) Cashew nut-Cassava Zone, L4

The zone is marked by small potential to good yield potential in some areas. The zone is suitable for maize, sorghum, beans, groundnuts, sweet potatoes, soya beans, sunflower and vegetables.

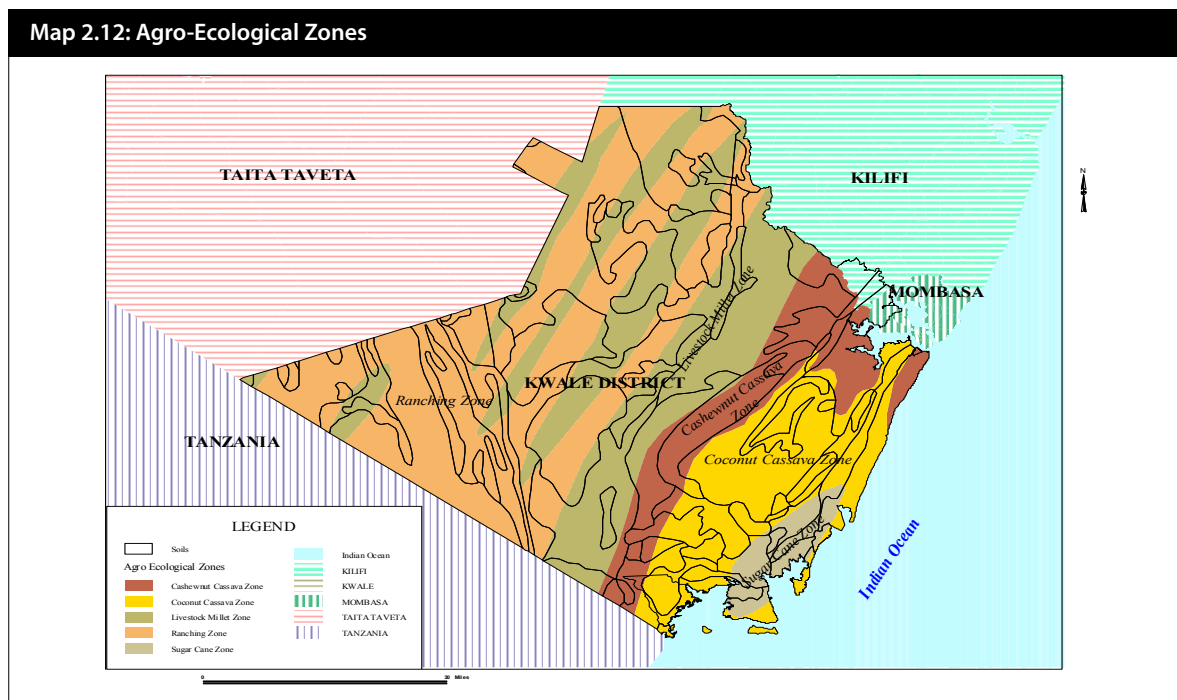
Plate 2.7: Cassava Cultivation

Source: Physical Planning Department, 2004.

Cassava, cashew nuts, sisal, castor and mangoes can be grown throughout the year. Pasture and forage can be grown although the yield is lower than it is within the coconut-cassava zone, L 3. The cashew nut cassava zone is generally marked by very short-to-medium cropping season with intermediate rains.

d) Lowland Livestock Millet Zone, L5

It is a poor-to-fair potential zone although some areas have good-yield potential. The zone is suitable for sorghum, millet, green grams, and cassava. Small leaved bush land is predominant. Livestock rearing is predominant in this zone.



Source: Physical Planning Department, 2004.

e) Lowland Ranching Zone, L6

It is a lowland ranching zone with bimodal rainfall. Cattle, sheep and goats are reared in this zone. Short grass mixed with small leaved bush land is predominant. Areas with evergreen thickets are infested by tsetse flies.



Source: Physical Planning Department, 2004

2.7.1 Carrying Capacity

A close analysis of available land in the region, together with its potentiality, is necessary to ensure that it is being used to the optimum. Distribution of agricultural land potential has important implications for future population distribution and consequently for the planning of human settlements. The land potential when measured against the expected population increase reveals the pressure of population on land. Agricultural potential can be analyzed using soil quality and annual rainfall. In the study area, the following soil quality zones are found.

- i. Zone III of medium quality soils of more than 1,015 mm rain per annum. This is a high potential zone along the Coastal strip.
- ii. Zone IV with rainfall of 760–1,015 mm per year. This is a medium potential zone. It covers the central parts of region.
- iii. Zone V has good or medium quality soils. It has rainfall of 510–760 mm per annum. This is a zone of medium-to-low potential. It covers most of Kinango and Samburu Divisions.
- iv. Zone VI has poor soils and excessively steep slopes with more than 510 mm of rain per annum. It has low agricultural potential. Soil quality is a constraint. The zone is along eroded coastal and steep areas of Shimba Hills.
- v. Zone VII has good or medium soils. Rainfall is less than 510 mm per annum. It has low agricultural potential. Lack of water is a major constraint. It is in the upper parts of Samburu division.

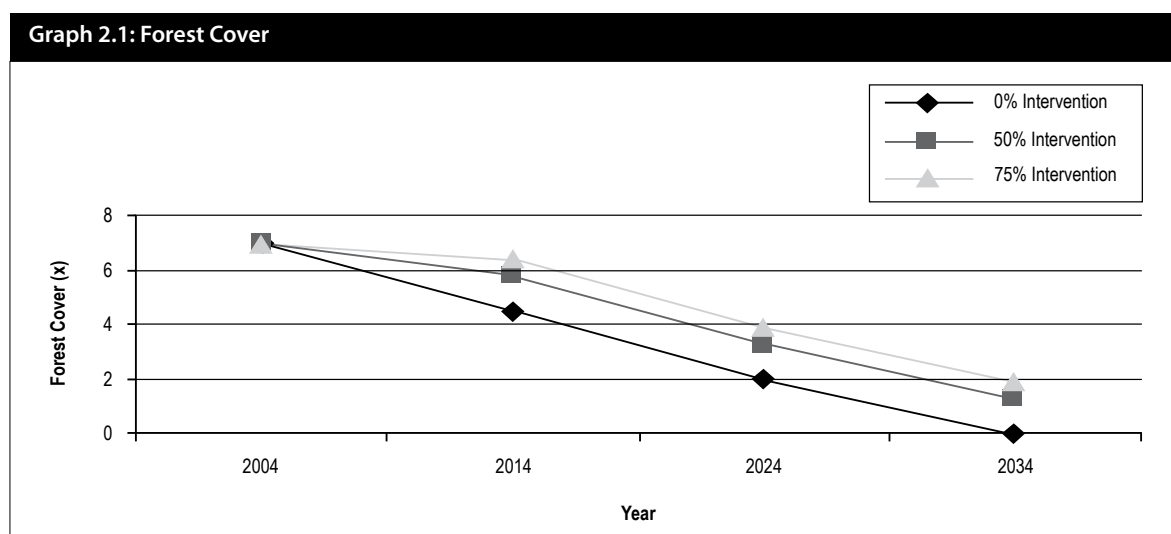
2.8 FORECASTING AND SCENARIO BUILDING

This section discusses trends in natural resource use projected for a period of 30 years (2004–2034). The projections indicate the availability of natural resources for regional development in the subsequent years. Given the assumption that the current production and consumption patterns will continue, three scenarios are built. One where there is no intervention (0 per cent), second with 50 per cent intervention, and last with 75 per cent intervention.

2.8.1 Forest Cover

Generally, the three scenarios portray a steady increase of demand on natural resources as the population increases. Similarly, the supply of natural resources declines. Forest cover (land cover), water flow volume and beach development are used as indicators to either show the decline and/or increase of resource use.

The current forest cover in the region is 7 per cent, that is 54,544 ha. The projection used the rate of depletion of the national forest coverage (0.25 per cent per annum), to conclude that about 19,580 ha. would be lost every 10 years. The projection at no intervention shall be 4.5 per cent (35,064 ha), 2.0 per

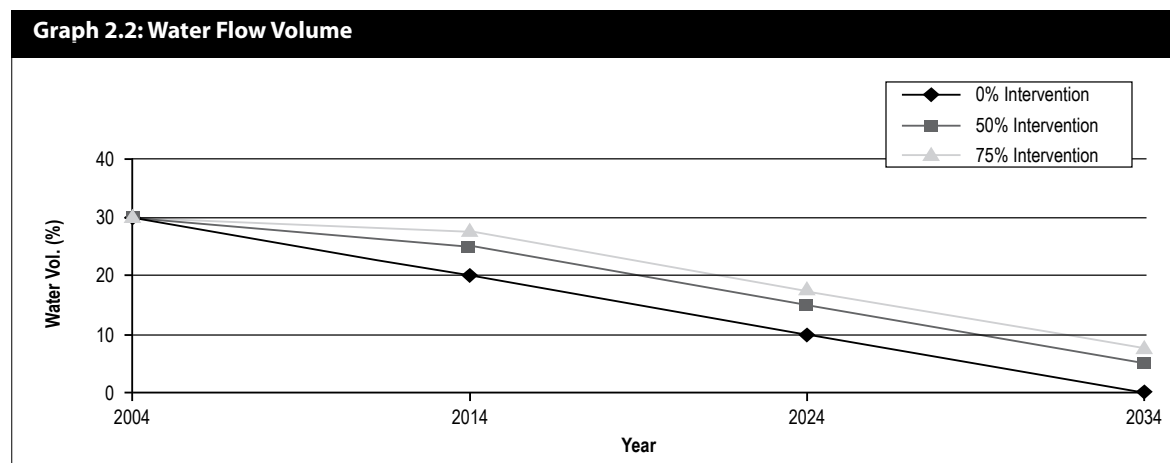


Source: Physical Planning Department, 2004

cent (15,584), and 0.0 per cent for the year 2014, 2024 and 2034 respectively. At 50 per cent intervention 9,790 ha of forest cover will be lost every 10 years. Thus in 2014, 2024 and 2034 the remaining forest cover from the initial 54,544 ha. will be 44,854 ha., 25,374 ha. and 9,790 ha., respectively. At 75 per cent intervention, 4,795 ha of forest cover will be lost every 10 years. In 2014, forest cover will be 49,749 ha.; in 2024, 30,269 ha.; and in 2034, 14,685 ha.

2.8.2 Water Volume

The current status of water volume in rivers and streams is 30 per cent and, there is a likelihood that in 2014, 2024, and 2034, the flow rate will have reduced to 20 per cent, 10 per cent and 0 per cent, respectively in the no intervention scenario (see the 50 per cent and 75 per cent intervention in table 2.7).



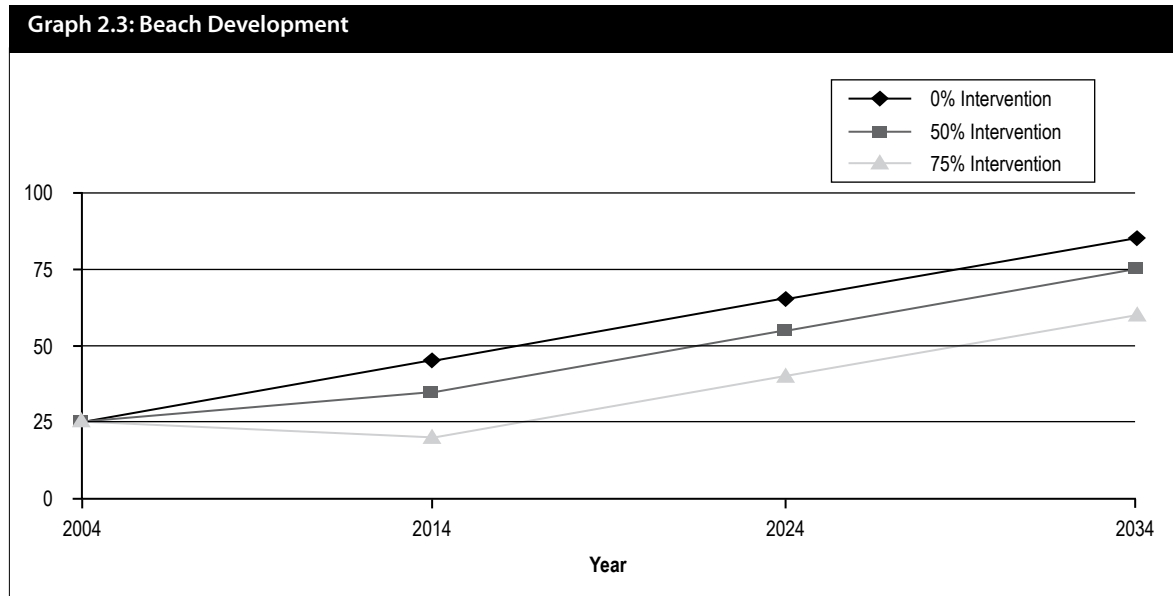
Source: Physical Planning Department, 2004

Issues	Current Status	10 Years (2014)	20 Years (2024)	30 Years (2034)	Remarks
Beach development (Distance development vs. Total Distance at 2%)	25%	45% 35% 20%	65% 55% 40%	85% 75% 60%	
Forest cover 0.25% Lost per year 19,580 ha lost every 10 years	7% (54,544 ha)	4.5% (35,064 ha) (44,854 ha) (49,749 ha)	2.0% (15,584 ha) (25,374 ha) (30,269 ha)	-0.5% ha) (97,90 ha) (14,685 ha)	
Water flow volume (40% recommended)	30%	20% 25% 27.5%	10% 15% 17.5%	0% 5% 7.5%	
Population projection 2.6% 1.3% (50%) 0.7% (25%)	677,302	890,413 770,685 726,235	1,172,209 876,943 778,703	1,545,474 997,785 834,962	
Population growth rate	2.2%	1.4%	0.6%	0	Declining
Fertility	6.0*	6.0*	6.0	6.0	Constant
Mortality	13.7 (1000)	13.7 (1000)	13.7 (1000)	13.7 (1000)	Constant
Dependency Ratio	50%	50%	50%	50%	Constant
Poultry levels Kwale 63% Likoni 48%	355,364 52,568	459,352 74,871	593,773 106,638	767,528 151,884	The percentage is Constant while the Population figures Increase
Cultural belief (Core illiterate) (Population 24%)	159,913	211,699	281,330	370,914	Constant illiterate Population at 24%

Source: Government of Kenya, Ministry of Lands, Physical Planning Department

2.8.3 Beach Development

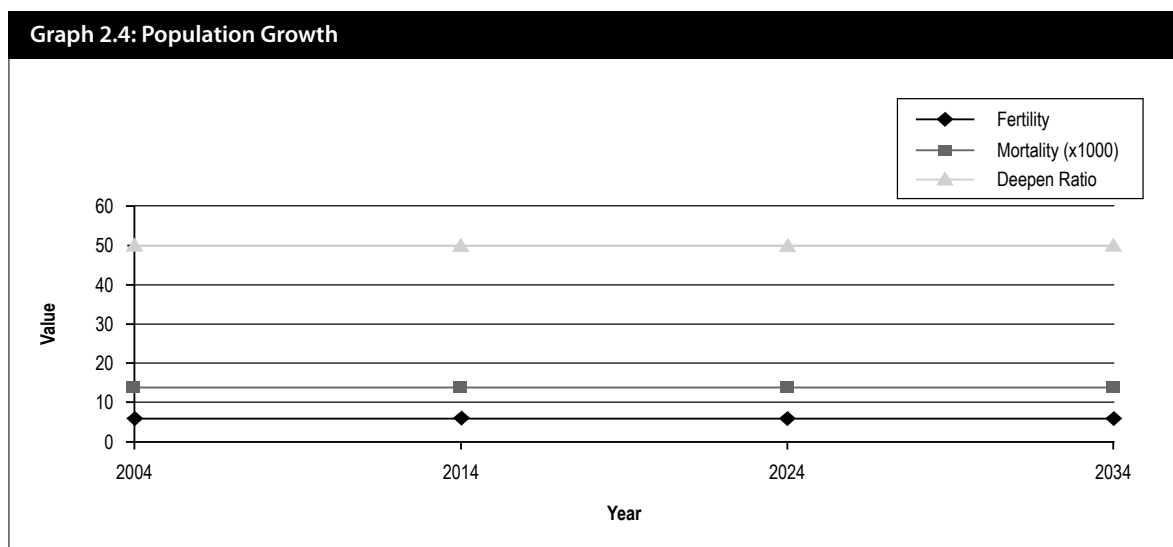
Similarly, if the tempo maintained in beach development, where the current status is 25 per cent, there is a likelihood increase to 45 per cent, 65 per cent and 85 per cent for 2014, 2024 and 2034 year period in the no-intervention scenario (see for 50 per cent and 75 per cent intervention in Table 2.7).



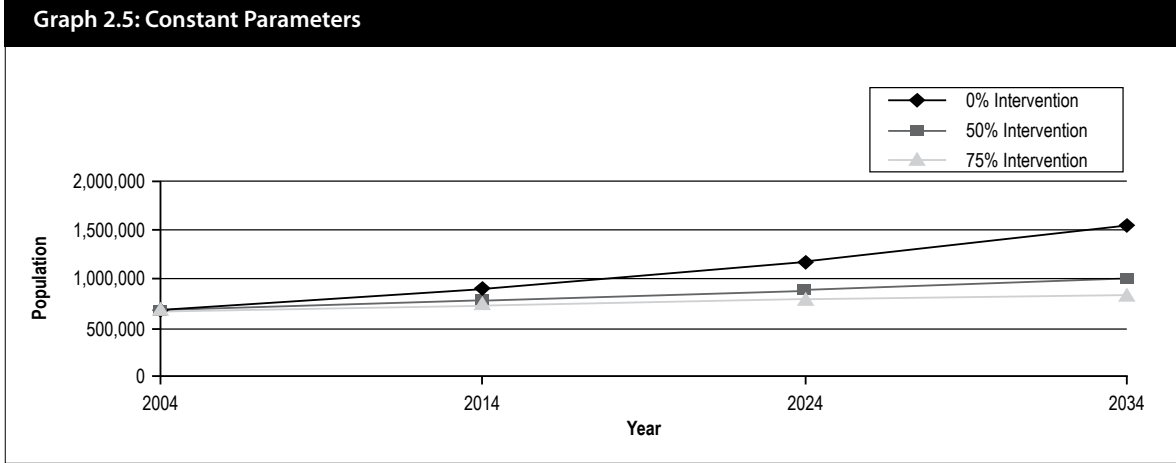
Source: Physical Planning Department, 2004

2.8.4 Socio-Cultural and Population Profile Projections

Population increase creates a demand for natural resources. It is therefore imperative to project population increase in the next 10, 20, and 30-year periods. In the year 2004 the population of the region was 677,302. Projected at the 2.6 growth rate in 2014, 2024 and 2034 the number is likely to increase to 890,413, 1,172,209 and 1,545,474, respectively in the no-intervention scenario. However, at the 50% intervention, the growth rate will be 1.3 per cent. In 2014, 2024, and 2034 the population will be 770,685, 876,423 and 997,785, respectively. While at 75 per cent ntervention the growth rate will be 0.7 per cent, this will rise to a population of 726,235, 778,703 and 834,962, respectively, for the years 2014, 2024 and 2034.

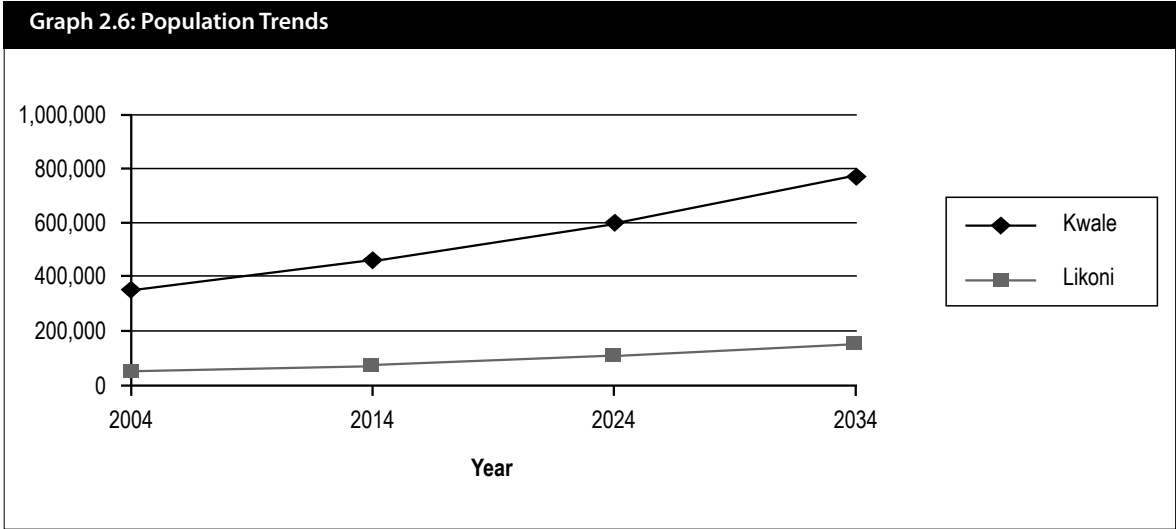


Source: Physical Planning Department, 2004



Source: Physical Planning Department, 2004

In considering the role of socio-culture in development, cultural belief is a dominant factor that either impedes or propels development. The core illiterate population is likely to be entrenched in strong cultural beliefs and is therefore used as an indicator in the socio-cultural projection. The current illiterate population in the region is 159,913, which is 24% of the total. If we use 24 per cent as a constant, the projected illiterate population will be 211,699; 281,330 and 370,914 in the no-intervention scenario (See Table 2.7 at 50 per cent and 75 per cent intervention).



Source: Physical Planning Department, 2004

2.9 EMERGING PLANNING ISSUES

2.9.1 Geology and Relief

- Beaches not fully exploited;
- Soil formations in the hinterland make road construction difficult, as roads are susceptible to erosion when it rains;
- Beach erosion in some parts of Diani;
- Scarp areas along the Shimba Plateau and along the rolling hills south of the plateau have recorded considerable erosion; and
- Soil fertility range from moderate to low.

Plates 2.9: Uncontrolled Quarrying



Source: Physical Planning Department, 2004

Plate 2.10: Beach Depicting Existing Tourism Potential



Source: Physical Planning Department, 2004

Plate 2.11: A picture of a Kaya



Source: Physical Planning Department, 2004

2.9.2 Climate

Three quarters of the region receives 500 mm of rain and below.

2.9.3 Drainage and Water Resources

- All rivers are seasonal;
- Existence of swampy areas in Vanga, Ramisi and Bodo areas; and
- Saline rivers and ground water along the Duruma series, that cover half of the region.

2.9.4 Vegetation

- Destruction of ungazetted forests; cultivation, settlement and charcoal burning;
- Low rate of replacement due to uncontrolled deforestation;
- Uncontrolled harvesting of forest products, e.g. mangroves; and
- Uncontrolled quarrying.

2.10 OPPORTUNITIES

- Abundance of minerals;
- Existence of beaches and sea fronts;
- Conducive climate;
- Potential for port development e.g. Shimoni;
- Fishing industry;
- Water transport;
- Water sporting activities;
- Presence of forest resources; and
- Abundance of building materials.

Environment

3.1 INTRODUCTION

Environmental concerns are now a major input in development imperatives as already alluded to in the natural resource base chapter. The National Policy on Environment and Development of 1999 culminated in the enactment of Environmental Management and Coordination Act (EMCA) No. 8 of 1999. Of more particular concern to regional physical development planning is EMCA Section 58 that stipulates the requirement for an environmental impact assessment report for any project, plan, programme or policy proposed. The Environmental Impact Assessment Regulations (2003) specify the need for a strategic environmental assessment (SEA) as a requirement before a plan, and/or a policy can be implemented. Regional Physical Development Plan proposal for Kwale must provide a strategic environmental assessment (SEA). This chapter therefore endeavors to provide insight in this direction.

The chapter discusses the general environmental concerns in regional development planning and the implications to environment of the various plan proposals. The chapter thus presents the broad concerns in environmental planning and management such as environmental fragile areas, environmental pollution, environmental health, environmental hazards, environmental infrastructure, and environmental standards, among others.

3.2 ENVIRONMENTAL FRAGILE AREAS

The coastal environment presents a number of fragile environments in the region, such as wetlands, threatened natural forests, and biodiversity habitat sites, among others. These fragile areas are threatened ecosystems resulting from human settlement activities:

- a) Sea shores and beaches: Erosion and pollution in Likoni and Diani;
- b) High potential areas: Pollution and slum development in Ukunda, Diani, Shimba Hills;

Plate 3.1: A Kaya at Shimoni



Source: Physical Planning Department, 2004

- c) Very dry areas: Over grazing in Kinango and Samburu;
- d) Forest ecosystem: Depletion of forest cover and species in the Kayas;
- e) Steep slopes and hill slopes: Erosion, loss of vegetation cover
- f) Wetlands: Drying up in Bodo and Ramisi; and
- g) Wildlife conservation and marine conservation areas: Extinction of rare species in Shimba Hills and Mwaluganje.

3.2.1 Wetlands

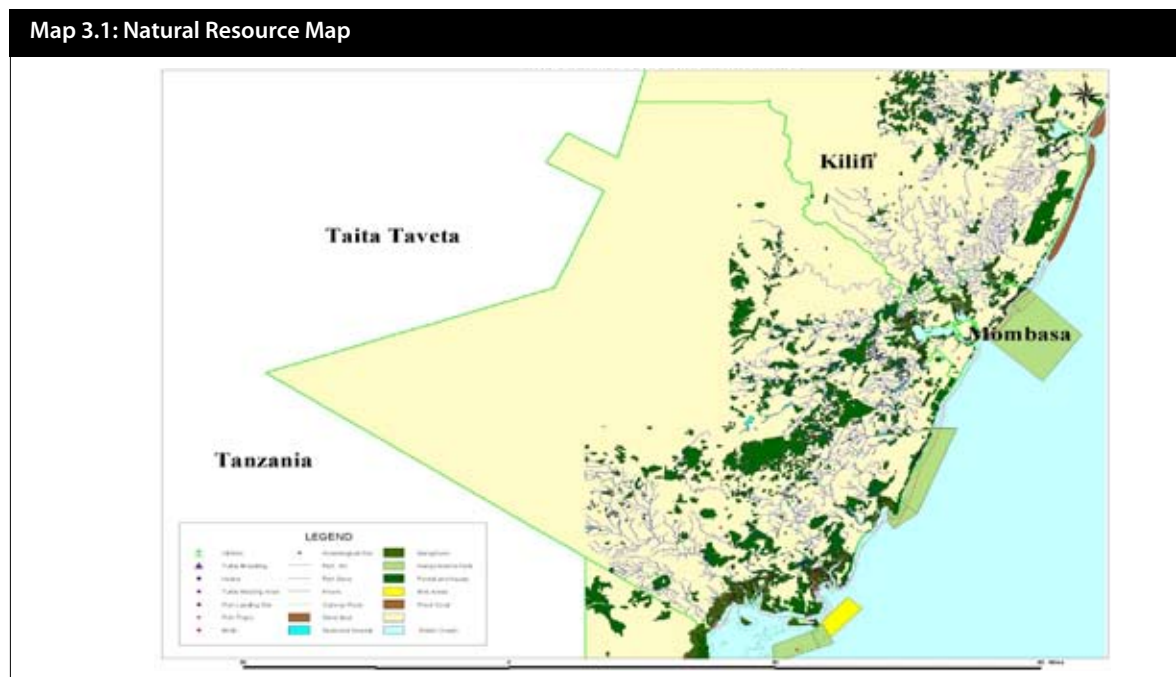
The known wetlands in Kwale and Mombasa Mainland South regions include mangrove swamps of Gazi and Funzi. Secondly, there are the drying Bodo and Ramisi wetlands.

3.2.2 Threatened Natural Forests

Most of these threatened natural forests are Kayas, namely Kaya Diani, Kaya Kinondo, and Kaya Chale, among others. There is also the Shimba Hills Forest Reserve where illegal and legal loggings are prone. Lastly, the natural mangrove forests at Gazi, Vanga and Funzi and Tsunza areas are threatened.



Source: Physical Planning Department, 2004



Source: The Eastern Africa Coastal and Marine Environment Resources Database and Atlas Project

Plate 3.3: Beach Erosion at Wasini Island



Source: Physical Planning Department, 2004

Plate 3.4: Vegetation Destruction for Farming in Mivumoni



Source: Physical Planning Department, 2004

Plate 3.5: Threatened Forest at Kaya Kinondo



Source: Physical Planning Department, 2004

3.2.3 Biodiversity Habitat Areas (Marine)

Biodiversity areas are mainly concentrated in the national reserves. Mpunguti and Kisite Marine National Reserves are the two most important reserves that are operational. Diani and Chale National Reserves are not operational because of objection from the local community.

3.2.4 Coastline

Due to deposition and erosion of coastline plus human activities such as fishing and human settlement, coral reef and seaweed beds are being destroyed.

Plate 3.6: Coastal Erosion and Deposition at Diani Beach



Source: Physical Planning Department, 2004

3.3 ENVIRONMENTAL POLLUTION

Pollution concern in the region is enormous as human settlement activities increase. There are three types of pollution prevalent in the region. These are water, air and noise pollution.

3.3.1 Water Pollution

Water pollution represents a major challenge in the region. This mainly occurs along the developed beach coastline from beach hotels, industries and informal settlements. Notable sources of water pollution are urban areas due to unmanaged solid and liquid waste. These include Kwale Town, Ukunda-Diani, Likoni and Kinango towns, among others. However, there are natural water pollution sources for groundwater found in the Taru and Maji-ya-Chumvi formations causing saline waters. Lastly, within the marine environment, oil spillage along the Kilindini channel is rampant.

3.3.2 Noise Pollution

Noise Pollution areas are found along the major transport routes (roads, rail, air), mainly on the Mombasa-Nairobi road and Likoni-Lunga-lunga road. The frequency of air flights also present a lot of noise pollution in the Diani Air strip area.

3.3.3 Air Pollution Phenomenon

This phenomenon has been reported at Tiwi Bixa factory, and Mwabungo Dumping Site.

3.4 ENVIRONMENTAL HEALTH

The environment and development policy advocates for a clean and healthy environment. However, lack of appropriate management of human settlement has been an impediment. Planning and uncontrolled development has led to a degraded environment. Informal settlements in this region lack proper water drainage and sewerage system, and have therefore become breeding ground for disease vectors. Some of the known environmental diseases include cholera, typhoid, malaria as well as well-known water borne diseases. Whooping cough, bronchitis, asthma result from congestion in informal settlements. Notable examples of areas with environmental health problems include Lunga-lunga along the

River Uмба that is heavily polluted by faecal matter. Malaria ranks high due to climatic conditions that provide vector breeding ground all over the region. Food vendors in open spaces of urban areas are also a source of disease vectors.

3.5 ENVIRONMENTAL HAZARDS AND RISKS

The region is also faced with environmental hazards and risks, such as geo-hazards, floods, landslides, and radioactivity. Floods are common in Lunga-lunga, and Jeko areas and along rivers Uмба and Ramisi caused by impeded drainage. Geo-hazards are found in geologically unstable areas due to faulting in areas such as Mrima, Dzombo, Chiruku, and Kikoneni. Landslides also occur along the hill scarps of Shimba Hills. Radioactivity as an environmental risk is also found in the titanium mining areas and Mrima where there are rare earth elements.

Plate 3.7: Titanium Mining at Maumba and Nguluku



Source: Physical Planning Department, 2004

3.6 ENVIRONMENTAL INFRASTRUCTURE

Environmental infrastructure focuses on provision of water and sanitation. These issues are also discussed in the chapter on infrastructure. This section, however, reports that provision of both water and sanitation in both urban and rural areas are inadequate. Only 50 per cent of the region is well served with water supply, through piped water and shallow wells. This has environmental implications, where water health related problems focus on environmental health. Rural sanitation compared to urban is below the expectation where only about 25 per cent of the population have access to adequate sanitation.

3.7 STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

Environmental Coordination and Management Act (EMCA) No. 8 of 1999 requires every plan, programme, project and policy document to be subjected to an environmental impact assessment (EIA) study. In the case of a plan, such as a regional physical development plan, the report is referred to as strategic environmental assessment (SEA). The SEA requires that all the proposals in a plan be subjected to environmental assessment. The impacts are identified, and their causes and effects listed. Their mitigation measures are also broadly proposed in a SEA.

3.8 PHYSICAL ENVIRONMENT TRENDS

- Beach development expected to continue;
- Soil erosion to continue;
- Soil fertility expected to continue falling;
- Water flow volumes of rivers likely to reduce;
- Higher salinity due to concentration;
- Reduced forest cover;
- No marked difference in tree planting;
- Higher water pollution expected;
- Increased wetland encroachment; and
- Endangered species will tend towards extinction.

3.9 EMERGING PLANNING ISSUES

There are critical issues related to environmental concerns and development that require planning intervention:

- Coastline deposition and erosion around Likoni and Diani;
- Environmental pollution, mainly marine water pollution, especially oil spills;
- Depletion of forest cover and extinction of rare plant species;
- Loss of biodiversity in the designated marine, national reserves;
- Soil erosion along the steep slopes;
- Wetland encroachment due to human settlement activities
- Environmental hazards such as floods, risks in geo-hazard areas due to lack of disaster preparedness; and
- Lack solid and liquid waste management.

Socio-cultural and Demographic Profile

4.1 INTRODUCTION

Socio-cultural and demographic factors play a major role in the development of any region. Quality and quantity of the population and its socio-cultural aspects coupled with other factors are good indicators of the problems and opportunities for development of an area. Mombasa Mainland South and Kwale District is populated by two main ethnic groups. The Digo are the majority and constitute 60 per cent of the total population while the Duruma make up 25 per cent. According to the 1989 census report (GoK, 1999) other ethnic groups include Kamba (3 per cent), Wakifunzi (Shirazi 10 per cent), Maasai (1percent) and the rest (1percent).

4.2 POPULATION SIZE AND COMPOSITION

4.2.1 Population Size

In 1989 Mombasa Mainland South and Kwale District had a population of 432,962. The region's population increased to 591,016 in 1999 i.e. Likoni Division 94,883 and Kwale District 496,133 persons. The total population of the region represents 1.7 per cent of the national and 23.8 per cent of the Coast Province. In 2004 the population of Likoni and Kwale District was 94,883 and 496,133, respectively, totaling to 591,016 persons. By the year 2020, the population of the region is estimated at 1,043,391 (Table 4.1). This will increase to 1,336,704 by the year 2030. Kwale District will have 1,071,567 and Likoni Division 265,137 persons.

Inferences from the projections in Table 4.2 show that every division in the region will have a marked increase in population more so in Msambweni and Likoni. This will exert pressure on available resources. There is therefore need to plan for the increased population in terms of the regions resources to produce the needed goods and services.

Population Composition

Of the region's population of 328,547 in 1979, 164,637 persons were male while 163,910 were female. Male-female ratio for the region was 100:100 considering Kwale District alone, there were 141,746 male

Table 4.1: Population Size

Year	Kwale	Likoni	Total
1989	383,053	49,909	432,962
1999	496,133	94,883	591,016
2004	564,072	109,516	673,588
2020	850,535	192,856	1,043,391
2030	1,071,567	265,137	1,336,704

Source: Population Census Reports 1998, 1999

Division/Year	1999	2004	2009	2014	2019	2024	2029	2034
Kinango	72,027	81,890	93,104	105,854	120,349	136,829	155,567	176,870
Samburu	91,011	103,474	117,643	133,753	153,069	172,893	196,569	223,487
Matuga	72,512	82,442	93,731	106,566	121,159	137,751	156,614	178,060
Kubo	48,769	55,447	63,040	71,673	81,488	92,646	105,333	119,757
Msambweni	211,814	240,819	273,797	311,290	353,917	402,382	457,484	520,131
Likoni	91,765	109,516	130,700	155,982	186,154	222,163	265,137	316,424
Total	587,898	673,588	772,015	885,118	1,016,136	1,164,664	1,336,704	1,534,729

Source: Based on population census report, CBS, 1999

NOTE: Growth rate 3.6 (Likoni) and 2.6 (Kwale).

Sex	1989			1999		
	Kwale District	Likoni Division	Total	Kwale District	Likoni Division	Total
Male	185,945	28,216	214,161	240,764	52,844	293,608
Female	197,108	21,693	218,801	255,369	42,039	297,208
Total	383,053	49,909	432,962	496,133	948,83	590,816

Source: Population Census Report 1998–1999

and 146,617 females. Male-female ratio was 97:100. The region's male-female ratio for 1989 and 1999 was 126:100 and 99:100 respectively. The male-female ratio for Kwale District in 1989 and 1999 was 125:100 and 94:100. In 1999 the region had 293,608 males and 297,408 females of whom 240,764 males and 255,369 females were accounted for by Kwale District.

4.3 POPULATION STRUCTURE

In 1979, 161,988 persons of Kwale District's 288,363 total population were below the age of 20 years. This was 56 per cent of the total population. This figure increased to 58.6 per cent in 1989. Out of the total population of Kwale District's 383,053 persons, 224,525 people were below the age of 20 years. The situation dropped slightly to 57 per cent in 1999. About 284,682 persons were below age of 20 years out of the total district population of 496,133 persons. Out of the total population of Kenya, 56 per cent were below the age of 20 years.

In 1979, the dependency ratio was 48 per cent. This reduced to 42 per cent in 1989, but shot up again to 49 per cent in 1999. Out of the total population of Kwale District in 1979, 28 per cent were of primary school-going age (6-13 years). This percentage reduced to 25 per cent in 1989 and went up again to 29 per cent in 1999. The same trend was observed among the secondary school-going age. In 1979, 10 per cent of the district's population stood at secondary school-going age (15-19 years). This population was 9 per cent in 1989 and went up to 11 per cent in 1999.

The child bearing population age accounted for 45 per cent of the total population in 1979. This dropped to 36 per cent in 1989 but shot up to 46 per cent in 1999. In 1979 sex ratio for the age group 0-5 was 98 but shot to 100 and 101 in 1989 and 1999, respectively. For age group 10-14 sex ratio was 110 in 1979, 77 and 104 in 1989 and 1999, respectively. The sex ratio for age group 15-19 was 93 in 1979 and stood at 91 in 1989 and 1999, respectively. The ratios were 131 in 1979 and 119 and 105 in 1989 and 1999, respectively, for the age group 65-69.

Table 4.4: Population Projection to 2034 by Age Cohorts

Age Group	1999	2004	2009	2014	2019	2024	2029	2034
0 – 4	85,474	97,179	110,486	125,616	142,817	162,375	184,610	209,890
4 – 9	75,488	85,825	97,578	110,940	126,132	143,404	163,042	185,368
10 – 14	68,764	78,180	88,886	101,058	114,897	130,630	148,519	168,857
15 – 19	54,956	62,482	71,038	80,765	91,825	104,400	118,696	134,950
20 – 24	44,887	51,034	58,022	65,968	75,001	85,272	96,949	110,224
25 – 29	36,949	42,009	47,761	54,302	61,738	70,192	79,804	90,732
30 – 34	25,748	29,274	33,283	37,840	43,022	48,913	55,611	63,227
35 – 39	23,134	26,302	29,904	33,999	38,654	43,948	49,966	56,808
40 – 44	19,200	21,829	24,818	28,217	32,081	36,474	41,469	47,148
45 – 49	16,480	18,737	21,303	24,220	27,536	31,307	35,594	40,468
50 – 54	12,926	14,696	16,709	18,779	21,598	24,555	27,918	31,741
55 – 59	8,976	10,205	11,603	13,191	14,998	17,052	19,387	22,041
60 – 64	7,855	8,931	10,154	11,544	13,125	14,922	16,966	19,289
65 – 69	5,585	6,350	7,219	8,208	9,332	10,610	12,063	13,715
70 – 74	3,942	4,482	5,096	5,793	6,587	7,489	8,514	9,680
75 – 79	2,128	2,419	2,751	3,127	3,556	4,043	4,596	5,226
80 +	2,622	2,981	3,389	3,853	4,381	4,981	5,663	6,439
Age NS	1,016	1,155	1,313	1,493	1,698	1,930	2,194	2,495
Total	496,133	564,070	641,313	729,131	829,978	942,497	1,071,561	1,218,298

Source: Population Census Report CBS 1999

Table 4.5: Population by Age and Sex 1979, 1989 and 1999

Census Year	1979			1989			1999		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 – 4	26,119	26,640	52,759	34,618	34,746	69,364	43,033	42,441	85,474
4 – 9	23,479	23,461	46,940	31,865	32,205	64,070	38,273	37,215	75,488
10 – 14	17,103	15,594	32,697	26,201	24,909	51,110	34,977	33,787	68,764
15 – 19	14,226	15,366	29,592	19,071	20,910	39,981	26,234	28,722	54,956
20 – 24	10,498	14,486	24,984	12,188	16,427	28,615	18,648	26,239	44,887
25 – 29	10,282	12,165	22,447	12,458	15,927	28,385	16,582	20,367	36,949
30 – 34	7,692	9,297	26,989	9,713	12,240	21,953	12,687	13,061	25,748
35 – 39	6,676	7,433	14,109	8,776	9,827	18,603	10,789	12,345	23,134
40 – 44	5,629	5,817	11,446	6,961	7,891	14,852	8,635	10,565	19,200
45 – 49	5,389	4,692	10,081	6,148	6,202	12,350	8,104	8,376	16,480
50 – 54	4,060	3,387	7,447	4,945	4,887	9,832	6,195	6,731	12,926
55 – 59	3,045	1,375	5,420	3,865	3,219	7,084	4,706	4,273	8,979
60 – 64	2,489	2,038	4,527	3,185	1,949	6,134	3,861	3,994	7,855
65 – 69	1,872	1,429	3,301	2,168	1,824	3,992	2,862	2,723	5,585
70 – 74	1,208	994	2,202	1,502	1,281	2,783	2,095	1,847	3,942
75 +	1,748	1,282	3,030	22,187	1,579	23,766	2,592	2,158	4,750
AGE NS	231	161	392	441	89	530	491	525	1,016
Kwale Total	141,746	146,617	288,363	256,674	205,079	461,753	240,764	255,369	496,133
Likoni Division	22,891	17,293	40,184	28,216	21,693	49,909	52,844	42,039	94,883
Region Total	164,637	163,910	328,547	284,890	226,772	511,662	293,608	297,408	591,016

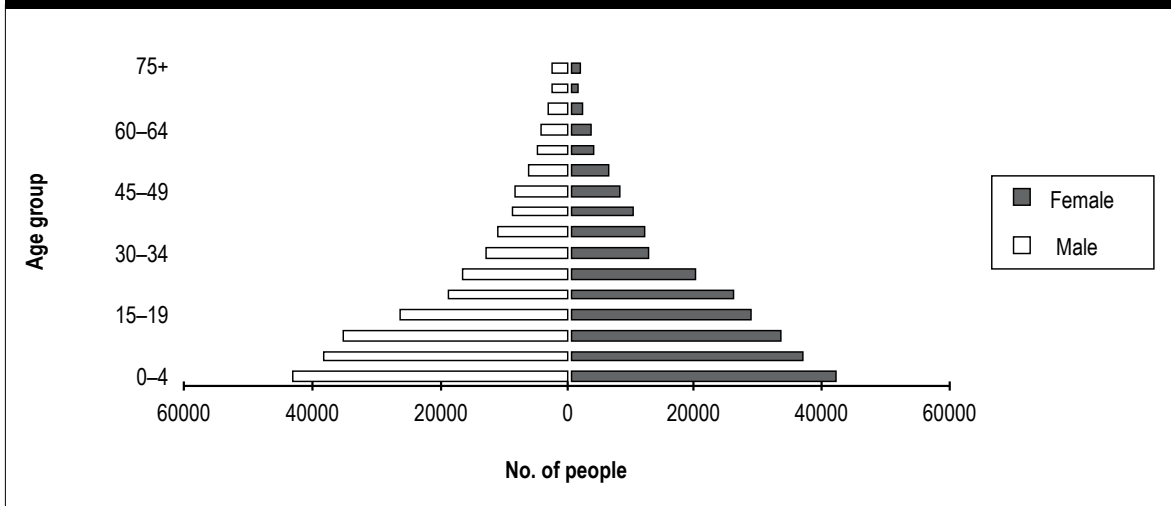
Source: Population Census Reports CBS

Table 4.6: Sex Ratio for 1979, 1989 and 1999, Kwale District

Age Group	1979	1989	1999
0 - 5	98	100	101
10 - 14	110	77	104
15 - 19	93	91	91
20 - 54	120	101	92
65 - 69	131	119	105

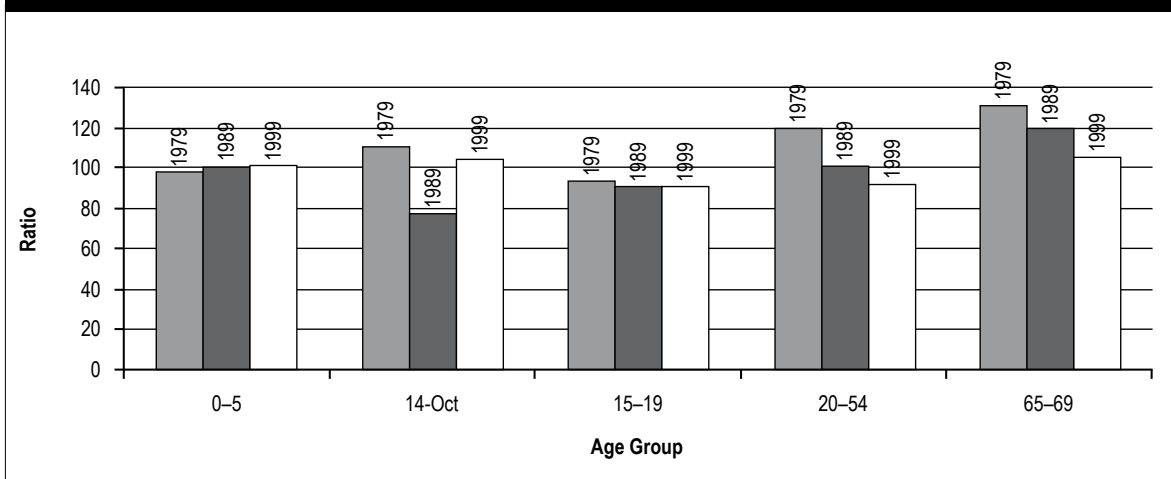
Source: Derived from Population Census Reports 1979, 1989 and 1999

Graph 4.1: Population Structure: Age and Sex Pyramid, 1999, Kwale District



Source: Derived from Population Census Report 1999

Graph 4.2: Inter-Censual Sex Ratio



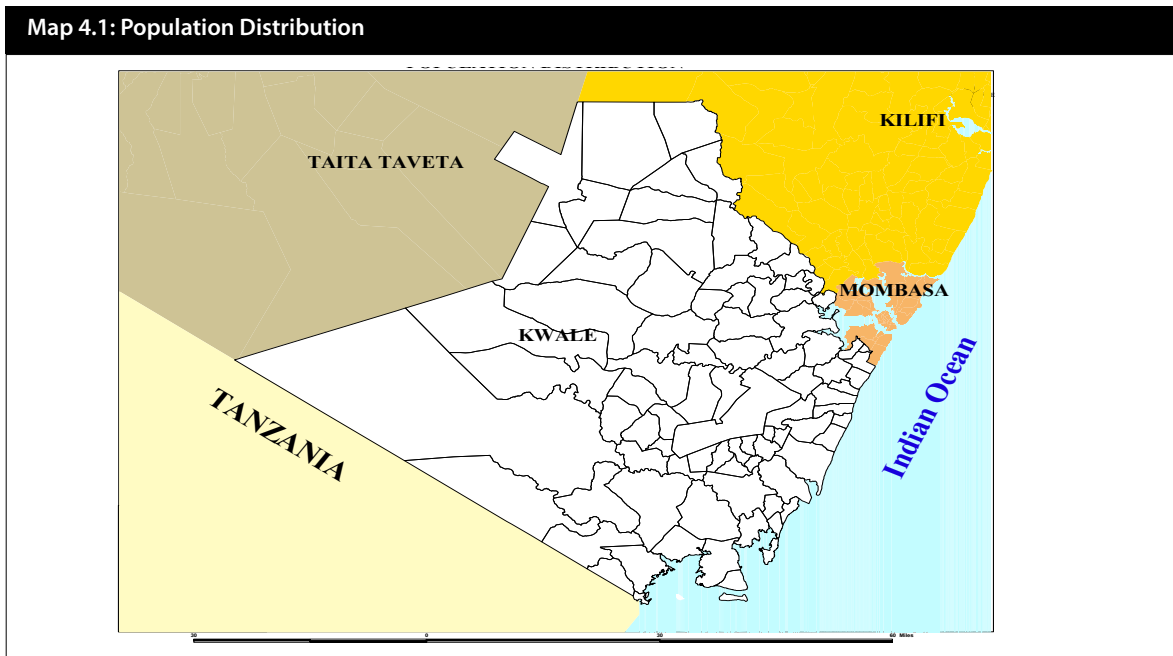
Source: Derived from Population Census Reports 1979, 1989 and 1999

4.4 POPULATION DISTRIBUTION AND DENSITIES

In the Mombasa Mainland South and Kwale District Region, 70 per cent of the population occupies 52 per cent of the total area. This population is concentrated between the coastal strip and the coastal plateau. This is the area with good, reliable rainfall and moderately fertile soils. Densities are much higher along the coastal strip and the areas with good agricultural land.

4.4.1 Population Distribution

Population distribution in the region is quite uneven. Nearly half of the population of the region is concentrated along the coastal belt and some 20 kilometers interior of the Mombasa Lunga-lunga Road. In the interior of the region, population tends to concentrate along transport lines, i.e. Mombasa-Nairobi Road, Mariakani-Kinango-Lunga-lunga Road and Samburu-Kinango-Lunga-lunga Road. Administratively, the locations with highest population concentration are Likoni, Diani, Dzombo and Mwereni and Mtongwe with 59,372, 50,487, 30,108, 26,704 and 21,181 persons, respectively. Diani, Dzombo and Mwereni are in Msambweni Division, while Likoni and Mtongwe are in Likoni Division. Seventy per cent of the region's population occupies 52 per cent of total land area. Population is concentrated between the Coastal Uplands, the Foot Plateau and Coastal Strip. This is because of the following attributes that characterize the popular settlement areas in question: Good reliable rainfall, moderately fertile soils, accessibility, due to relatively good road network, and employment opportunities.



Source: Physical Planning Department, 2004

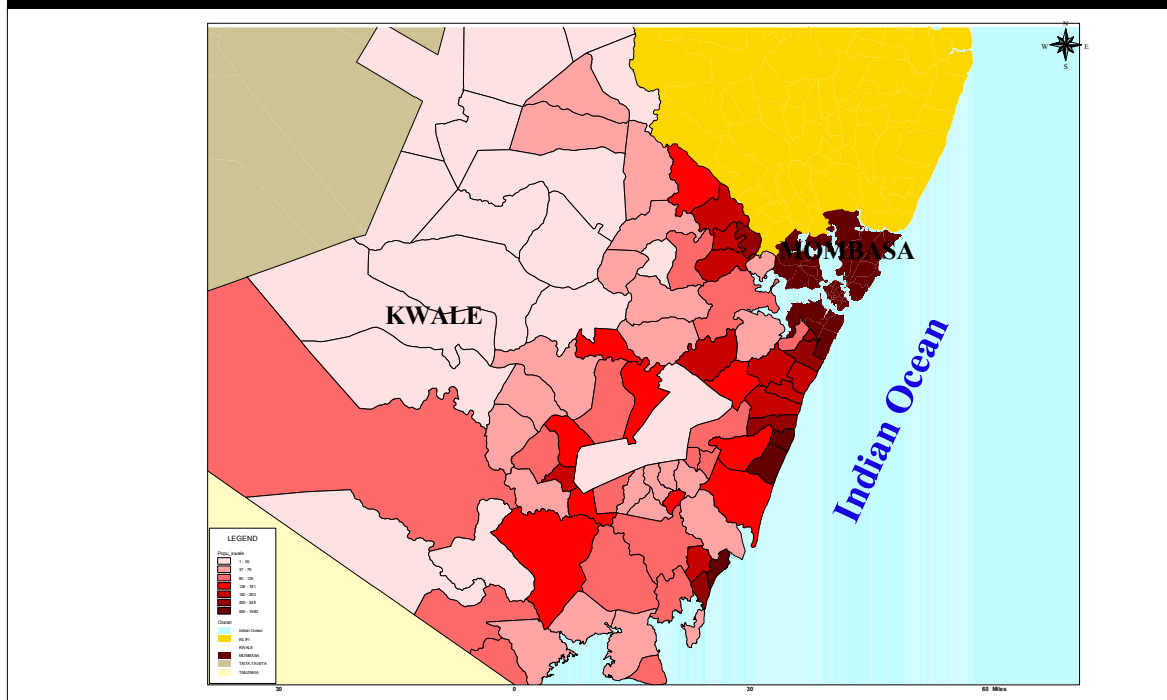
4.4.2 Population Densities

In 1979 the population density of Kwale District was 34 and that of Likoni was 862 per square kilometre. It increased to 46 and 1,051 persons per square kilometre in 1989, respectively. In 1999 the densities of the region were 60 for Kwale District and 1850 for Likoni. Table 4.7 shows the intercensal densities per division.

The locations with lowest densities are Vingurungani, Taru and Mackinnon Road, all in Samburu Division with a density of 15 persons per square kilometre each, save for Mackinnon Road, with 18 persons. Mwereni in Msambweni Division had the lowest density of 15 persons.

The divisions with highest densities are Likoni with 1,850 persons per square kilometre, Matuga with 199 and Kubo with 104. The average population density for the region is 71 persons per square kilometre. Map 4.2 gives the overall picture of the region in terms of densities.

Map 4.2: Population Densities



Source: Physical Planning Department, 2004

Table 4.7: Population Densities per Division

Administration Area	Area Sq Km	1989 Total Population	1989 House Holds	1989 Density	1999 Total Population	1999 House Holds	1999 Density
Kinango	1,829.1	126,222	19,726	32	72,027	11,857	39
Samburu	2,174.8				91,011	14,020	42
Matuga	364.4	60,193	11,010	168	72,377	14,425	199
Kubo	470.4	39,238	6,434	57	48,769	8,620	104
Msambweni	3,235.3	157,400	30,272	48	211,814	43,622	65
Total Kwale	8,295.3	383,053	67,442	46	49,6133	92,594	60
Likoni	51.3	49,909	20,434	1,050	94,883	29,673	1,850

Source: Derived from Population census Reports 1989 and 1999

4.4.3 Rural and Urban Population

There are seven urban centers in the region, namely Likoni, Ukunda, Msambweni, Vanga, Kinango, Lunga-lunga and Kwale. In 1979, 20.1 per cent of the regions population was urban. This increased to 26 per cent in 1989 and in 1999 it was 31.8 per cent. National figures for urban population were 15, 18 and 19 per cent in 1979, 1989 and 1999, respectively. Likoni Division influences this high urbanization rate, due to its urban nature. Urban population of Kwale District alone in 1999 was 18.8 per cent, which compares well with the national figure. Table 4.8 gives the rural and urban population while Table 4.9 shows the urban population of the various centers as per the census of 1979, 1989 and 1999. The above scenario is clearly depicted by Graph 4.3.

Between 1989 and 1999, the population of Likoni almost doubled. Diani had an estimated population of 42,517 persons in 1999 up from 25,917 persons in 1989. This is a marked increase that has led to some section of the urban centre being unplanned and lacking basic services. The rapid growth of Diani is due to the tourism industry. People move into the centre to take up employment in the tourist-related establishments and other commercial activities in the centre.

4.5 POPULATION DYNAMICS

Seven variables are discussed under the population dynamics. These are growth rate, fertility, mortality, morbidity, migration, dependency ratio, and labour force.

Table 4.8: Urban Population 1979, 1989 and 1999

Year	1979	1989	1999
Urban	66,170	112,714	187,962
Rural	262,377	320,248	403,054
Total	328,547	432,962	591,016

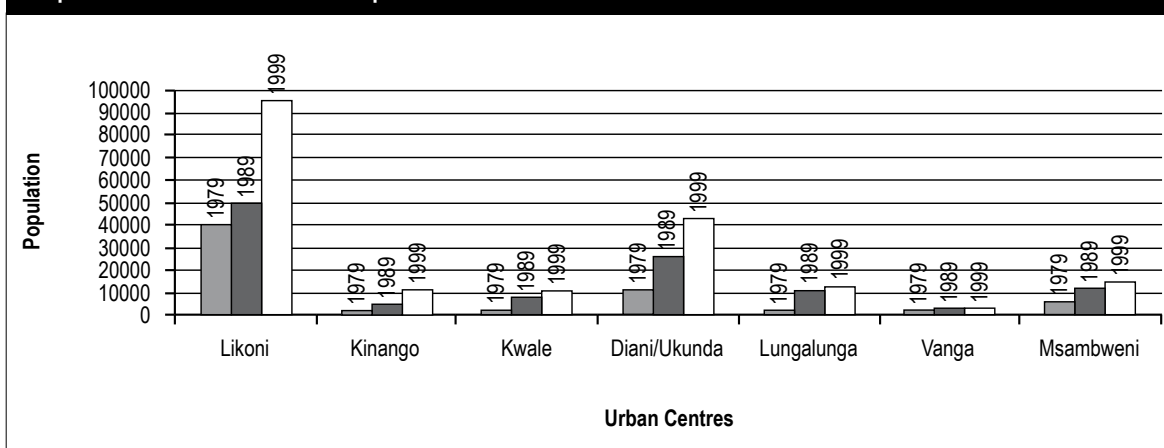
Source: Derived from Population census Reports 1979, 1989 and 1999

Table 4.9: Inter-Censal Population of Urban Centers of the Region

CENTRE	1979	1989	1999
Likoni	40,184	49,909	94,883
Kinango	1,691	5,061	11,096
Kwale	2,200	7,925	10,142
Diani/Ukunda	11,365	25,917	42,517
Lungalunga	1,671	10,135	12,098
Vanga	1,870	2,649	2,968
Msambweni	6,117	11,118	14,258
Mackinnon Road	1,072	-	-
Total	66,170	112,714	187,962

Source: Derived from Population census Reports 1979, 1989 and 1999

Graph 4.3: Inter-Censal Urban Population



Source: Derived from Population Census Reports 1979, 1989 and 1999

4.5.1 Growth Rate

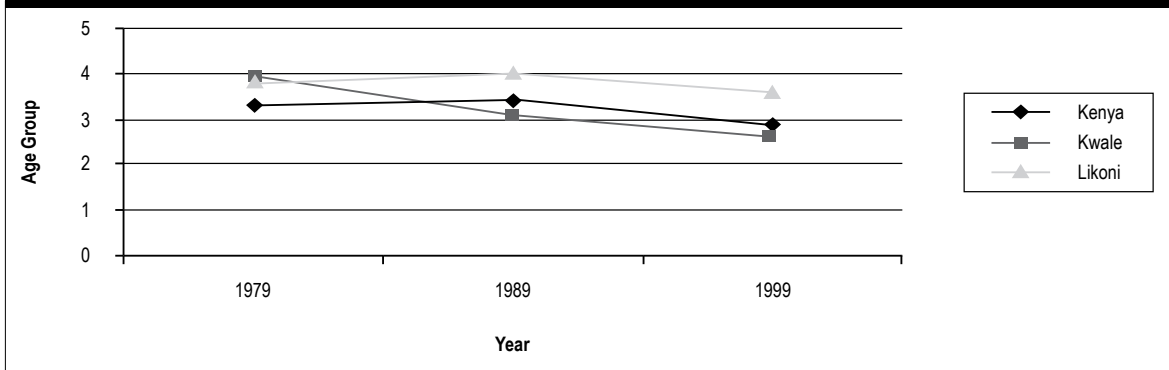
Nationally, there has been a decline in the inter-censal growth rate of 3.4 and 2.9 per cent in 1989 and 1999, respectively. The Kwale District growth rate was 2.6 in 1999 while that of Likoni Division was 3.6 per cent. Though the rates are relatively low, such growth rates result in increasing demands on all types of resources required to meet the needs of the growing population for basic services, in terms of food, health, education and shelter.

Table 4.10: Growth Rates (comparative per 1000 people)

	1999	1989	1979
Kenya	2.9	3.4	3.3
Kwale	2.6	3.11	3.92
Likoni	3.6	4.0	3.8

Source: Population Census Reports 1979, 1989 and 1999

Graph 4.4: Growth Rate Trends



Source: Derived from Population census Reports 1979, 1989 and 1999

Growth rate trends (Graph 4.4) of the region indicate decline in growth rates. This trend should be encouraged to continue to ensure that whatever plans the Government puts in place in the region are not watered down.

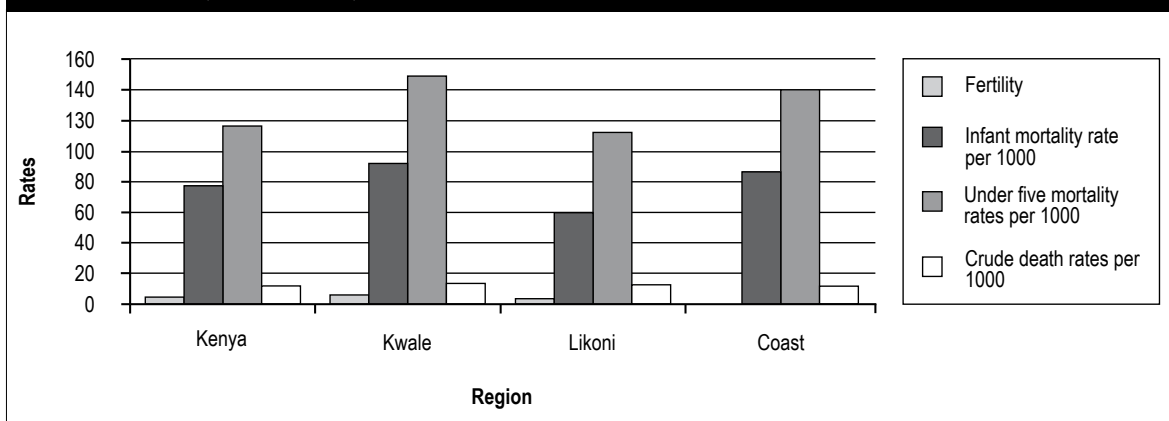
4.5.2 Fertility Rate

One of the factors that determine demographic change, i.e. rate of population growth, is fertility rate. In 1999, Kenya's fertility rate was 5.0 per woman of childbearing age. The rate for Kwale District and Likoni in 1999 was 6.0 and 3.4, respectively. In order to maintain the decline in population growth rate of the region, the fertility rate of 5.0 per woman of child bearing age should be reversed downward. People of Kwale should embrace families of lower than 5.0 as is currently the case.

4.5.3 Mortality Rate

The simplest summary measure of mortality is the crude death rate. In 1999, Kenya's crude death rate per 1000 population was 11.7. The rate for Coast Province was 12.1. Kwale District has a crude death rate of 13.7 while Likoni's rate is 12.3. Kwale District had the highest figure in the Province. Looking at age specific death rates, infant mortality per 1000 live births was 91.5 for Kwale District and 59.3 for

Graph 4.5: Fertility and Mortality Rates for Kwale District and Likoni Division



Source: CBS Datasheet on Population and Development Indicators from the 1999 Kenya Population and Housing Census

Table 4.11: Comparative Fertility and Mortality Rates in Likoni and Kwale Districts per 1000 people

	Fertility	Infant mortality rate per 1000	Under five Mortality Rates Per 1000	Crude death rates Per 1000
Kenya	5.0	77.3	116	11.7
Kwale	6.0	91.5	149	13.7
Likoni	3.4	59.3	112	12.3
Coast	4.8	86.2	139	12.1

Source: Population Census Report, 1999

Likoni Division. Kenya infant mortality rate is 77.3 while that of Coast province is 86.2. Kwale district again has the highest rate, compared to the other districts in the province.

On the under age-five mortality rates per 1000 live births, Kwale and Likoni have 149 and 112, respectively. The rate for Kwale is high above the national rate of 116 and 139 for Coast Province.

Evidence suggests that mortality during the first year of life tends to be higher than at any other single year. It has also been established that there is a strong association between a high infant mortality rate and poor health conditions, particularly those relating to general hygiene, sanitation and malnourishment. Table 4.11 shows a comparison of fertility and mortality rates per 1000 people at the national, provincially and local levels. These two aspects are clearly shown by Graph 4.5 below. Table 4.12 shows the diseases by rank that cause death in the region. The first five diseases that cause death in Kwale district are malaria, respiratory diseases, skin diseases, diarrhoea, and pneumonia.

4.5.4 Morbidity

Table 4.12 shows malaria as the leading cause of morbidity at 42 per cent. Respiratory diseases follow, accounting for 20 per cent of deaths. Others are skin diseases 7 per cent, and diarrhoea 4 per cent. Major causes of morbidity are poor health conditions, poor sanitation, malnourishment, and harmful cultural believes.

4.5.5 Migration

In 1999, Kwale District had an out-migration of 1% and 0.2% for the male and female population, respectively. Likoni Division has in migration of 25.4% for male and 18.1% for female. Generally, Coast Province has a net in migration of 6.3% for male and 4.7% for female populations. While people were moving out of Kwale District, Likoni Division in Mombasa District was receiving some of this outflow. This is because Likoni still has land available for people to put up residential restructures. It also has cheap accommodation, compared to Changamwe, Kisauni and the Island. It is therefore very important that Likoni should be prepared in terms of increase in provision of goods and services to cater for both natural increase and in-migration population. Due to its big population, Likoni attracts businesses and therefore has employment opportunities.

4.5.6 Dependency Ratio

In 1979 out of the total population of 288,363 of Kwale District, 140,929 were dependants. This was 48 per cent out of that total population. The dependency ratio increased to 51percent in 1989, where out of the total population of 383,053, 195,085 were dependants. The situation fell in 1999 to 49 per cent where out of the total population of 496,133 persons, 244,003 were dependants. The trend is that dependency is increasing as portrayed in Table 4.15. This is not a desirable situation in the region. Measures should be put in place to create employment to reduce this high dependency.

4.5.7 Labour Force

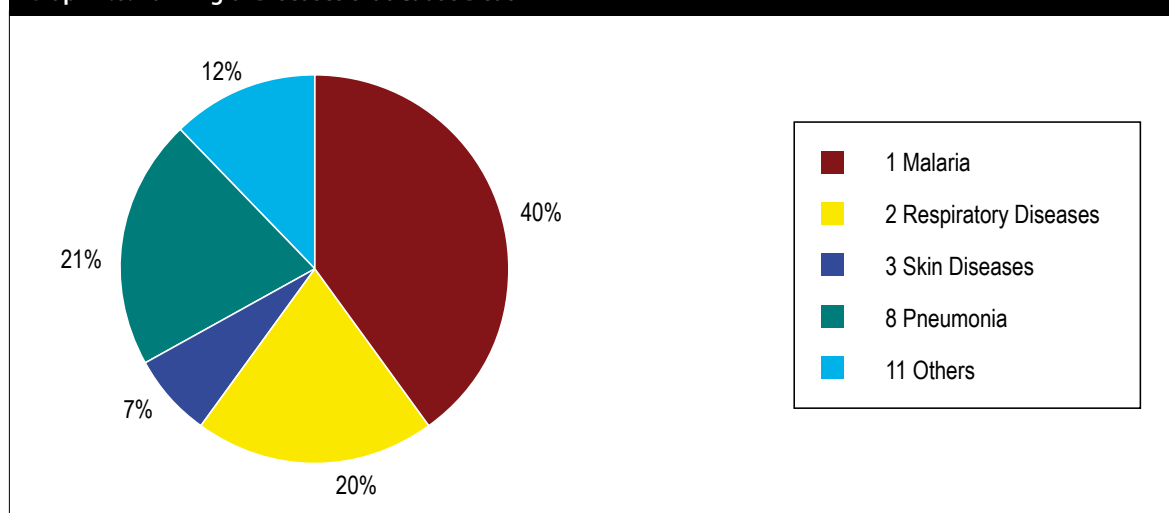
In 1979 Kwale District had 147,042 (50 per cent) of the total population of 288,363 as its labour force. In 1989, the active population was 187,792 (49 per cent) out of 383,053 persons. In 1999, labour force increased to 251,114 (51 per cent) out of total population of 496,133 of the district.

Table 4.12: Diseases Ranking that cause death – Kwale District

Rank	Disease	% of death
1	Malaria	42
2	Respiratory Diseases	20
3	Skin diseases	7
4	Diarrhoea	4
5	Intestinal worms	4
6	Anaemia	3
7	Urinary Track infections	3
8	Pneumonia	21
9	Accidents	1
10	Eye infections	1
11	Others	12

Source: Ministry of Health - Health Information Service Data, 1988

Graph 4.6: Ranking of Diseases that Cause Death



Source: Ministry of Health — Health Information Service Data, 1988

Table 4.13: Rates of Reported Morbidity in Kwale (incidence per 1000) 1981-1988

Disease	1981	1982	1985	1986	1987	1988
Malaria	X	449	480	463	466	350
Respiratory Diseases	224	254	234	215	244	354
Skin Diseases	98	119	139	133	146	100
Intestinal Worms	64	67	125	64	60	40
Diarrhoeal Diseases	75	75	69	49	60	40
Bilharzia	39	4	39	30	36	30
Anaemia	30	32	50	36	40	28
Urinary Track Infections	-	-	37	33	30	26
Eye Infections	45	45	26	37	26	19
Joint Disorders	16	26	16	13	13	10
Gonorrhoea	22	3	20	16	11	12
Accidents	19	16	16	15	12	10

Source: Ministry of Health - Health Information Service Data, 1988

Out of the total labour force of 187,792 persons 75,310 (40 per cent) persons were either unemployed or economically inactive. Only 41,035 (22 per cent) persons worked for pay. What this depicts is that while the region's labour force is increasing, the number of economically active population is declining proportionately. The anticipated labour force in 2034 of about 650,000 must be engaged in one way or another if this region is to develop. Employment opportunities therefore must be created to absorb this labour force.

Table 4.14: Net Migration Patterns

	COAST	KWALE	LIKONI
Male	6.3% (IN)	1% (OUT)	25.4% (IN)
Female	4.7% (IN)	0.2% (OUT)	18.1 (IN)

Source: Derived from Population census Reports 1979, 1989 and 1999

4.6 POVERTY

The poor are defined as those who cannot meet universally recommended minimum basic requirements for human survival. The poverty line has currently been set at Kshs.41 for rural areas and kshs.88 for urban areas per day.

In Kenya 56 per cent of the population live below poverty line. Coast Province poverty incidence is 58 per cent of its total population. In the region, a total of 343,325 persons are poor. Kwale District constitutes 63 per cent of the district population i.e. 301,000 persons. Likoni has 48 per cent incidence of poverty. Thus 42,325 persons in Likoni were poor. Of the 301,000 persons who are poor in Kwale District, 264,000 are in rural areas while 37,000 are in urban areas. Msambweni Division with 41 per cent of the poor is the highest while Matuga has the lowest with 10 per cent. The rural poverty incidence in the divisions of Kwale District ranges from 41 in Matuga to 74 per cent in Samburu.

Table 4.15: Dependency Ratio Per Age Group Bracket

Year	Dependency ratio	% of age 6-13	% of age 15-19	% of age 15-45
1979	48	28	10	45
1989	42	25	9	36
1999	49	29	11	46

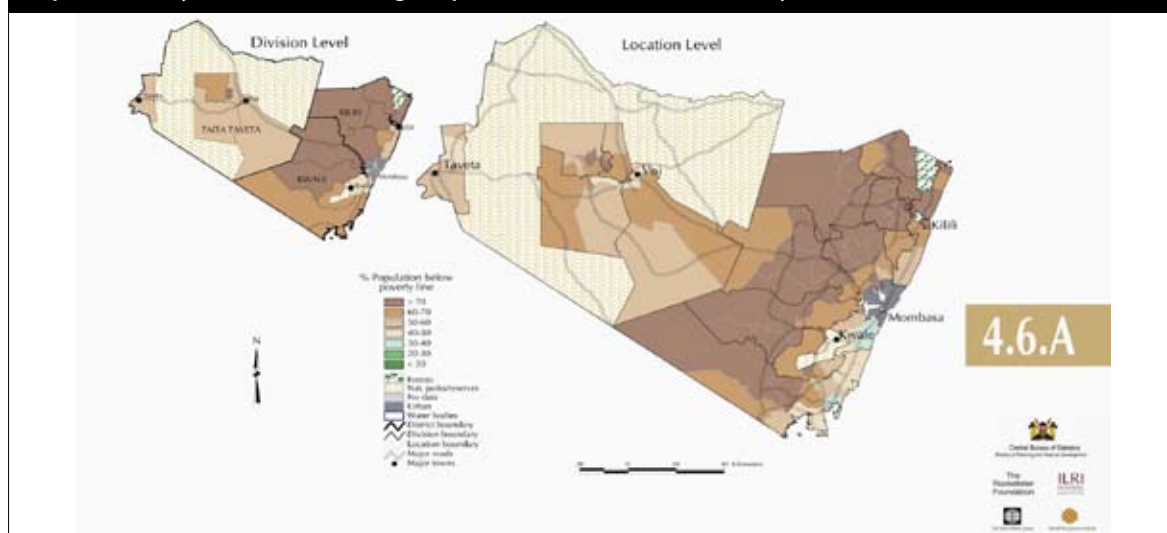
Source: Derived from Population census Reports 1979, 1989 and 1999

Table 4.16: Rural-Urban Poverty and Estimated Poor by Division

DIVISION	RURAL		URBAN		TOTAL		
	% below poverty line	Poor	% below poverty line	Poor	Population	Poor	% of district population
Kinango	71	49,277	66	1,065	71,008	50,342	16.7%
Kubo	67	32,095	-	-	47,989	32,095	10.7
Matuga	41	27,455	55	2,195	70,277	29,650	9.9
Msambweni	60	88,677	61	33,907	203,547	122,584	40.7
Samburu	74	66,241	-	-	89,031	66,241	22.0
Sub-Total	63	263,745	66	37,167	481,852	300,912	400
Likoni	-	-	48	42,325	88,506	42,325	-
Total	63	263,745	55	79,492	570,358	343,137	-

Source: Geographic Dimensions of well being in Kenya Vol.I CBS 2003 Coast brief

Map 4.3: Poverty Incidence Percentage Population below the Rural Poverty Line



Source: Geographic dimensions of well being in Kenya Vol. I CBS 2003 Coast Brief

Table 4.17: Kwale District Rural Poverty by Location

Division	Location	% of Population Below Poverty Line	Poverty Gap as % of Poverty Line	Population From 1999 Census	Estimate No. of Poor
Kinango	Kinango	68	28	9,184	6,279
	Gandini	69	27	15,277	10,566
	Vingurungani	70	27	10,564	7,442
	Puma	71	28	12,044	8,593
	Ndavaya	73	29	13,334	9,752
	Mtaa	76	31	8,979	6,791
Kubo	Majimboni	59	22	5,899	3,509
	Mwaluvanga	66	29	2,744	1,821
	Mkongani	67	25	13,021	8,671
	Mwaluphamba	68	26	16,311	11,170
	Mangawani	69	28	7,439	5,168
	Lukore	75	32	2,575	1,927
Matuga	Tiwi	34	10	14,913	5,026
	Waa	37	12	15,234	5,704
	Ng'ombeni	38	12	15,456	5,811
	Tsimba	49	17	10,593	5,155
	Golini	53	19	5,827	3,080
	Mbuguni	55	19	4,258	2,328
Msambweni	Kingwede	40	12	8,803	3,502
	Kinondo	43	14	15,882	6,759
	Pongwe/Kidimu	46	15	12,389	5,658
	Diani	49	17	6,332	3,126
	Msambweni	53	18	1,205	642
	Vanga	59	22	8,906	5,289
	Mivumoni	60	23	8,480	5,049
	Kikoneni	61	23	14,333	8,756
	Lungalunga	66	25	15,276	10,015
	Mwereni	72	29	26,384	19,057
Dzombo	73	30	29,593	21,506	
Samburu	Taru	66	26	6,646	4,365
	Kasemeni	68	28	17,633	12,030
	Mackinnon Rd	69	29	6,520	4,481
	Makamini	71	28	10,323	7,336
	Samburu	79	33	14,106	11,089
	Chengoni	80	36	8,999	7,212
	Mwavumbo	81	38	12,939	10,487
	Mwatate	82	38	11,865	9,734

Source: Geographic Dimensions of Well Being In Kenya Vol. I CBS 2003 Coast Brief

4.7 SOCIO-CULTURAL VALUES AND THEIR INFLUENCE ON DEVELOPMENT

4.7.1 Historical Background of Ethnic Groups of Kwale

The indigenous ethnic groups of Kwale are the Digo, Duruma (Mijikenda) and the Shirazi (Swahili). The immigrant ethnic groups in the region are the Kamba, Kikuyu, Maasai and Luo. Amongst the Bantu, the Mijikenda came from Shingwaya to settle along the Coast and other adjacent areas some 600 years ago. In particular the Digo settled along the Coastline and the Duruma on the higher drier areas of Kwale. Initially the Digo settled at Kaya Kwale near Kwale town until the slave trade was abolished and streamed to the lower Coastline areas of Kwale. The other ethnic groups came to Kwale after independence as settlers in settlement schemes.

4.7.2 Ethnic Composition

Kwale District is predominantly settled by the Mijikenda (85 per cent), of whom the Digo and Duruma are numerically the majority. The Digo constitute 60 per cent, while the Duruma are 25 per cent. The Digo are associated with the coastal strip and the southern parts of Kwale and are mainly crop farmers. The Duruma inhabit the hinterland and are primarily cattle keepers. Other ethnic groups in order of population size are Kamba, Luo, Taita, Luhya, Swahili (Shirazi) and non-Africans. Table 4.18 shows the ethnic groups of the region and their percentage which are also summarized in Graph 4.7.

4.7.3 Occupation, Lifestyles and Religion

a) Digo

Due to the areas the Digo occupy in the region, their mainstream economic activities are subsistence farming and fishing. They grow cassava, millet, maize, beans and commercial cash crops such as fruits, coconut, bixa cashew nuts and sugar cane. The Digo also work in tourist related industry. They are predominantly Muslims. Fishing is done by men and farming by both sexes. Their staple food is *ugali*. Long ago the Digo used to believe and practice witchcraft but this practice is fast fading away. Men are the decision makers.

b) Duruma

The main pre-occupation of the Duruma is livestock rearing. They occupy the largest part (60%) of the region that is ecologically dry. Apart from livestock keeping, the Duruma are also subsistence farmers of maize, millet, cassava, cowpeas and other drought-resistant crops. Their staple food crop is maize and *ugali*. They subscribe to both Islam and Christianity, but Christians are the majority. Long ago, majority used to practice witchcraft. Medicine men are very important practitioners in the community. Women do domestic chores and livestock herding duties are shared amongst both the sexes. Men are the decision makers.

c) Shirazi (Wavumba)

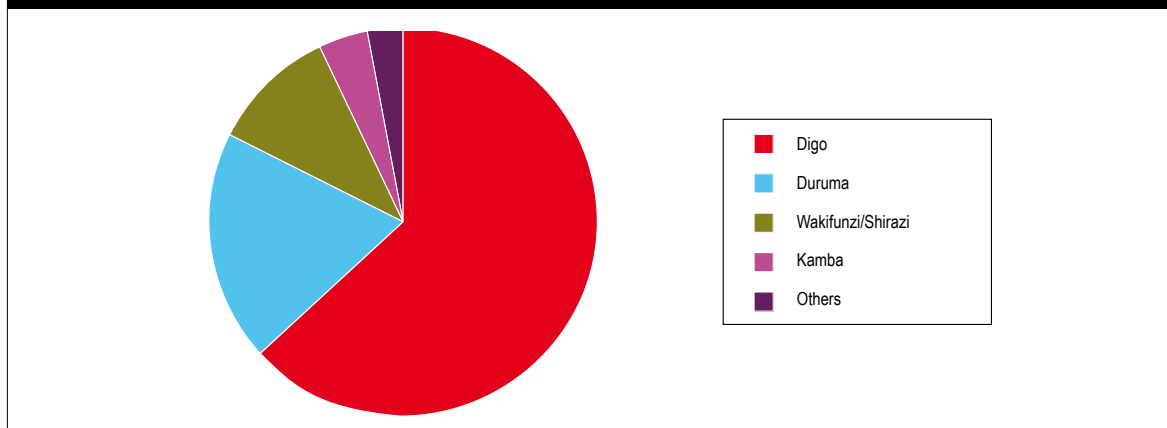
The Shirazi or Wavumba are found mostly along the coastal line in Shimoni, Vanga, Gazi, Bodo and Funzi and Wasini Islands. The mainstay economic activity and occupation is fishing and little substance farming. Their staple food is *ugali*. They are predominantly Muslim although some

Table 4.18: Distribution and Composition of the Main Tribes

Tribes	Percentage	Areas Settled
Digo	60%	Lower region of Kwale i.e. Kwale, Shimba Hills, Msambweni, Kikoneni, Lunga-lunga, Diani etc.
Duruma	25%	Upper region of Kwale i.e. Samburu and Kinango Divisions etc.
Wakifunzi/Shirazi	10%	Lower region coastline i.e. Vanga, Shimoni, Wasini, Island, Funzi Island, Lunga-lunga
Kamba	3%	Upper region and lower region i.e. Shimba hills, Kinango, Msambweni, etc. Lunga-lunga
Maasai	1%	Upper region i.e. Samburu, Kinango
Others	1%	Dispersed all over but mostly in the lower region

Source: *Geographic Dimensions of well being in Kenya Vol. I CBS 2003 Coast Brief*

Graph 4.7: Percentages of Tribes



Source: *Geographic Dimensions of Well-being in Kenya Vol.I CBS 2003 Coast Brief*

believe witchcraft and the practice of medicine men is part of their culture. Men do fishing while women and children do the rest of the work involving small-scale farming and domestic chores.

d) Kamba and Others

The Kamba are the biggest immigrant group (10 per cent of the total population of the district). They are mostly found in Shimba Hills and Mariakani. The smaller tribes are farmers and businessmen. They grow food crops like maize, beans, and cassava, among others. They also grow cash crops such as oranges, coconuts, cashew nuts and bixa. Those engaged in business are mostly found in urban areas like Lunga-lunga, Kinango, Ukunda, and Kwale. These are more receptive to socio-economic changes that are beneficial to their lot. Inter-marriages with the local people are evident. Religion does inhibit inter-marriages. Christianity, Islam and traditional religions co-exist in harmony in the region.

4.7.4 Culture, Traditions and Customs

a) The Kaya Forests

The Digo, Duruma and Wavumba lay great importance on the magnificent forests known as Kayas that are found all over the region. These forests are a living testimony of the people's traditions and culture. The forests are remnants of the once great homes of the Mijikenda communities established more than 600 years ago. The Government has gazetted most of these Kayas as national monuments.

Presently, the local communities retreat to the forests for prayers, rituals and sacrifices. These virgin forests are extremely rich in biodiversity. They contain endemic medicinal and culturally important fauna and flora. The protection of the Kayas was deeply entrenched in the community and its integrity and sanctity was safe guarded by the council elders. Today these forests remain the only biological, cultural and historical rich ecosystem, which is an important conservation. Despite this, the forests are doomed to extinction through land allocations. With well thoughtout strategies, these Kayas can benefit the local community in many ways. This plan will explore these strategies in order for these entities to benefit the local community.

b) Polygamy

Polygamy exists in the form of polygyny. Marrying more than one wife used to be taken as a sign of wealth and prestige. Because of hard economic times, the majority of those practicing polygamy have abandoned their responsibilities, leaving women and their children to fend for themselves.

c) Gender and Decision Making

The Digo and Duruma believe that women cannot make any decision. Thus men are the sole decision makers, although such decisions affect both male and female.

Table 4.19: Cultural Practices among the Digo from Kwale

Health	Education	Gender Sensitivity	Male Issues	Girl-Child Issues	Development In General
<p>Some have great confidence in traditional medicines and work of medicine men.</p> <p>A section see sickness as work of the devil and dealt with through medicine men</p> <p>Local community based mid-wife popular.</p> <p>Cultural values deny the mother to be enlightened on good natural care and vaccinations, which cause high children mortality, rate highest in Kenya.</p> <p>Some illnesses are considered as a curse.</p>	<p>Formal education is accepted</p> <p>Madrassa of the Muslim is popular.</p> <p>Some (few) School children around tourist areas prefer to work in tourist related work.</p> <p>Very few parents prefer to take boys to school than girls.</p> <p>Education is given less priority to religious needs.</p> <p>Adult education enrolment higher for women than men.</p>	<p>Women segregation is evident in some traditional functions. In the past women had little to contribute in decision making. The trend is now changing.</p> <p>Girls marry at an early age.</p> <p>Women have right to inherit property (as per Islamic law)</p>	<p>Some engage in polygamy.</p> <p>Decision making process mainly revolves around men but women do contribute.</p>	<p>No circumcision of girls.</p> <p>Some children married off at an early age (13 years)</p> <p>Child labour is evident</p> <p>Taken to formal education</p>	<p>Few local community members fear development to avoid being bewitched.</p> <p>General bitterness on the civil servants from outside.</p> <p>Individual farming.</p>

Source: District Social development Officer-Kwale, (year of publication?)

Table 4.20: Cultural Practices among the Duruma of Kwale

Health	Religion	Education	Gender	Girl-Child Issues	Male Issues	Development In General	Community Issues
Witchcraft is practiced by some members of the community. Belief in witchcraft is widespread. Many health problems are associated with witchcraft. Mid-wife done by local women. Access to nutritional progress in the community not forthcoming due to culture causing malnutrition.	Some pray to appease their traditional gods (Kayas). Christianity and Islam have majority following. Accept churches and mosques. Mainly Christians.	Education seen as for the weak. Real men are those who do manual work. Preference of children to look after cattle than go to school. Very poor girl enrolment in schools due to culture.	Women are very hard working in fending for their children. A wife does the farming Family planning is done. If a woman bears a child too soon people tease her and her husband. Women segregation evident in many community matters. Issues regarding women are addressed to the men through the most senior women. Today men and women interact freely. Women had no right to inherit property – situation is changing	Girl child labour prevalent Girls married at an early age on the decline Very poor enrolment of girls in schools due to cultural values. No girl circumcision. Girls have no say in the community.	A lot of time wasted through many ceremonies to appease the dead. The dead were/ are seen to have real powerful spirits. Men used to marry when they were adult (26 yrs) A lot of time wastage in drinking.	Conservation of Kaya trees created special zones for water catchments and also the trees attracted rains. Cattle diseases implied to be punishment to the herdsmen or women who have made love in grazing areas. Role models according to those who are modern are lacking due to fear of being be-witched. Witchcrafts, when known nowadays, are killed. The `Fuko` or Clans addressed serious and urgent issues like drought and sickness communally. A lot of time is used for looking for water amongst men and women. Kayas were and still important.	Previously problems were community issue and dealt with collectively by clans. There was no individual problem. Even land, it was more communal than individual.

Source: Physical Planning Department, 2004

Table 4.21: Cultural Practices among the Wavumba

Health	Religion	Education	Gender	Girl-Child Issues	Male Issues	Development
Some practice traditional medicine. Some practice witchcraft.	Mostly Muslim. Men adhere to the maximum of four wives according to Muslim marriage laws.	Islamic education mostly emphasized Formal education also embraced but given less priority Adult education enrolment higher for women than men.	Women do almost all domestic work.	Girls married off at early ages. No girl circumcision.	Men mostly engage in fishing. Men can marry as many wives in accordance to Islamic laws. Some men also engage in tourism employment.	Slow in accepting modern socio-economic change. Kayas were and are still important.

Source: District Social development Officer-Kwale

Table 4-22 Cultural Practices of the Kamba and Others

Health	Religion	Education	Gender	Girl-Child Issues	Male Issues	Development
<p>*Receptive to both modern and traditional medicine.</p> <p>*General nutritional health better than others.</p> <p>*HIV/AIDS cases prevalent due to urban lifestyle.</p>	<p>*Muslims and Christians in most instances.</p> <p>*Positive cultures retained and out-mode ones rejected.</p>	<p>*Enrolls to conventional education systems.</p>	<p>*Gender sensitivity more than those in other areas.</p> <p>*Women involved in cooperative societies i.e. Merry go-round.</p> <p>*Women do have some inheritance rights to property.</p>	<p>*Girls given equal opportunities.</p> <p>*Girls married at more mature ages.</p>	<p>*No special male oriented roles in life occupations.</p> <p>*Most male marry just one wife if Christians and up to four if Muslims.</p>	<p>*Involved in mainstream economic activities.</p> <p>*Those socio-economically well off seen as role models.</p> <p>*Intermarriages have diffused some cultural variables.</p>

Source: District Social development Officer-Kwale

4.7.5 Culture, Traditions and Customs that Hinder Development

For any society to prosper, the cultural values, norms and traditions should be flexible enough to accommodate and be receptive to positive socio-economic changes while retaining those good traits that allow coherence of a stable society. Tables 4.19 to 4.22 give a summary of the cultures, traditions and customs of the various ethnic groups of the region.

4.7.6 Perception to Resource Use

a) Land

The Duruma view land as a communal asset where every member of the community has the right to use it. This is where land is communally owned. The indigenous people of the region attach high sentimental value to land without deriving much gain from it. Generally, land is considered as a basic resource for livelihood without monetary value but it is evidently underutilized.

b) Forest

Forest is viewed as a source of traditional medicines. The forest grooves normally are sacred areas or shrines (Kayas). It is as a source of food and meat. Forests are places that the local people get building material and are also catchments for water sources. It has now emerged that the Kaya forests are a source of income generation as they attract tourists due to their biodiversity. They are also a source of herbal medicine, a practice that is fast catching up in Kenya

c) Water Masses

Water masses such as the sea are important for fishing. Some of water masses are sacred ritual sites e.g. Similani Caves near Likoni. These also serve as channels or medium of transport.

d) Wildlife

The community view wildlife as source of food. They also view wild animals as destructive to their crops.

4.7.7 Role of Religion in Development

From data collected through surveys, 49.3 per cent of the population is Christian and 50.6 per cent Muslim while 0.1 per cent represents other religions. The two main religions are not a hindrance to development and they both condemn such bad practices as witchcraft.

4.7.8 Social Organizations and Development

a) Family Unit

Among the people of the region a male is normally the head of the family. They influence nearly all the decisions that are made though most of the producers are women and children. However, there are families headed by women. There is the need for women to be given room to contribute in decision making, as they are part and parcel of the region's development efforts.

b) Clans Level

The Digo and the Duruma are organized in clans known as *Fuko* (single clan) and *Mafuko* (plural). The *Mafuko* have a committee of elders that make decisions. Their decisions can therefore influence resource use and marriage decisions. The clans are arbitrators and can pass disciplinary action. The clans are the organizers of cultural and cultural events.

c) Community Level

At the community level there exist no structured institutions, but opinion leaders exist. These need not be clan elders.

4.8 COMMUNITY HERITAGE

4.8.1 Artifacts

a) Musical Instruments

Music is used in times of celebrations, mourning, rituals and passing of information. The following music instruments are commonly used by the Digo and Duruma: chivoti (flute), nzumari (trumpet), bumbumbu (drum), kayamba, chingobe and marimba.

b) Clothing

The following are traditional clothing of the Digo and Duruma. They are worn when celebrating, in mourning or when performing rituals. These are hando (skirt), skins, shuka chikoi, and gushe, among others.

c) Ornaments

Traditionally, the following were the ornaments for the Digo and the Duruma: necklace, bracelets, bangles, earrings, nosepieces and beads.

Plate 4.1: Kayamba Traditional Dance of the Digo and Duruma



Source: Physical Planning Department, 2004

Table 4.23: Music and dance of the Digo and Duruma

Dance	Purpose	Tribe
Chiringongo	Mourning	Duruma
Zembe	Healing	Duruma/Digo
Kayamba	Healing	Duruma/Digo
Gonda	Entertainment, healing	Duruma/Digo
Sengenya	Entertainment	Duruma/Digo
Chakacha	Entertainment, Initiation	Digo
Marimba	Entertainment	Digo
Goma	Communication	Duruma/Digo
Mbiru	Communication	Duruma/Digo

Source: Physical Planning Department, 2004

d) Utensils

Traditionally, the following were the utensils in use: wooden mvule plate, chinu and mutsi (mortar and pestle), nyungu (clay pot), Mbuzi (grater), chifidzo (mixer), and the phazi (big spoon).

e) Music and dance

Music and dance is carried out in times of celebrations, passing of rites, healing, initiation, communication, and education.

f) Farm Implements

The local people have small hoes and, panga as their farm implements. People used to organize themselves in groups to farm (mwerya) at each others farm's in turns.

g) Weapons

The Digo, Duruma and Wavumba/Shirazi have bows and arrows, spear, shield and walking sticks as weapons they use against enemies.



Source: Physical Planning Department, 2004

4.8.2 Monuments and Sites

a) Monuments

The region has many monuments and some are protected by the National Museums of Kenya. Apart from being a historical heritage, these monuments can be tourist attractions. The monuments include fertility caves such as Kiotyo near Kaya Waa, Shimoni Slave Cave, Galu 14th Century wall enclosure built by the Portuguese, Madago Mosque of the 14th Century at Kinondo, Similani caves at Ng'ombeni and Lwayo la Mungu (foot print on a rock at Lunga-lunga (God's footprint), Maji Moto (hot springs) at Shimba Hills and Congo Mosque at Diani. All these sites inspire great attachment to the local people as some are used for performing rituals and are therefore dearly conserved and protected. There is need to document all these sites in the region for purposes of historical heritage as well as promoting them for tourism. This will create employment opportunities and income-generating activities for the local community.

b) Kayas

The importance of *Kayas* to the local people has already been discussed elsewhere. The known *Kayas* are Kaya Shonda, Kaya Kiteje, Kaya Ng'ombeni, Kaya Waa, Kaya Tiwi, Kaya Kinondo, Kaya Diani, Kaya Lunguma, Kaya Teleza, Kaya Miongani, Kaya Ganzoni, Kaya Fungo, Kaya Sega and Kaya Bombo, among others. Apart from being significant in portraying the customs and traditions of the Digo and Duruma *Kayas* can also be exploited for tourism purposes among other uses.

Plate 4.3: Shimoni Slave Cave



Source: Physical Planning Department, 2004

4.9 EMERGING PLANNING ISSUES

4.9.1 Population Size and Composition

At 2.6 per cent for Kwale and 3.6 per cent for Likoni, the region has a high rate of population growth. This is a challenge for proper and effective exploitation of resources in the region. The male-female ratio of 94:100 in Kwale District means there are more women than men in the district.

4.9.2 Population Structure

A youthful population below 20 years account for 57 per cent of the labour force. This is a school-going population.

4.9.3 Population Distribution and Densities

There is uneven population distribution. Some area such as Likoni, Diani, Dzombo and Mwereni has a high population. This explains high population densities in Likoni, Matuga and Kubo Divisions.

4.9.4 Rural-Urban Migration

Likoni and Diani experience rural urban migration.

4.9.5 Population Dynamics

- Reducing population growth rate for Kwale District 2.6 per cent;
- High fertility rate of 6.0 for Kwale District a pointer for improved health services;
- High mortality rate crude death rate 13.7 and infant mortality rate 91.5 per 1000 population;
- Malaria and respiratory diseases account for 62% mortality;
- Kwale District experiencing out-migration of 1% for males and 0.2 for females;
- Likoni receiving immigrants;
- High dependence ratio 49%; and
- High labour force that is not producing.

4.9.6 Poverty

There is a high incidence of poverty in the region which is more pronounced in drier areas such as Kinango and Samburu.

4.9.7 Socio-Cultural Values

- Digo and Duruma account for 85% of the total population;
- Some of the socio-cultural values of Digo and Duruma hinder development;
- Witchcraft is a hindrance to development;
- Gender segregation in decision-making;
- Land perceived as a communal asset but not economically utilized;
- The community has not exploited its cultural heritage for economic gain;
- Subsistence farming common to all indigenous ethnic groups;
- Inter marriages affected by different religions;
- Some local people practice polygamy;
- Women and children provide most of the labour force in farms;
- Local community waste a lot of time in celebrations and idling;
- Women are allowed to inherit land; and
- Cultural tourism.

4.9.8 Socio-Cultural Factors

- Population growth rate likely to continue declining;
- Sex ratio:
 - 0-5 years will increase
 - 10-24 years will decline
 - 15-19 years will remain constant
 - 50-54 years will decline
 - 65-69 years will decline
 - 69+ remains constant;
- Rural-urban migration increase;
- Fertility rate to remain constant (6 children per woman);
- Mortality rate to remain constant (91.5 per 1000 live births);
- Dependence ratio to remain constant;
- Poverty levels will increase; and
- Morbidity levels will remain constant.

4.10 OPPORTUNITIES

- Availability of labour force;
- Unexploited cultural heritage;
- Availability of unexploited resources; and
- Cultural tourism.

Table 4.24: Projections of Future Socio-Cultural & Demographic Aspects

Component	Aspects	Specific Issues	Present Situation	Intervention	Desired Future Scenario	Other Remarks
Socio-Culture	Gender Imbalance	Low female participation in decision making.	5% Women in decision making positions	Affirmative action to increase female participation.	Increase female participation to 50%	
		Low enrolment of girl child in education.	40% Girls enrolment	Encourage girl child education. Reduce discriminative practices.	Increase girl child enrolment to 50%	
	Child Labour	High prevalence of child labour.	37% Of total child pop.	Sensitization and advocacy on child rights and retention of children in school. Legal sanctions on child abuse.	Reduce incidence by 50%	Children aged 5-17
		Time & resources wasted in non productive activities i.E. Dances & rituals.	30% Of time wasted	Sensitization and advocacy on need to spend more time and resources on productive activities.	Increased productivity	
	Retrogressive Cultural practices	Witchcraft beliefs.	60% Of population	Sensitization and advocacy on need to spend more time and resources on productive activities.	Nil participation in witch craft	
	Decline in Morals	Drugs, prostitution, beach operators.	5% Of coastline population	Enhanced tourist policing and strengthen family values and morals through religion.	Reduce incidence by 50%	Prevalent in diani & likoni

Component	Aspects	Specific Issues	Present Situation	Intervention	Future Scenario	Comments
Demographic	Dependency Ratio	High Dependence	51%	Family planning. Delayed age at marriage.	Reduced dependence at 40%.	
	Labour Force	High Unemployment	40%	Improved formal education & skills. Proper exploitation of resources.	5% Reduction.	
	Poverty	High Absolute Poverty & Hunger	68%	Revitalizing the agricultural & livestock sector. Encourage micro & small enterprises. Promote agro based industries, mineral exploitation. Encourage community sanctuaries. Promote tourism to benefit the locals.	50% Reduction in poverty.	Emphasis on Kinango and Samburu and parts of Lunga-lunga Divisions.
	Migration	Presence of Out Migration	1%- Men 0.2% Women	Improve infrastructure in rural centres to promote investment.		
	Morbidity & Mortality	High prevalence	13.7 (General) 91.5 per 1000 (infant mortality) 149 per 1000 (under age 5 mortality)	Promote preventive health care and improve the health infrastructure. Improved nutrition. Promote attitude change on retrogressive cultural beliefs & taboo.	66% Reduction in morbidity and mortality.	Particular reference to malaria, upper respiratory diseases and HIV/AIDS.

Problem	Causes	Objectives	Locality	Strategy	Programme	Actor	Costs (Kshs)	Time Frame	Indicators
Gender Imbalance	Traditional beliefs, Illiteracy	To eliminate gender disparity in primary & secondary education.	Likoni, Matuga, Kubo, Msambweni Lunga lunga Divisions	Promote universal primary education. Enforcement of legal provisions of child rights. Strengthen bursary funds for girl child.	Awareness creation on child rights. Free primary education. Establish gender desks at police stations. Special bursary funds for girl child.	Children's officer. Social services. Education. Provincial administration Police.		Short term	Ratio of girls to boys in school. Completion and transition rates of girls.
Child Labour	Poverty Ignorance	To eliminate all forms of child labour.	Likoni, Matuga, Msambweni Lunga lunga Divisions	Enforcement of labour laws. Enforcement of legal provisions of child rights.	Establish juvenile desks at police stations. Awareness on child rights. Awareness and strengthen the child courts.	Children's officer. Social services. Education. Provincial administration Police.		Short term	Reduced percentage of child labour.
Retrospective Cultural Beliefs	Traditional beliefs, Jealousy/malice	Eliminate all forms of retrospective cultural beliefs.	Likoni, Matuga, Kubo, Msambweni Lunga lunga Divisions	Campaign against retrogressive cultural beliefs. Promote formal and religious education.	Create awareness. Reward areas with progressive cultural beliefs.	Social development officer. Religious leaders. Opinion leaders. Provincial administration.		Long term	

Moral decay	Misuse of drugs Aping of foreign cultures Unemployment / idleness	Eliminate all forms of drug abuse and other immoral habits	Likoni, Diani/Ukunda Locations	Awareness and enforcement of law	Rehabilitation centers Eliminate source of drugs Strengthen relations with Interpol	Police Provincial Administration NGOs/CBOs	Short Term	% cases prosecuted
Poverty	Low farm productivity Lack alternative Income Sources Large Family size	Eradicate extreme poverty and hunger	Likoni, Matuga, Kubo, Msambweni Lunga Lunga Divisions	Revitalize agriculture Promote industrialization Promote tourism industry for benefit of locals Promote small enterprises	Strengthen agricultural & extension programme Invest in cottage and agro-based industries Facilitate mineral exploitation Promote culture for tourism and hinterland tourist sites	Agriculture Tourism KIE Industry Mining	Medium and long term	34 % Poverty level Production levels No. of factories Income levels No. of inland tourist sites
Maternal Health	Inadequate Ante natal services Traditional Beliefs Inadequate trained Traditional birth attendants	Reduce the High Maternal Mortality	Likoni, Matuga, Kubo, Msambweni Lunga Lunga Divisions	Promote maternal and child health services	Increase number of trained traditional birth attendants Provide more mobile and fixed antenatal centers Create awareness	Health Social Development Officer Public Health	Short Medium and long term	Reduced MMR
High dependency Ratio	High fertility Polygamy Early marriages	Reduce the crude birth rates	Likoni, Matuga, Kubo, Msambweni Lunga Lunga Divisions	Promote education at all levels Promote family planning programmes Promote social development programmes	Family planning programmes Education Social development programmes	NGO/CBO Population Social Development Officer	Long Term	Reduced dependency ratios Increased net Enrolment at all educational levels No. of polygamous unions

Source: Physical Planning Department, 2004

Economic Base

5.1 INTRODUCTION

The level of economic development in any region depends on the resource base and the quality of infrastructure, the level of technology, the capacity of the labour force, the existing policy and existing development management.

From the onset, collapsing industries, declining tourism, declining agricultural production, deteriorating infrastructure and about 63 per cent poverty levels were identified as the major challenges of the region. The Regional Physical Development Plan will examine these challenges with a view to suggesting strategies to reverse this trend by utilizing existing resources such as land, minerals, and human capital. There is need therefore to look at the level of utilization of these resources so as to confirm the underutilized potential. In this regard, therefore, the plan will attempt to answer the following questions:

- i. Are the available resources being used optimally?
- ii. If not, how much is the underutilized potential?
- iii. What are the constraining factors e.g. level of technology, quality and capacity of infrastructure, capacity of human capital and existing policy, legal and institutional environment?
- iv. What is to be done given the existing opportunities such as proximity to Mombassa city, available markets, industrial and mineral potential, among others?

It is envisaged that the plan preparation process and thereafter its implementation will provide answers to the above questions. The end result will see poverty levels, alluded to before, decline in line with the poverty reduction strategy and the Millennium Development Goals. Ultimately, it is expected that development process will take place in the region in terms of improvement of people's living standards.

Economic rejuvenation in any region will depend largely on improvements in sectors that are the drivers of the economy of that particular region. For this region, agriculture, tourism, trade, fisheries, industry and mining are the most productive sectors. These sectors account for approximately 50 per cent of Gross Domestic Product (GDP), provide 628,000 formal jobs and 3.7 million small and medium sector jobs. Agriculture alone accounts for over 62 per cent of all employment. Apart from the above the region has abundant potential for fishing and mineral production that cannot be ignored.

In line with Millenium Development Goal 1 (MDG 1), the Government has put a number of interventions to promote economic growth in the whole country (Economic Recovery Strategy 2003–2008). These include:

- Formulation of the Strategy for Revitalization of Agriculture (SRA) 2004-2014 that is expected to contribute significantly towards attaining economic recovery strategies.
- The National Food Policy to address the basic causes of malnutrition and improve food security at the household and national levels.
- The "Njaa Marufuku Kenya" strategy launched in 2005 to fasttrack increase in food production and ensure food security.

- Proposed increment in total government expenditure in the agricultural sector (strengthening agricultural research and extension, credit to farmers, revival of farmers institutions and control of crop and animal diseases) from 5.6 to almost 7 per cent from 2005-2008.

The specific objectives of the agriculture sub-sector are:

- To ensure food security in the region;
- To empower the community to move from subsistence to commercial agriculture;
- To educate the community on good agricultural practices;
- To promote value addition and better marketing of agricultural products;
- To improve infrastructure that support agriculture;
- To revitalize the sugar, rice and cotton industries;
- To promote a culture of saving and credit;
- To prompt aqua-culture;
- To promote irrigation farming; and
- To promote diversification of farming activities.

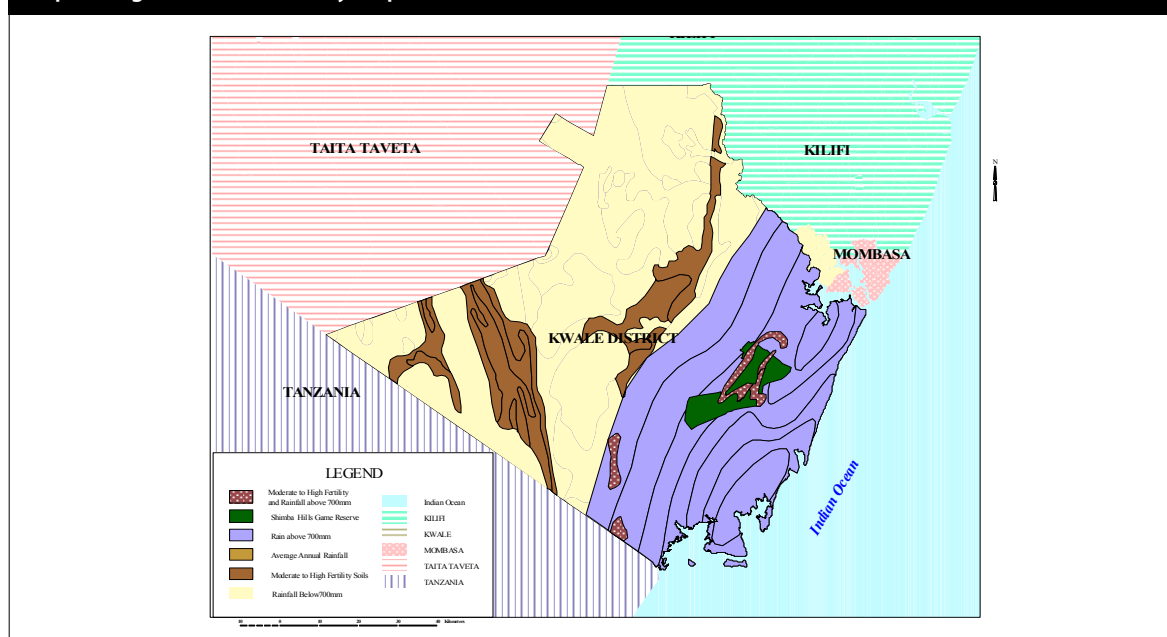
5.2 AGRICULTURE

5.2.1 Role of Agriculture in the National Economy

According to the Economic Recovery Strategy for Wealth and Employment Creation (GoK 2003), agriculture accounts for 62 per cent of employment creation in Kenya. The Poverty Reduction Strategy Paper indicates that 80 per cent of Kenya's population lives in the rural areas deriving livelihoods from crop and livestock production, fishing, and forestry. Agriculture therefore forms "the core of the Government economic recovery strategy". The thrust of this policy strategy is to empower Kenyans and provide them with democratic political space under which they can freely work hard and engage in productive activities geared at improving their standards of living.

Agriculture plays a major role in the national economic growth and development through employment generation, foreign exchange earnings and overall contribution to gross domestic product. Growth in agriculture can result in improved rural income, which has a significant and direct impact in reducing overall poverty. The sector also provides raw materials to the manufacturing sector and therefore stimulates multiplier effects in non-farm incomes and employment.

Map 5.1: Agricultural Suitability Map



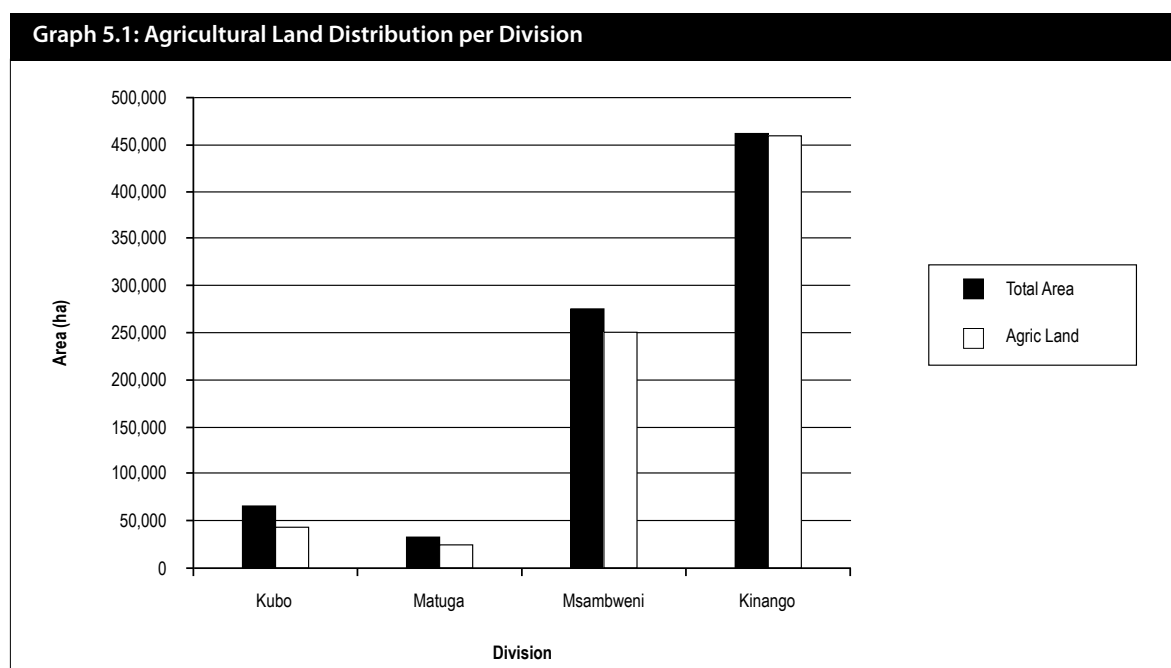
Source: Derived from Farm Management Hand Book of Kenya; 1978

5.2.2 Agricultural Potential

Agricultural potential can be explained by soil fertility and rainfall reliability, which can be expressed in agro-ecological zones. The agro-ecological zones of the region depict the crops that can do well in those zones and therefore provide a guide to farmers on what to produce, where and when. Map 5.1 and Table 5.1 indicate that there exists no high potential land in the region. They further indicate that Kinango is mainly marginal and rangeland.

Area	Kwale District	Kubo	Matuga	Msambweni	Kinango & Samburu
Total Area (ha)	831,200 100%	65,200 7.8%	32,000 3.8%	274,000 33%	460,000 55.4%
Agric. Area (ha)	797,200 96%	43,478 5.5%	24,922 3.1%	250,015 31.4%	478,785 60.0%
High Potential	None	None	None	N/A	None
Medium Potential	120,000 15.1%	33,478 4.2%	12,422 1.6%	74,100 (9.3%)	None
Marginal	147,000 18.4%	10,000 1.2%	12,500 1.6%	95,915 (12%)	28,585 3.6%
Range & Desert	530,200 66.5%	-	7,078 0.9%	93,422 (11.7%)	429,700 53.9%

Source: Kwale District Development Plan 1989-1993



Source: Kwale District Development Plan 1989-1993

5.2.3 Agro-Ecological Zones

Basically, the study region falls within the coastal lowland zones, which can further be sub-divided into five distinct agro-ecological zones.

a) Lowland Sugarcane Zone, L2

This zone is characterized by long to medium cropping season and intermediate rains, good yield potential (average 60–80 per cent of the optimum) for maize, sorghum, sweet potatoes, sunflower, soya beans, cowpeas, simsim and all vegetables. Cassava, bananas, coconuts, mangoes, bixa, paws, avocados and curcumba can be grown throughout the year.

Fair yields can also be derived (40–60 per cent) of the optimum in rice, groundnuts, sunflower and soya beans in flood plains and light soils. Sugarcane, cashew nuts, citrus and pineapples can be grown throughout the year on light soils.

Pasture and forage for animals is available in this zone. It is also suitable for growing of napier grass and other types of fodder. Generally, it is a high potential zone of Kwale District.

b) Coconut, Cassava Zone, L3

This zone is characterized by good yield potential, fair yield potential and poor yield potential (20–40 per cent of the optimum). Pasture and forage can also be grown in this zone. Suitable crops include maize, sorghum, potatoes, beans, simsim, sunflower, soya beans, vegetables, tomatoes, onions, kales, and cabbages. Coconuts, cassava, bixa, mangoes, bananas, pawpaws, avocados, sisal, pineapples, guavas, castor and citrus can be grown throughout the year.

c) Cashewnut-Cassava Zone, L4

It is marked by small-potential to good-yield potential in some areas. The zone is suitable for maize, sorghum, beans, groundnuts, sweet potatoes, soya beans, sunflower and vegetables. Cassava, cashew nuts, sisal, castor and mangoes can be grown throughout the year.

Pasture and forage can be grown although the yield is lower than in the coconut-cassava zone, L3. Generally, the zone is marked by very short-to-medium cropping season with intermediate rains.

d) Lowland Livestock Millet Zone, L5

The zone is a poor-to-fair potential zone although some areas have good yields. The zone is suitable for sorghum, millet, green grams, and cassava. Small-leaved bush land is predominant. Livestock rearing is predominant in this zone.

e) Lowland Ranching Zone, L6

This is a lowland ranching zone with bimodal rainfall. Cattle, sheep and goats are reared in this zone. Short grass mixed with small-leaved bush land is predominant. Areas with evergreen thickets are invested by tsetse flies.

5.2.4 Land Carrying Capacity

A close analysis of available land in the region together with its potentiality is necessary to ensure that it is being used to the optimum. Distribution of agricultural land potential has important implications for future population distribution and consequently the planning of human settlements. The land potential, when measured against the expected population increase, reveals the pressure of population on land.

Year	2002	2003
% Contribution	80.6	80.6

Source: Kwale District Development Plan 2003 - 2007

Crops	Kg/Yield/Ha	Kg/Yield/Ha	Kg/Yield/Ha
	Average yields in Kenya	Above Average Husbandry	Favourable or Experimental conditions
Maize	1,100 - 1,350	3,350 - 5,600	8,520 - 13,900
Sugarcane	50,000 - 110,000	160,000 - 240,000	350,000 - 400,000
Rice	5,000 - 57,000	7,800	9,300
Cotton	220 - 450	1,300 - 16,000	3,400

Source: Human Settlement in Kenya, A strategy for Urban and Rural Development, 1978

Table 5.4: Inputs and Yields of Major Crops

Crop Avg	Inputs							Yields Kg/Ha
	Improved seeds %	Nutrients			Chemicals			
		N Kg/Ha	P2 O5 Kg/Ha	K2 O Kg/Ha	Manure T/Ha	Insecticide Kg/Ha	Fungicide Kg/Ha	
First Rains								
Maize	9	1	11	-	0.01	-	-	1,762
Cowpeas	-	-	-	-	-	-	-	3,592
Bambara groundnuts	-	-	-	-	-	-	-	533
Sunflower	100	-	-	-	-	-	-	522
Cotton	100	10	17	-	-	4	-	754
Cassava	-	-	-	-	-	-	-	1,669
Second Rains								
Maize	7	-	3	-	-	1	1	3,040
Beans	-	-	-	-	-	-	-	294
Perennial Crops								
Cassava	-	-	-	-	-	-	-	2,689
Citrus	-	-	-	-	-	-	-	5,030
Cashew-nuts	-	-	-	-	-	-	-	1,745
Coconuts	-	-	-	-	-	-	-	1,590

Source: Derived from Farm Management Hand Book of Kenya, 1978

Contribution of the agricultural sector to the economy of the region shows that the region is highly dependent on this sector. Agriculture contributes about 80% of the region's economy. This implies that a well-targeted development of this sector can go along way in improving the living standards of the people of the region.

Table 5.5 shows the average farm sizes in Kwale and indicates that farm sizes have remained constant between 2002 and 2004. This means that land sub-division is minimal in this area. The area of land under both cash and food crops show that there is preference for cash crops as opposed to food crops. This implies a danger in respect of food insecurity and this can further be demonstrated by the poverty levels in the region.

The average area under ranching registered a decline between 2002 and 2003 from 45,000 to 37,200. This may imply that some ranches were sub-divided or became dormant. The ground situation actually confirms that Kenya Triangle Ltd, Mwabeje and Chenze ranches are not operational anymore. The population of people involved in livestock farming, however, remained constant at 65,634 persons.

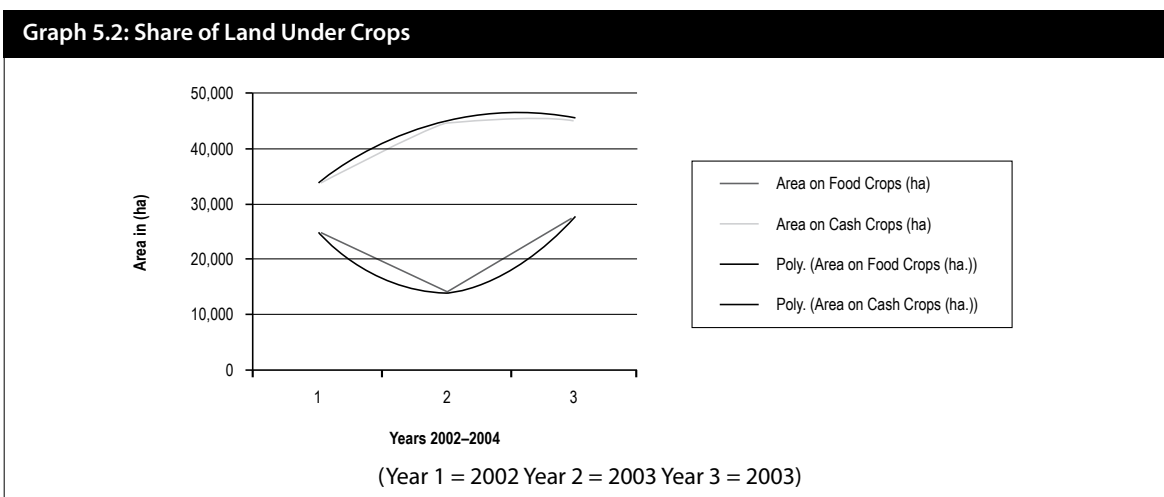
Table 5.5: Average Farm Sizes And Coverage for Major Agricultural Components in Kwale District

Item / Year	2002	2003	2004
Average Size (Ha) Small Scale	10	10	10
Large Scale	100	100	100
Area under Food Crops	25,006	14,100	27,930
Area under Cash Crops	33,940	45,009	45,396
Area under Ranching	45,000	37,200	37,200
Labour force in Agriculture	61,734 31%	94,083 40%	81,215 37%

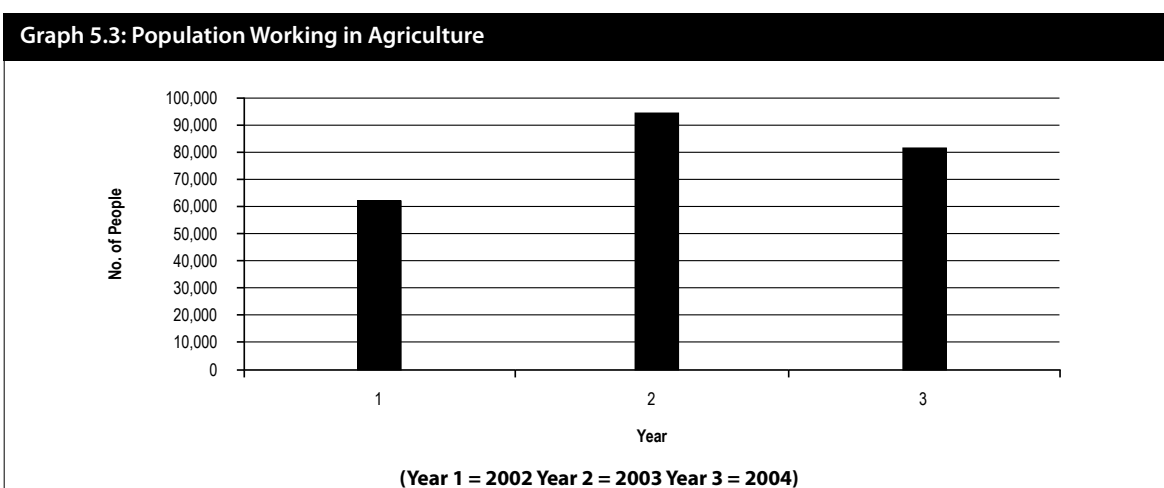
Source: CBS 2002/2004

The number of people employed in the above agricultural sub-sectors increased on average, rising by about 40% in 2003. This may imply a decline in capacity of other sectors such as industries to take in more labour force or an increase in cash crop production.

Table 5.6 shows the levels of production of food crops in Kwale per division for the years 2001 and 2002. Note that the maize production includes both the improved maize seed and the local variety.



Source: Physical Planning Department, 2004



Source: Physical Planning Department, 2004

Table 5.6: Food Crop Production by Division ('000 Tonnes)

Crop	Maize		Rice		Sorghum		Millet		Others	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
Matuga	854	448	146	89	52	8	-	0.1	569	421
Kubo	1,481	981	31	46	14	8	2	2	504	450
Msambweni	2,749	2,120	1,121	732	448	12	2	1	607	281
Kinango	4,135	2,920	20	7	109	64	3	5	187	108
Samburu	465	465	4	11	-	-	-	1	49	43
Total Cultivated land (km ²)	2001				2002					
	132				123					
Total Arable land (km ²)	120				120					

Source: District Agricultural Office, Kwale, 2003

Analysis of the same indicates that a hectare in Matuga produced 0.8 tonnes of local maize in 2001 compared to 1.08 tonnes of improved maize variety. In 2001 they utilized 614 ha of land on local maize compared to 316 ha on improved maize. There is need, therefore, to increase the area under improved maize so as to ensure more yields. It is also prudent to balance the two varieties of maize since the local one is more resistant to disease.

In Kinango and Samburu the situation is different in that the yields in tonnage per hectare were 0.8 for local maize and 0.9 for improved maize. The difference between productivity of the two varieties is negligible due to the fact that this is not a maize producing area yet the local people insist on producing it because it is a staple food.

It further shows that residents of Kwale have utilized all the arable land and some of the non-arable land, meaning that the problem of low yields can only be attributed to poor farming methods. According to the Farm Management Handbook of Kenya (1998), improved farm practices such as use of manure, fertilizers, maize production in arable land can go up to 2.7 tonnes per hectare. The above scenario indicates that even with improved farming methods and use of fertilizer, production levels of maize are still low compared to other parts of Kenya. This region therefore is not a maize producing zone and farmers need to be informed accordingly so that they direct their energy to other crops such as millet, coconuts, cassava and cashew nuts, crops that perform reasonably well under prevailing poor soil conditions. Given the situation and adverse weather conditions, the region has been a food-deficient one as evidenced by the relief food supplied since year 2003 as shown in Table 5.7.

F/Year	Food item/ No. of bags	
	Maize (90kg bags)	Beans/Green Grams (90kg bags)
2003-2004	26,243	3,969
2004-2005	35,638	2,783
2005-2006	19,000	6,300

Source: Daily Nation 6th Jan. 2006

5.2.5 Food Security

Food security is measured as a region's preparedness in terms of strategic grain reserves and the ability to buy and provide food for its population. Following this definition, the region can concentrate on cash-crop production and empower its people to buy grain from areas with excess grain. Planning in the region can therefore concentrate on production of tubers such as cassava, sweet potatoes, millet, coconuts and cashew nuts. The latter can be sold and the money, used to purchase grain. Commercial production of the said crops can also support agro-based industries.

5.2.6 Cash Crop Production

Table 5.8 indicates that coconut farming increased from 16,848 ha. to 17,073 ha. It also shows a marked decline in acreage under cassava in the years 2000 to 2003 and an increase in the year 2004. If there are

Crop	Year/ Ha				
	2000	2001	2002	2003	2004
Coconut	16,788	16,828	16,848	17,073	17,405
Cashew nut	11,726	11,732	11,732	11,739	11,746
Bixa	3,433	3,508	3,528	3,611	3,730
Citrus	4,830	4,777	4,820	5,046	5,216
Cassava	4,497	2,827	1,810	1,111	1,635

Source: District Agriculture Office, Kwale

crops that will uplift the living standards of the region's people, these will be the coconut and cashew nut. The full potential of these two crops have not been fully exploited. There is need to plant high yielding varieties coupled with good farm husbandry, not forgetting to replace the old trees for new ones.

Table 5.9 shows that coconut and cashew nut production has been on the increase between the years 2000 and 2004. This increase can be attributed to an increase in acreage. Another crop with great potential is citrus fruit which can also do better in some parts of the region.

Table 5.9: Production Levels per Cash Crop (Tonnes)					
Crop	Year/Tones				
	2000	2001	2002	2003	2004
Coconut	28,280	28,347	28,381	28,754	34,840
Cashew nut	4,690	4,692	3,519	4,108	4,698
Bixa	2,059	2,104	2,115	14,444	14,920
Citrus Fruit	47,994	48,273	38,354	41,145	41,513
Cassava	33,686	22,526	13,280	10,230	12,562

Source: District Agriculture Officer, Kwale

The five cash crops contributed substantially to the cash economy of the region as shown in Table 5.10. Although there has been a decline in the contribution of coconut and cassava due to adverse weather effects, the five cash crops can be an answer to poverty alleviation in the region. With good crop husbandry and introduction of high-yielding varieties industrialization through these crops is also possible.

To enhance the value of these cash crops, value adding is the way forward. Nearly all these crops can be processed at farm level by the farmers themselves instead of selling raw products. Small agro-based industries should, therefore, be introduced at either farm or group level to add value to the raw produce.

Table 5.10: Cash Crop Value in Kshs. '000						
Crop	Year/Kshs					
	2000	2001	2002	2003	2004	Total
Coconut	14,140	14,173	14,190	14,377	8,710	65,590
Cashew nut	4,690	4,692	2,639	3,081	5,873	20,975
Bixa	1,853	1,894	1,374	10,833	7,460	23,414
Citrus	23,996	23,736	19,177	19,262	22,132	108,303
Cassava	16,843	11,263	6,640	5,115	9,421	49,282
Total	61,522	55,758	44,020	52,668	53,596	267,564

Source: District Agriculture Office, Kwale

5.3 LIVESTOCK PRODUCTION

5.3.1 National Livestock Development Policy

The National Livestock Development Policy (NLDP) was developed in 1980 and has not been revised and thus has been rendered irrelevant following liberalization of Kenya's economy and hence, the formulation of the policy guidelines below.

In an endeavour to rehabilitate the national economy and reducing poverty, the Government has identified key concern areas for the livestock sub-sector. These are improved breeding services, animal health services, markets and inputs at affordable prices.

The key actions to achieve the above are:

- i. To develop a national strategy for sustainable and profitable livestock sector
- ii. To develop an appropriate regulatory frame for quality standards in the meat industry
- iii. To diversify the number of products including new niches
- iv. To create incentives for investments in processing and value adding particularly for export markets;
- v. To empower producers and their organizations
- vi. To develop rangeland areas so as to facilitate production of quality beef.

Livestock production is the mainstay of the Nyika Plateau which receives rainfall below 700mm. The Nyika Plateau covers about two-thirds of the planning region, making livestock production a key activity in the economy of Kwale District.

5.3.2 Contribution of Livestock Sector to the Economy

About 80 per cent of the population is dependent on crop and livestock production as the main source of income. Livestock production contributes about 10 per cent of the National Domestic Product and accounts for 30 per cent of the farm gate value of agricultural commodities. The livestock sub-sector employs and accounts for 50 per cent of the agricultural labour force. In terms of value, the livestock subsector is estimated at Kshs. 54.1 billion out of the total of 134.9 billion in the agricultural Sector (40 per cent).

5.3.3 Livestock Production in Kwale District

Table 5.11 shows the production levels of various animals in the district. It indicates a decline in beef cattle in 2002 followed by a sharp increase in 2003. This can be explained by lack of pasture resulting from drought or presence of diseases. Assuming that livestock rearing is mainly in the dry areas, which have an area of 7,576 Sq kilometres, with a carrying capacity of eight hectares per animal the area can support only 94,709 beef animals. The implication is that there is overstocking in the dry areas.

Table 5.11: Livestock Production Levels in Kwale District (Years 2001-2003)			
Animal Type	Year/No.		
	2001	2002	2003
Beef Cattle	169,076	109,286	167,746
Dairy Cattle	2,175	2,391	2,474
Sheep & Goats	183,469	231,775	164,590
Poultry	142,989	547,590	334,297
Others	11,846	7,412	5,478

Source: Ministry of Livestock Production (2003)

5.3.4 Livestock Products

Livestock products of the region range from meat, milk, hide and skins, eggs and honey. Table 5.12 indicates that an increase in beef and mutton production, implying that some animals are brought for slaughter from the other regions. The beef, mutton and chevron products have been increasing over time and indicate potential for development of a meat processing plant. The hides and skins declined in 2002 then increased in 2003. The figures indicate potential for siting of a tannery in the region.

a) Milk Production

Due to their numerical advantage, the Zebu produce the bigger percentage of the milk consumed. Table 5.13 indicates that milk production is increasing and can support a medium-size milk processing plant or a cooling plant in Kinango in order to avoid duplicating the processing plant at Mariakani and Miritini. It further shows that Msambweni and Samburu produce most of the milk in the district. The sustainability of above-noted industries, however, will depend on increased production to achieve the necessary thresholds. This can be done through improved animal husbandry.

Table 5.12: Livestock Products for the Years 2001-2003

Products	Year/ Kgs		
	2001	2002	2003
Beef (Kg)	2,833,080	4,237,100	5,510,600
Mutton	64,548	84,375	104,332.5
Chevron	143,724	167,925	284,280
Camel	63,500	74,625	85,750
Milk (Liters)	16,805,490	1,690,000	21,460,690
Eggs (Trays)	405,000	400,000	300,975
Honey (KGs)	8,871	8,311	2,777
Hides & Skins	90,737	30,005	60,076

Source: Ministry of Livestock Production, 2003

b) Poultry Production

This is the most popular enterprise in the fight against poverty because it involves production of meat and eggs. Between the years 2001 and 2003 egg production declined. A total of 405,000 eggs were produced in 2001, 400,000 and 300,975 in the years 2002 and 2003, respectively (Table 5.12).

Due to proximity to Mombasa and Diani which provide a ready market, there is a lot of room for expansion of production of broilers and layers, not forgetting indigenous chicken.

Plate 5.1 Livestock Water Point

Source: Physical Planning Department, 2004

Table 5.13: Milk Production by Division 2003

Division	Quarters/ Kgs				
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Matuga	377,595	58,100	337,680	384,750	1,684,125
Msambweni	1,390,860	2,553,300	2,559,450	830,700	7,384,310
Kubo	173,316	340,200	192,149	122,839	820,504
Samburu	2,004,030	4,037,040	2,141,100	1,080,168	9,262,338
Kinango	450,968	882,855	844,695	211,174	2,389,692
Totals	4,396,765	8,397,495	6,045,074	2,659,631	21,460,969

Source: Ministry of Livestock Production, 2003. Note: Milk prices range from 24 to 35 Kshs. per liter

c) *Apiculture*

Bee Keeping has decreased over the years. This is evidenced by the decrease in honey production. This is one activity that can create added incomes to farmers if properly harnessed.

d) *Hides and Skins*

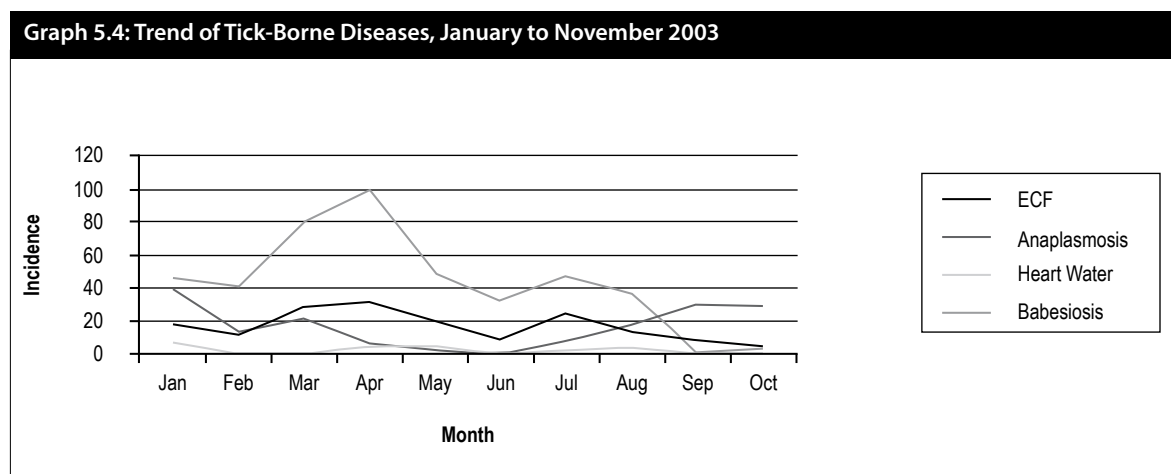
There was a decrease in the overall production as indicated by Table 5.12. In 2001 an estimated 90.7 tonnes of hides and skins were produced. The production was 30 and 60 tons in 2002 and 2003 respectively. In order to use this resource locally as raw material, the possibility of establishing a medium size tannery can be looked into. This will create employment opportunities in the district and also augment prices.

5.3.5 Animal Diseases

There are three main diseases affecting livestock in the region. These are tsetse-related diseases, helminthiasis and pneumonia. Table 5.14 shows that tsetse-related diseases and helminthiasis are the most common diseases and that increased between 2001 and 2002. Animal diseases are on the rise during the months of March to May. This is at the peak of the long rains (graph 18).

Disease	Year/No. of cases	
	2001	2002
Tsetse Related	382	479
Helminthiasis	361	535
Pneumonia	128	64
Others	77	80

Source: District Veterinary Officer's Monthly Reports, 2001 and 2002



Source: District Veterinary Officer's Monthly Reports, 2001 and 2002

5.3.6 Disease Control Methods/Interventions

Tsetse-related diseases can be controlled by use of netted zero grazed antis, traps, and synthetic parathyroid. Prophylactic and curative treatment of the animals can be carried out whereas tick-borne diseases can be controlled by use of hand spraying and dips. Table 5.15 shows that in 2002 Kinango had 14 cattle dips compared to seven in 2003. This implies that 7 dips became unoperational within that period. Livestock producing areas are Kinango, Samburu and parts of Msambweni yet Samburu appears to be poorly served with only seven dips. Management of cattle dips was handed over from the government to local committees. This led to closure of some of the dips, an indicator that the management committees lack capacity.

Table 5.15: Distribution of Dips per Division

Division	Year/ No.	
	2002 /No. of Dips	2003/ No. of Dips
Kubo	8	8
Msambweni	12	12
Kinango	14	7
Samburu	7	7
Matuga	4	4
Likoni	-	-
Total	45	38

Source: District Veterinary Officer, Kwale

Table 5.16 indicates that on average only 9% of the animals are dipped, while ideally all animals should be dipped to prevent incidence of diseases. This explains the prevalence of tsetse and tick-borne diseases. There is need therefore for intervention in terms of building capacity in dip management and awareness creation on the importance of dipping.

Table 5.16: Number of Animals Dipped

Animals	Year	
	2002	2003
Total No of Animals	343,452	334,810
No of Animals Dipped	22,413	39,310
% No Dipped	6.5	11.7

Source: District Veterinary Officer, Kwale

5.3.7 Ranching

Conflicts in the ranches due to continued mismanagement of finances and delayed land adjudication are common. However, it is important to note that there was adequate pasture and water where illegal grazers and squatter invasion took advantage to compete for those resources. The region has 15 ranches, which fall under four categories:

- i Operating group ranches 4 (3 were unincorporated)
- ii Private company ranches 4
- iii Co-operative ranch 1
- iv Directed agricultural company 2.

Table 5.17 indicates that out of 9 ranches in the region, about half have wound up. Most ranches were registered in the 1970s and there is lack of coordination between central herders and local herders. They lack facilities such as water and dips. They mainly depend on water from pans and dams, which dry up during the dry spell. The main challenges include insecure tenure, environmental degradation, squatters and overconcentration of slaughter houses at Mariakani.

5.3.8 Marketing Systems

1) Co-operatives

There are 14 registered farmers' co-operatives in the region and out of these only one is active. This is attributed to the following reasons:

1. Majority of them never took off;
2. They were started due to political reasons without felt needs;
3. Proper appraisal was not done;
4. Co-operative bank gave marketing co-operative huge loans which overburdened farmers;
5. Illiteracy among co-operative officials overburdened farmers;

Table 5.17: Operating Group Ranches

Ranch	Attributes			
	Size (Ha)	Adjudication	Membership	Status
Ndavaya	28,000	On-going	1,267	Operational
Mwavumbo	24,000	1975	3,331	Operational
Samburu South	63,566	1974	3,701	Operational
Mwereni	40,560	1972	3,126	Operational
Taru Private	20,970	Leasehold	50	Unoperational
Mackinnon Rd	10,400	Leasehold	50	Operational
Mwabeje	10,760	Leasehold	35	Unoperational
Chenze Cooperative	32,000		192	Unoperational
Kenya Triangle	81,750	Leasehold	22	Unoperational

Source: District Lands Adjudication and Settlement Officer, Kwale

6. Poor road network made transportation difficult; and
7. Liberalization made it impossible for marketing co-operatives to have monopoly.

2) Other Forms of Marketing

Other forms of marketing agricultural produce in the region include:

1. Middlemen; and
2. Groups of farmers who transport their fruits in bulk to cut transport costs.

3) Major Livestock Markets

Livestock marketing is done through auctioneering at weekly alternate market days mainly in Kinango and Mwangulu. The following are livestock markets in Kwale District.

1. Mwangulu;
2. Kinango;
3. Samburu; and
4. Mackinnon (inactive).

5.3.9 Emerging Issues

A. Crops

1. Unreliable rainfall;
2. Poor marketing systems;
3. Poor extension services;
4. Low adoption rate of modern farming techniques;
5. Low managerial skills for commercial farming;
6. Lack of credit facilities to the farmers;
7. Lack of organized market channels;
8. Sentimental attachment to maize which does not do very well in the area;
9. Collapse of cashew nut and sugarcane industries;
10. Poor management of cooperatives; and
11. Liberalization.

B. Livestock

1. High incidence of tick-borne diseases;
2. Collapsed dips;
3. Poor extension services;
4. Harsh weather conditions (drought);
5. High cost of good quality dairy cattle that are not affordable to the farmers;
6. Lack of credit facilities to the farmers;
7. Poor management of ranches;
8. Poor animal husbandry;

9. Unreliable rainfall;
10. Poor marketing system;
11. Collapse of Mariakani processing plant;
12. Poor running of cooperatives; and
13. Liberalization.

5.4 MINING ACTIVITIES

5.4.1 Mining Policy

The Government recognizes the crucial role played by the private sector in mineral resource development. In this regard, the Government policy is to encourage the private sector to invest in mineral resource development. The Government encourages private sector initiatives to attract modern technology and necessary capital for investment in the sector. The Government has embarked on formulation of a new and comprehensive mineral policy, a review of existing mining Act and a review of the fiscal policy and tax regimes applicable to minerals and mining.

According to the mining Act (Cap 306), un-extracted minerals belong to the government. Their exploitation is controlled by the Government. The Department of Mines and Geology undertakes geological surveys, geo-scientific research and regulates the mining sector. The department which is under the Ministry of Environment grants licences to miners and protectors.

5.4.2 Mining in Kwale District

The mineral potential of sedimentary rocks of Kenya at the Coast has been recognized since the turn of the last century. Silica sands of good quality for manufacture of glass are being exploited at the coast. There is greater potential for the exploitation of this deposit. Heavy minerals at the Coast like rutile, ilmenite, zircon, among others, have been associated with dune sands. A major mineral deposit of Titanium- zircon-bearing sands estimated at 3.2 billion tonnes in the region has been discovered by Tiomin Resources Inc. of Canada. Ilmenite and rutile are used to produce titanium dioxide pigment [used in manufacturer of paints, dyes plastics and paper] and titanium metal [which is used to make aircraft frame parts, spacecraft and guided-missile components, and special sports and medical equipment such as golf clubs] and in TV tubes.

Limestone from the coastal sedimentary basin is used for construction in the building industry and in the manufacturing of lime. The County Council of Kwale received Ksh 700,000 in mining revenue in 2001. Titanium can earn Government Kshs 10 billion in the next 14 years and has potential to generate employment for 500 people, of whom between 170 and 200 will be directly employed by the company. There exists mining potential that has not been economically exploited as shown in Table 5.18.

Table 5.18 : Distribution of Minerals of Economic Value

TYPE	LOCATION
Titanium	Nguluku/Maumba/ Shimba Hill
Gemstones	Kuranze
Rare Earth Elements	Mrima Hill/ Samburu
Silica Sand	Msambweni/ Ramisi/Tiwi
Zinc and Lead	Mkang'ombe
Baryte	Lunga-lunga
Coal	Maji Ya Chumvi
Sandstones	Mariakani
Limestone	Shimoni, Waa, Likoni, Majoreni
Coral	Coastline
(Oil/Gas)	Onshore & Offshore

Source: District Mines and Geology office Kwale, 2003

5.5 FORESTRY

5.5.1 Government Policy on Forestry

The Government values forests as habitat for wildlife and most important conservation areas. They form water catchments areas that are critical sources of water supply. The government aims at:

1. Increasing the forest cover;
2. Protecting indigenous tree species ;
3. Increasing acreage under plantations to meet increasing demand;
4. Employing sustainable forest management and use of forest products without depletion;
5. Bringing the total land under forests to 10 per cent because forests currently cover less than 10 per cent of the country but they contribute 95 per cent of the rural domestic energy; and
6. Fixing boundaries under forest to minimize recurrent conflicts.

5.5.2 Types of Forests

The following types of forests can be identified in the region.

- Gazetted/Kaya forests;
- Thickets;
- Mangroves; and
- Bushes and ranches.

Kwale has a rich terrestrial flora and fauna.

5.5.3 Forest Products in Kwale

Kwale District does not have commercial plantations. Major forest product sales include: -

- Mangrove poles;
- Saw milling;
- Charcoal;
- Firewood; and
- Wood curving.

Some of these activities have since been banned. Government effort to restore forest cover has seen radical changes that included total ban on exploitation of forests. Economic activities in the forest sector, therefore, are negligible although illegal charcoal burning and firewood collection continues.

5.6 FISHERIES

5.6.1 Introduction

Kenya's fishery resources are an important source of food, employment and foreign exchange. In 1999 the sector contributed 3 per cent of total crop and 2 per cent of total export earnings. It is estimated that the fisheries industry employs over 48,400 artisan fishermen and that 5,000,000 persons are engaged directly or indirectly in fish processing and trade. In Kwale, about 18,313 fishermen were involved in this sector in 2001.

5.6.2 Policy on Fisheries Development

The major policy objective is to increase fish production, marketing and processing by improving and strengthening fishery research, seed and feed production and extension series. National fish farming will also be enhanced. Fisheries infrastructure is also set to be developed. The policy concerns are management, conservation, control and utilization of fishery resources, promotion of aquaculture development to supplement fisheries resource base, management and control of fish quality and promotion of fish marketing systems, and co-management for cost effective utilization and management of the fishery resources.

The objective is to increase fish production. This will be achieved through improved marketing, scientific management of fish harvesting, and increased research, and seeding and extension services to those involved in the fishing industry.

Kwale has abundant fishery reserves along the coast. Major fish reserves include Shimoni, Vanga, Msambweni, Diani, Gazi, Mwabungo and Majoreni. The district produces fish both for local consumption and sale in markets outside the district.

5.6.3 Trends in Production

Production has been increasing and so has consumption. Table 5.19 indicates that production of fish remained almost constant between 1997 and 2000 but increased considerably between 2000 and 2001.

Table 5.19: Fish Production Trends, All Species/Landing Sites, 1997–2001

Year	Production (KGS)	Value (Ksh.)
1997	1,270,500	68,684,541
1998	1,222,362	65,914,921
1999	1,372,962	72,315,881
2000	1,244,278	88,232,302
2001	1,658,462	98,263,597

Source: District fisheries office, Kwale

5.6.4 Landing Sites in Kwale

In 2001, Twelve landing sites were identified and delineated. The sites include Mgwani, Gaze, Mwakamba, Mavuleni, Nyari, Mwanyasa, Mwaembe, Kikadini, Kongo, Mosko, Mvamashi, Trade winds and Gomeni. All of these sites are on private land. The points of accesses to the sites are, however, blocked and some fall on private land. There is need, therefore, to implement the 30 metre watermark to make those on private land accessible. Other proposed sites are Chale, Jeza beach, Vanga, Majoreni Mwandoni, and ShellyBeach.

Table 5.20 shows the amount of fish consumed and exported from the district. It indicates that fish contributes Kshs. 109 million to the economy of the region. The fishing activities however only take place along the coastline and no serious fishing has been taking place in the 200 mile exclusive economic zone. Currently only foreigners are exploiting that zone and locals need to be empowered with appropriate training and fishing gear to venture into this zone.

Table 5.20: Fish Consumption for 1999

Local Consumption		Transported elsewhere	
Weight (kg)	Value (Ksh)	Weight (kg)	Value (Ksh)
578,247.5	26,139,009	794,710	109,176,872

Source: District Fisheries Office, 2000

5.6.5 Fish Marketing

a) Introduction

The bulk of the fish landed along the Kenya coast is to a great extent consumed locally in the fishing villages by the fishermen and their families. The upcountry population prefer fresh water fish from lakes and rivers to marine fish from the coastal region of Kenya. This has restricted coastal fishermen from intensifying fishing activities to increase production.

The major fishing centres are located at Kwale and Lamu districts. The sites are far removed from the main marketing centres with population concentration. For a long time, commercially viable fish catches are sold through fish dealers who have established their own transportation and preservation facilities. During certain periods of the year, particularly the rainy seasons, road

communication to remote areas like Shimoni and Vanga are disrupted and the fishermen in these areas have no outlet for their surplus catch. During such periods fishing activities almost come to a standstill.

In order to assist the fishermen in the organization of fish marketing and distribution, formation of fishermen's cooperatives have been encouraged. Such societies have been established at Vanga and Shimoni. These organizations have ensured fair practices and reasonable returns to the fishermen for their fish landings.

The high value fish like crustacea (prawns and lobsters) and some pelagic fish like kingfish are transported by the fish dealers to the main market centres such as Mombasa, Malindi and Nairobi and are sold to the consumers at very high prices. In some of these cases the price difference from the fisherman to the consumer could be as high as 100%. Some of the valuable products such as prawns, lobsters and the tuna are exported to overseas markets. In general, the fish transported from the fishing villages to the distant markets forms a very small proportion of the total fish landings at the coast.

Plate 5.2: Fishermen Busy at Work



Source: Physical Planning Department, 2004

b) Marketing

About 50 per cent of fish is consumed while 20 per cent is sold in Mombasa. Sales are done by local fishermen, middlemen such as Kinango women's group, Kikapu dealers and fish shop owners. The remaining 30 per cent of the fish go to waste because of poor roads and lack of storage facilities. During the rainy season most of the fish go to waste because the Vanga-Lunga-lunga road is flooded, making it impassable.

In view of this, this plan advocates provision of coolers and electricity at certain strategic centers along the coast. Such points already exist in Majoreni, Mwaepe, Shimoni and Vanga and were provided by IFAAD to the local fishermen. Mwaepe and Shimoni already have electricity supply.

Mwagugu Co-operative at Vanga is the only organized group dealing in fish marketing. Self-help groups dealing in fish marketing are Msambweni, Diani, Shimoni and Kiwambale. Aqua Dom fish and shellfish, particularly squids and octopus are exported by Sea Harvest and TransAfrica Limited based in Mombasa. Octopus is also supplied from Tanzania waters via Shimoni, Vanga or the Bodo outpost during 'Kusi' (April/May to August/September) Cowrie shells are also brought in from Mafia, Pemba and Zanzibar. In the year 2002, some 64,998 pieces were collected worth Kshs 1,079,422.

5.6.6 Inland Fishing

Inland fishing has not been developed due to the influence of sea fishing. The underlying rocks could be a contributing factor to this scenario. Inland water bodies are also scarce. It is worth noting that rivers Ramisi, Mwena, Majoreni and Pemba supply shrimps to the sea. The Kikambala fish farm, Mombasa Aquarium and Rodwell are the main traders of shrimps and lobsters. These are mainly concentrated at Shimoni.

5.6.7 Other Related Activities

Related activities include sport fishing and deep sport fishing. Sport fishing is practised by groups as a sport. Fish species caught in sport fishing include black marline, sail fish, bonito, barracuda, sharks, among others, mainly for export. Deep sport fishing targets sharks, marlines and barracudas, also for export purposes.

Currently, there are only three clubs providing these sports: Diani, Shimoni Reef, and Pemba Channel. The potential for this activity has not been fully exploited and can be developed further to support sport tourism, especially in the exclusive economic zone.

5.6.8 Emerging Issues

Issues emerging from the sector are:

- Poor road conditions (Vanga, Bodo and Kibuyuni);
- Poor marketing (exploitation by middle men);
- Lack of storage facilities;
- Poor technology threatens sustainable fishing practice;
- Inaccessible landing sites;
- Trading sites on privately owned land; and
- Unreliable power supply.

5.7 TRADE AND COMMERCE

The following factors influence trade patterns in the district: Proximity to Mombasa, quality of service roads serving the market centre, security, the economic viability of the hinterland, and availability of auxiliary services such as banking.

These factors combine to influence the pattern and distribution of trade and commerce in the district.

5.7.1 Major Trading Centres

Business activities are conducted within eleven major market centres. The centres are Kwale Ukunda/ Diani, Kinango, Samburu, Likoni, Mariakani, Msambweni, Matuga, Lunga-lunga and Shimoni. The region suffers from the domineering influence of Mombasa with most business activities locating in proximity to transport corridors leading to Mombasa. Ukunda and Likoni enjoy the proximity influence and are seen to be growing faster than other centres in the region. Table 5.21 indicates that Msambweni and Samburu, which are along the major highways, are more vibrant and attract more businesses as opposed to Kinango and Kubo. All the businesses are service-oriented except for the two manufacturing in Matuga (Kenya Bixa and Kenya Calcium and quarrying in Samburu).

Retail, kiosks and transport are the most dominant and popular types of businesses. This clearly indicates that nearly all higher order goods and services are sourced from Mombasa. Secondly, this scenario shows the weak financial base the local authorities in terms of revenue generated from the business entities in the region (Table 5.22).

Table 5.23 shows the economic strengths of the centres in each division and can be used as a basis for preparation of a hierarchy of centres in the region. It also indicates the revenue strength of the County Council of Kwale. Table 5.24 shows that Kwale County Council receives most of its revenue between January and June. It is the intention of this Plan to broaden the revenue base of local authorities in the region.

Table 5.21: Kwale County Council Business Activities: Registered Businesses by Types and Area

	Type/Area	Msambweni	Kinango	Samburu	Kubo	Matuga	Kwale District
1	Retail Shop	290	30	75	40	90	
2	Shop kiosk	100	26	69	38	40	
3	Wholesales	35	2	4	-	4	
4	Hardware	12	1	5	-	3	
5	Posho mills	10	8	4	6	2	
6	Welders	6	1	1	1	2	
7	Hotel Accommodation	13	-	-	-	1	
8	Manufacturer	-	-	-	-	2	
9	Butchery	4	4	2	8	4	
10	Restaurant	6	2	3	-	2	
11	Cottages	10	2	-	-	2	
12	Contractors	5	-	-	-	3	
13	Private clinics	10	-	2	2	2	
14	Tailoring	15	3	4	5	12	
15	Carpentry	10	4	-	2	3	
16	Sundry goods	5	3	2	10	4	
17	Food kiosk	62	10	15	3	5	
18	Bar	5	3	4	1	2	
19	Tel. Bureau	10	1	-	2	1	
20	Barber	4	2	2	2	2	
21	Saloons	6	2	2	1	2	
22	Hotel	4	2	4	-	-	
23	Quarry	-	-	3	-	-	
24	Petrol Station	2	1	1	-	1	
25	Livestock trade	-	-	1	-	-	
26	Private slaughter house	-	-	2	-	-	
27	Hawker	10	4	5	2	10	
28	Transporters	-	-	-	-	-	170
29	Business offer	-	-	-	-	-	
30	Video café	4	1	1	-	8	
31	Book shop	2	1	1	-	1	
32	Bicycle repair	10	3	4	3	2	
33	Massage	6	-	-	-	-	
34	Jewellers	8	-	-	-	-	
35	Boutique	25	-	-	-	-	
36	Tour operator	15	-	-	-	-	
37	Private sector	8	-	-	-	-	
38	Video show	10	-	-	-	-	
Total		712	115	216	125	207	

Source: Kwale County Council, 2004

Table 5.22: Types and Numbers of Businesses

Type of business	Numbers
Retail	525
Kiosks	243
Informal	309
Transport	170
Saw Mills	30
Hotels / Restaurants	40

Source: Kwale Country Council, 2004

Table 5.23: Kwale County Council Revenue per Center from Licences, 2002

Division	location	Revenue (Ksh)	Ranking
Kinango	Gandini	36,750	4
	Kinango	187,250	1
	Nduya	45,000	3
	Puma	1,400	5
	Vigurungani	69,800	2
Kubo	Lukore	29,050	2
	Majimboni	19,250	4
	Mwaluvanga	14,00	5
	Mkongani	61,200	1
	Mwaluphamba	23,680	3
	Shimba Hills	21,000	6
Samburu	Chengoni	15,750	6
	Kasemeni	102,200	2
	Mackinnon	74,800	3
	Makamini	10,500	7
	Samburu	137,550	1
	<Mwavumbo	42,000	5
	Mwatate	15,750	5
	Taru	57,250	4
Matuga	Waa	166,350	1
	Tiwi	150,500	2
	Ng`ombeni	50,950	3
	Matuga	3,500	4

Source: Kwale County Council, 2004

Table 5.24: Kwale County Council Revenue Collection Trends for Licencing Fees — 2002

Month	Amount
January	2,801,595.65
February	2,416,951.50
March	2,098,884.10
April	1,817,633.50
May	1,574,096.20
June	1,363,167.30
July	1,180,502.90
August	1,022,315.50
September	885,325.20
October	766,691.60
November	663,954.40
December	574,984.50

Source: Kwale County Council, 2004

5.7.2 Linkage of Supply Centres of Goods and Services

Supply centres are evenly distributed but despite their good spatial coverage, a poor road network inhibits effective utilization of the centre. Business is confined along Lunga-lunga, Mombasa Samburu and Kwale-Likoni transport corridors.

5.7.3 Informal Sector

This sub-sector has become the biggest employer of the majority of the Kenyan population. Welding firms, curio shops, furniture wares and footwear are common undertakings in the market centres today. Kwale has similar business activities in Ukunda, Likoni, Kinango, and Kwale town. The location of the activities is strongly guided by demand.

Change in support sector has a direct bearing on the levels of operation and size of the business. This makes the sector quite vulnerable. Some operate without formal locations or operational licences.

5.7.4 Financial Institutions

The region has a few banks. Most of the banking services are located in Ukunda, which has Barclays, Kenya Commercial Bank and Kenya Women Finance Trust. Their location and bias deny banking services and access to the majority of small traders in Kinango and Msambweni. Likoni offers the services of Post Bank and has KWFT as well. In Msambweni, Post Bank services are also offered. In Kwale town the teachers savings and credit societies have taken up banking services initially offered exclusively by banks.

Financial services are limited and restricted to bias lending terms. However, the prevalence of informal merry-go-rounds by women is helping to alleviate this problem.

5.7.5 Trends and Business Changes

The rural economy in Kwale has collapsed. This follows the closure of a cane factory in Ramisi and a cashew nut factory in Kilifi. Marketing of agricultural produce has been poor following the liberalization of the market. The purchasing power of farmers has been severely eroded. This has had adverse effects on business activities and entrepreneurship in the district. Most rural shops and centres have collapsed. Designated rural centres such as Dzombo hardly command their projected market status. In Kinango, Samburu and parts of Kubo have few operational shops specializing in petty domestic items consumed by families in small quantities. Hardware and durable commodities are to be found in Likoni, Mombasa and Ukunda.

Hotels and restaurants and petrol service stations are emerging as ideal business along the Likoni - Lunga-lunga corridor. Petrol service stations also offer auxiliary services. They are common in Ukunda, Tiwi and Likoni. Despite the poor economic situation, Ukunda, Likoni and Lunga-lunga were observed to have made tremendous growth over the Past 10 years.

5.7.6 Emerging Issues (Problems)

- Poor roads in most parts of the district Kikoneni, Samburu and Msambweni;
- Limited access to credit;
- Limited capital investment; and
- Limited capacity to diversify and keep trends with change of times/opportunities.

5.8 TOURISM

5.8.1 Tourism Policy

Tourism is a major force in global trade. It plays a vital role in social and economic development of a nation and has potential of both preserving or destroying it. The sector provides direct and indirect employment to many people worldwide. The importance of the sector has prompted the Government to invest resources and develop policy measures to regulate its operations. The government will therefore pursue the various strategies to revamp the sector. These will include:

- Re-launching Kenya global tourism distinction. The Government will provide more resources towards promotion of marketing;

- Diversifying and improving tourism products, circuiting and sourcing for markets while ensuring sustainability;
- Investing in local communities;
- Facilitating local communities to forge partnerships and linkages;
- Enabling tour operators to undertake refresher courses to avail affordable costs to participants in tourism; and
- Promoting domestic tourism by sensitizing the public on tourism.

5.8.2 Tourist Sites

Tourism sites in the region include, hotels historic sites, forests, coral and sandy beaches, marine reserves and parks, bird habitat areas and turtle breeding grounds. The region is endowed with a variety of scenic sites. Its diverse geographical features ranging from elevated uplands to low-lying coastal

Table 5.25: Distribution of Tourist Attraction Sites in Kwale				
	Name of site	Nature of attraction	Potential	Current Problems
1	Mwaluganje Elephant sanctuary	Game-especially giant mammals e.g. baboons, Elephants	- Variety of plant and game species - Invest in tourist accommodation facilities	Overstocking
2	Shimba Hills	Game birds and diverse plant species	Ramsa site conservation	- Poor access roads - Inadequate tourist facilities
3	Monuments	Caves, Arab and British houses. Melting cultures of various communities.	Historical site, quite accessible	- Encroachment - Some appear on private land information for informal settlements project - Lack of documentation
4	Kayaks	Sacred shrines, cultural/religious sites	Bio-diversity and cultural knowledge	- Lack of tourist Facilities - Encroachment - Lack of documentation
5	Mpunguti Marine Park Kisite	Bio-diversity or cultural artefacts, coral fish and turtle breeding	Ideal bio-diversity and bird sanctuary	- Encroachment and inaccessibility
6	Coastal strips	Beaches Ocean/sea sports	Ocean sport, fishing Sport, hotel construction	- Pollution - Moral decay
7	Coastal Strip & hinterland	Cultural material, dance, artefacts Digo/Duruma/Wavumba culture	Untapped cultural; exhibitions	- Lack of documentation and promotion

Source: Field Survey, 2004

Plate 5.3: Panoramic View of Wasini Island — Shimoni Depicting Existing Tourism Potential



Source: Physical Planning Department, 2004

plains provide Kwale with unique geographical formations. Besides the ocean that stretches in the lower south, the region has abundant wildlife found in the Shimba Hills and Mwaluganje. The dominant wildlife species include elephants, baboons, monkeys, buffalos, lions and giraffes.

The region has remnants of tropical rain forests. These bear rare hard wood species such as Mvule, card fern and many other species with local Swahili names. Some of these have been used locally as shrines and as worship points for the local Duruma and Digo people.

Kayas provide ample breeding and habitat for variety of bird species. Shimba Hills and Kaya Kinondo are major bird reserves with plenty of rare bird species. They provide nice sceneries to tourists. The natural landscape of the region, unlike other areas of coast, is hilly. Shimba hills, Kwale and Kinango elevation break the monotony of lowland plains in the coast.

The cultural conservation diversity and historical development dating to pre-historic period and colonial times make Kwale the ideal destination at the coast. Shimoni Caves and Diani (Congo Mosque) are great historical indicators that have a religious transformation and a historical monument of slavery and the ugly period of persecution that the locals went through.

5.8.3 Tourist Facilities

The region has several tourist facilities that are concentrated along the coastal strip. Major hotels are located in Diani confining the spatial spread of these facilities.

Most of the hotels concentrate in Diani, meaning the other beaches are underexploited yet they have great potential. Tiwi ranks second in bed capacity and this may be explained by ease of accessibility of both Diani and Tiwi from the Mombasa-Lunga-lunga road (Table 5.26).

Beach	No. of Beds
Likoni	-
Tiwi	733
Diani	6,915
Msambweni	182
Shimoni	48
Shimba Hills National Park	64
Mwaluganje Elephant Sanctuary	40

Source: Provincial Tourism office, 2004

Table 5.27 indicates that hotels have recorded average bed occupancy rate of below 50% since 1998. The years 1998 and 2003 recorded the lowest booking at 26% and 30.4%, respectively. This can be attributed to the 1997 Likoni clashes, bad publicity by international press after the terrorist attacks of 1998 and 2003, and poor marketing. Currently, however, the Ministry of Tourism has revamped the tourism strategy and stopped reliance on traditional sources of Europe and America and gone to the Far East. They are also encouraging domestic tourism to reduce over-reliance on the world market and have opened up new tourist circuits.

Facilities are mainly concentrated in Diani and surrounding areas of Ukunda. Diani, therefore, is exhibiting promising characteristics in terms of attracting tourists (Table 5.28).

Plate 5.4 Kaya Kinondo A Tourist Attraction Site



Source: Physical Planning Department, 2004

Table 5.27: Bed Occupancy Per cent Trends, between 1997 and 2003

Months	Years						
	1997	1998	1999	2000	2001	2002	2003
January	68	29	35	48	57	58	29.5
February	72	27	42	49	66	60	32.2
March	61	21	34	39	56	61	
April	52	24	29	42	32	43	
May	36	15	16	34	45	35	
June	43	17	19	32	51	59	
July	54	25	31	43	64	43	
August	63	32	38	54	43	47	
September	38	25	28	36	43	35	
October	39	27	23	47	33	53	
November	42	33	39	52	45	53	
December	44	37	41	59	65	57	
						592	
Average	51	26	31.3	44.5	49.8	49	

Source: Provincial Tourist Office, 2004

Table 5.28: Distribution of Tourism Support Facilities

Type	Location	No.	Remarks
Money Exchanges	Diani	4	3 banks and 1 forex bureau
Restaurants	Diani, Shimoni, Shirazi Bodo	46	23 are in Diani

Source: Physical Planning Department field survey, 2004

Plate 5.5 Shimoni Reef Hotel at the Background — A Tourist Facility



Source: Physical Planning Department, 2004

5.8.4 Problems

1. Closure of hotels such as Club Green Oasis, Golden Beach, Tiwi Sea Castle among others;
2. Harassment of tourists by beach operators;
3. Cultural decay;
4. Sensitivity of the tourism industry to negative publicity;
5. Poor state of facilities especially in Shelly Beach area;
6. Poor infrastructure especially Msambweni, Shimoni and Shirazi Bodo;
7. 1997 clashes; and
8. Crime in Tiwi and Ng'ombeni area.

Plate 5.6: Neptune Beach Hotel Diani, A Tourist Facility



Source: Physical Planning Department, 2004

5.8.5 Emerging Issues

The sector faces the following challenges:

- ***Insecurity***
International terrorism with sporadic occurrence in Kenya has created wrong impressions and concerns about security for tourists in Kenya. This was further reinforced by the Likoni clashes that affected the region in 1997.
- ***Poor state of infrastructure***
The poor state of roads, limited airstrips, outdated telecommunication services, inadequate water and limited electricity coverage leading to poor access to existing sites.
- ***Moral decay***
Prostitution, child labour, drug abuse and other social ills.
- ***Job insecurity***
Seasonal and vocational employment due to poor services lead to decline in bed occupancy and number of visitors. Over-reliance on foreign tourism and dependence on European tourist markets.
- ***Overdependence on the tourism sector***
- ***Poor spatial spread of tourist facilities.***

Human Settlements

6.1 ROLE OF HUMAN SETTLEMENTS IN REGIONAL DEVELOPMENT

Growth and development of regions require some degree of concentration of people and activities to secure efficiency. These concentrations of people and activities, whether in scattered homesteads, large tracts of property holdings, a small village, or a large metropolis, are human settlements. Human settlements therefore play an essential role as agents of growth and development by providing favorable locations for, among others:

- Productive investment;
- Transformation of traditional societies into the modern nation state;
- Deep evolutionary changes in social values and motivation; and
- Changes in technologies and economic systems.

It is in the same human settlements that associated problems like degradation of the environment; degradation of human qualities of life; inequality and lack of equity, land use and development control malpractices, among others, are most acute. The scale and intensity of both positive and negative changes necessitate “planning for the human settlements” as part of overall national development policies. Human settlements perform the following more specific functions:

6.1.1 Service Function

Human settlements facilitate provision of schools, health services, public utilities, banking services, cooperatives, administration, judicial, recreational and other social services.

6.1.2 Economic Function

Human settlements provide employment in agricultural, industrial, commercial and in the service sectors. They provide markets for both subsistence and cash produce, and allow material advancement out of manufactured goods for persons resident in them.

6.1.3 Residential Function

Human settlements always have a residential function for people working in agricultural or non-agricultural employment. As development progresses, the demand for these activities increases and, in turn, the development has a beneficial effect on the entire region through interdependence between urban and rural settlements.

6.2 HISTORY OF HUMAN SETTLEMENTS IN THE REGION

One cannot distance the history of land ownership in the Mombasa Mainland South and Kwale District Region to that of the entire Kenyan Coastal Strip. The oldest historical record of the East African Coast is in an account of a circum-navigation of Africa about the year 500 B.C. by Phoenician sailors for the Pharaoh Necho of Egypt. Their ships must have called at Mombasa. The Port Tonika described in the “Periplus of the Erythraean Sea” which was a sailing guide to the coasts of the Indian Ocean written in Alexandria about 80A.D. and quoted by the Greek geographer, Ptolemy in A.D.150, is identifiable as Mombasa.

Omani Arabs are reputed to have started settling at many places along the coast in the 9th century A.D. However, the oldest dated relics on Mombasa Island are thought to be not earlier than 15th Century. In 1498, Vasco da Gama was the first European to visit Mombasa, which thereafter became one of the main Portuguese bases on the route to Goa and the East Indies. Arabs disputed the Portuguese occupation intermittently and with varied degrees of success for over two centuries, until the Portuguese monopoly of sea in the Indian Ocean was ended by other European nations. They finally left Mombasa in 1729.

The direct role of the Sultan of Zanzibar over the Coastal Strip, stretching along the entire length of the coastline and 10 miles deep, came to an end when the British Protectorate was established at the turn of the 19th Century. In 1932 the Sultan of Oman moved his capital to Zanzibar, but the red flag of Zanzibar continued to be flown over Fort Jesus until Kenya gained independence in 1963. However, Zanzibar's possessions along the Kenya coast were included in the British East Africa Protectorate declared in 1895 and were governed through de facto as part of that territory. The property rights of the Sultans subjects were protected and claims to land recorded and registered as freehold titles. The remainder of the Coastal Strip was deemed to be Crown Land (now Government land). After independence, the property rights of the Arab claimants and other registered freehold title were maintained. The land in the remaining areas of the province was Government land except for the "Native Reserves" set out under the Trust Lands Act, which were entrusted to the county councils to be administered for the benefit of the people normally resident in the area. Subsequent adjudication of the land resulted in transfer of the former "native land units" to individual title holding and in setting apart land for townships.

Table 6.1: Land Resource Fact File	
Division	Area (Kilometer Square)
Msambweni	3,267
Samburu	2,102
Kinango	1,848
Kubo	685
Matuga	358
Total	8,260
Likoni	64

Source: Physical Planning Department field survey, 2004. Note: Sixty-two Kilometers square (62 km sq) of the economic exclusion zone have not been included here

The land question in Kenya and especially the Coast is thus a colonial legacy. African traditional systems that had stabilized through centuries of evolution were suddenly disrupted through expropriation of large areas of the country by application of laws that were alien to the African customary way of life. At independence, these foreign systems were adopted by the independence Government and expropriation of African lands legitimized in the Kenya independence constitution. Attempts to effect land reforms to address the land question were undertaken soon after independence but these were basically geared towards land redistribution. Such reforms were carried out without a comprehensive land policy, a situation that obtains to date.

Table 6.2: Land Categories	
Land Category	Area in Kwale District (km ²)
Total area	8,260
Arable land area	120
Non Arable land area	67.7
Water mass	62
Urban area	83.22
Gazetted forest	350.4
Total Length of Coastline	250

Source: Kwale District Development Plan, 2004

6.3 TYPES OF HUMAN SETTLEMENTS

There are two types of human settlements, the nucleated and the scattered which are typical of the rural areas.

6.3.1 Urban Settlements (Nucleated)

These centers are classified according to their functions from the lowest to the highest. A brief functional description of each type of human settlement is given below:

Designated Local Centres

A local centre represents the lowest level of service and as the name implies, is designed to serve the local needs of people within walking distance of the center. A local center should contain a full primary school, several shops, a dispensary, an open market and eventually a public water supply. Such centres are of significant social and economic importance especially in sparsely populated areas where they will serve a much larger area. In general, they are designed to serve a catchment area of approximately 5,000 people. The centers themselves will have scarcely distributed residential population and will be served by a minor road, as a minimum.

Designated Market Centres

A market center has been designed to serve approximately 15,000 rural people in the surrounding hinterland, which will enable it to support both primary and secondary school and also a health center with family planning services. These centers have been designed for the development of a public water supply, sub-post office, telephone facilities, a police post and a local public transport service (or an airstrip in remote areas), and other social, commercial and local administrative services. Market centers are served by a minor road as a minimum and will have a residential population of less than 2,000.

Designated Rural Centres

Over a period of two to three years of progressive economic development they will become small towns that have an important role to play in the development of the rural economy. They serve an area populated by approximately 40,000 people and may be expected to have a residential population of between 2,000 and 10,000 inhabitants when fully developed. The rural center will be particularly important in improving the standards of amenities in rural areas, and being within convenient access of some 40,000 to 50,000 people should be used for important local barazas. It should have a secondary school and a health center with maternity facilities; development of better commercial facilities and bigger markets and development of secondary roads as a minimum. They should eventually have piped water supply, electricity and a sewage disposal system, telephone services and full postal and banking facilities. Ultimately development of such infrastructure facilities may lead to the development of rural industries.

Designated Urban Areas

A designated urban area is not available in the region of study as it describes centers with a residential population in excess of 5,000, but Likoni as a part of Mombasa Municipality fits. Such an area has the full range of services associated with a town including treated piped water supply, a piped sewage system, a fully equipped hospital, secondary schools and other specialized services. They are designed to become focal points of commercial, industrial, administrative, recreational and social services required for 100,000 150,000 rural hinterland population it serves.

It must, however, be emphasized that the mere designation of a place as a certain type of center would not in itself bring about development of that center. It would be necessary for all responsible for the location of physical infrastructure to ensure decisions and investments adhere to the urban area's plan. A point to note is that in some of these centers Likoni, Kwale, Kinango, and Lunga-lunga land belongs to the Government. Most of this land has either been allocated or squattered on in disregard of future needs. The Ministry of Lands, Physical Planning Department in 1978 selected the following centers in the region to undertake various functions described above, although no update has been carried out.

Principle Towns	Urban Centers	Rural Centers	Market Centers	Local Centers	
Likoni	Kinango Kwale	Ukunda (Diani) Msambweni	Twi Ng'ombeni Ramisi Vanga Lunga-lunga Kikoneni Ndavaya Samburu	Tsunza	Mwereni
				Gandini	Majoreni
				Gulanze	Shimoni
				Matuga	Mrima
				Matumbi	Mkomba
				Shambini	Mkongani
				Kinagoni	Silaloni
				Waa	Mwangulu
				Kigato	Mackinnon Road
				Muhaka	Maji ya Chumvi
				Gazi	

Source: Human Settlement Strategy, 1978

Out of the centers named above, the following have a physical development plan to guide development: Kwale town, Mackinnon Road, Kinango, Mazeras, Kalalani, Shimoni, Msambweni, Lunga-lunga, Samburu, Shimba Hills, Kanana and Matuga. Mombasa town has overshadowed the growths of these centers. There is poor development control by the local authorities. This has led to slum-like type of development in all these centers. There are also inadequate urban-related infrastructure and services in the centers.

There is therefore need to revise the development plans and plan all centers that have not been planned. This will give the local authorities of the region an instrument to control development and provide infrastructure and services.

Divisions	Section	Aprox Ha.	No. of Plots	Stage Of Progress
Msambweni	Shimoni	3,075	730	Registered in 2002
	Vanga	6,171	661	Maps with the Director of Surveys for Fair Drawing.
	Dalgube	1,113	972	Random Checking
	Lunga-lunga	2,475	641	Implementation of Land Adj. Officer Objection Case Decision on Plot No. 588.
	Mahuruni	1,875	1,557	Hearing of Objections to the Adj. Register.
	Makwenyeni	2,300	400	Hearing of Objections to the Adj. Register.
	Kasemeni	4,525	1,555	Under Demarcation Exercise.
	Shirazi/Bodo	498	748	Re-plotting of 70 Plots on the new P.I.D.
Kinango	Mwaluganje 'A'	350	75	Records and Maps are with the DLASO for Onward Transmission to the Director of L/Adj. for Issuance of Notice of Finality.
	Kirazini 'B'	4,800	1,467	Land Owners are Inspecting the Adj. Register and also filing Objection Cases.
	Kifyonzo	9,700		Declared on 12th February 2003.
	Mwaluganje 'B'	500		Declared on 26th March 2003.
Kubo	Mbegani	2,600	273	Re-plotting on the New P.I.Ds.
	Kirindini	3,675	1,389	Demarcation is being finalized
	Mkomba	4,600	1,895	Under Demarcation Exercise.

Source: District Land Adjudication and Settlement Office — Kwale, 2004

Although this designation of centers was done, no serious emphasis was laid on directing development and developing linkages between the centers themselves and the centers in the rural area. Programmes in the rural areas were initiated in disregard to the designated centers. This has led to the decline of some centers mainly in the drier hinterland areas, save for Kinango, Samburu and Mwangulu. Also some centers along the coastline are facing extinction. These are Ramisi, Majoreni and Mrima. This is because of the collapse of the Ramisi sugar industry. The reason of decline of the centers in the hinterland is due to poor condition of roads connecting the centers with higher order centers. Of significance is the Lunga-lunga-Kinango-Samburu road, Kinango, Mariakani and Kinango Mazeras roads. These roads have been in a terrible state for long and have made the centers along them inaccessible.

6.3.2 Adjudication Sections and Settlement Schemes

Land adjudication work in the district started in 1969. Since then a total of 42 sections covering approximately 277,995 hectares have been registered.

6.3.3 Constraints in Adjudication and Settlement Work

- Inadequate funds in recurrent budget i.e. for transport, field allowance, traveling and accommodation;
- Inadequate technical staff in land adjudication matters;
- Squatter problem in settlement schemes; and
- Allocation of settlement plots done on unsurveyed plan.

6.4 FACTORS INFLUENCING HUMAN SETTLEMENTS IN THE REGION

Although these factors are dealt with independently, they do interrelate and complement one another.

6.4.1 Historical Events

One cannot distance the history of land ownership and hence human settlements in Kwale District and Mombasa Mainland South to that of the entire Kenyan Coastal Strip. The oldest historical record of the East African Coast is an account of a circum-navigating of Africa about the year 500 B.C. by Phoenician sailors. Omani Arabs are reported to have started settling at many places along the coast in the 9th century A.D. The direct role of the Sultan of Zanzibar over the Coastal Strip, stretching along the entire length of the coastline and 10 mile deep saw the establishment of nucleated human settlements. The property rights of the Sultan's subjects were protected and claims to land recorded and registered as freehold titles. The remainder of the "Coastal Strip" was deemed to be "Crown Land" and "Native Reserve" (now Government land and trust land). In the Native Reserves the locals established dispersed settlements. The nucleated settlements along the coastal line were Mombasa, Gasi, Shirazi, Bodo, Shimoni, Majoreni, and Vanga.

Division	Name Of Scheme	Scheme No.	Approx. Ha	Total No. of Plots	Status/Remarks
Msambweni	Ukunda	466	607	124	Registered. Allottees are collecting the Title Documents.
	Shimoni	470	2,032	508	-do-
	Diani	475	798	674	-do-
Matuga	Matuga	472	5,266	1,342	-do-
	Golini	488	290	146	-do-
	Sabharawall	467	120	23	-do-
	Tempo/Spring	468	302	31	-do-
	Mbuguni	490	2,400	787	Not yet Surveyed.

Source: District Land Adjudication and Settlement Office - Kwale, 2004

6.4.2 Improved Infrastructure

There is a positive correlation between improved urban infrastructure and rising agricultural produce. Small and secondary urban centers in the region should therefore be supported by investment in physical and social infrastructure on the basis of their own growth potential, which has not been the case in the past. Unless this is done, the region will continue to experience backwash effects in favor of Mombasa, as it has been the case. Capital, labour and raw materials will continue to be drained out of the region if physical and social infrastructure will not be provided to the region's urban centers.

Concentrating on physical and social infrastructure facilities in certain chosen places as opposed to dispersing them throughout the entire region ensures the most efficient use of capital resources. Centers like Likoni, Diani/Ukunda, Kwale, Lunga-lunga, Samburu, Taru and Mackinnon are examples of this factor.

6.4.3 Resource Endowment

The region's urbanization pattern shows that the urban population is concentrated in areas, which have experienced intense resource development. The coastal strip defined by the Mombasa Lunga-lunga road has more elaborated urban pattern, which is linear in nature. Human settlements are dense in this part of the region be it rural or urban setting. These urban nodes are Likoni, Ng'ombeni, Waa,

Table 6.6: Squatter Settlement Schemes					
Divisions	Name of Scheme	Scheme No.	Approxha	No. of Plots	Remarks/ Status
Msambweni	Tumbe	786	135	280	Registered
	Ramisi		80	67	Registered
	Vanga/Majoreni Island.		42	35	Registered
	Kinondo/Chale	775	17	32	Registered
	Mwabungo	770	125	336	Awaiting Registration. External Boundary with ICIPE & Ramisi is Pending.
	Shimoni Village	769	300	723	The Allottees were issued with Letters of Offer from Plot Nos. 1-723 while Nos. 724-1300 is yet to be allocated.
	Gazi		4	8	
	Shimoni Ext.	470	615	658	Not Surveyed.
	Kinondo Chale Extension	778	20	51	Not Surveyed.
	Chale/Kinondo	775	10	22	
	Majoreni		10	21	Not Surveyed.
	Gombato		38	93	Not Surveyed.
Matuga	Golini Ext.	469	150	104	Partly Registered.
	Matuga Township	472	125	181	Registered.
	Ngombeni/Maweni	773	350	985	Not Surveyed
	Matuga Sheep & Goat	472	450	814	Partly Surveyed.
Samburu	Mackinnon Road	774	7,500	1,650	Not Surveyed
	Mwavumbo/Mgandini		105	253	Not Surveyed.
	Mwamdudu	768	340	478	Not Surveyed.
	Mazeras	772	16	37	Not Surveyed.
Kubo	Shimba Hills	771	25	61	Not Surveyed.
Kinango	Tsunza	767	800	962	Not Surveyed.

Source: District Land Adjudication and Settlement Office — Kwale

Table 6.7 Highlights in Settlement Schemes			
Division	Name of the Scheme	Area of Complain	Nature of The Problem
Matuga	Matuga	Matuga DDI	The Director of the Institute Claims encroachment of Staff Quarters and Livestock Farm. The affected Plots are: - Plot Nos. 1403,1494,1348,1347,1346,1345,1344,1353 1507 1612,
	Golini	The whole process of Plot Allocation exercise.	Several Squatters are claiming that they were not considered during the exercise. Yet they are the people who were living on the ground i.e. Plot Nos. 180, 181, 182.
Msambweni	Tumbe	The whole process of Plot Allocation exercise.	Several Squatters are claiming that they were not considered during the exercise. Yet they are the people living on the ground.

Source: District Land Adjudication and Settlement Office — Kwale

Kombani, Tiwi, Ukunda, Diani, Mwabungo, Gasi, Msambweni, Ramisi, and Lunga-lunga. This pattern is also observed along the Mombasa-Nairobi Road. Nodes like Mazeras, Mariakani, Samburu, Taru and Mackinnon have developed. The other axis is the Kombani- Mutuga-Kwale-Kinango. The other noticeable pattern is the tourist development in Diani and the tourist, fishing and water transportation development of the Gazi Shimoni and Vanga.

Where resources have been identified and exploited, they attract a higher concentration of human settlement. Thus there is concentration of human settlements along the coastal line up to the coastal uplands. This is the area that receives a good amount of rainfall that can support agriculture. The coastal strip to the coastal uplands is classified as medium potential agricultural land suitable for crop farming. The other two-thirds of the region can only sustain commercial ranching or pastoral livestock development to a certain degree. Population distribution in these areas clearly shows a marked relationship between land potential and population density. The greater the land potential, the higher the density and the greater the concentration of human settlements.

Table 6.8: Registered Group Ranches				
Division	Name	Approximate Area (Ha)	Members	Remarks
Samburu	Mwavumbo	28,151	3,331	Registered
	South Samburu	63,497	3,701	Registered
Msambweni	Mwereni	44,040	2,909	Registered
Group ranches Under Adjudication Process				
Kinango	Ndavaya	29,947	1,267	Not Registered
Samburu	North Samburu	119,271	-	Not Registered
	Kilibole	2,248	-	Not Registered

Source: District Land Adjudication and Settlement Office — Kwale

6.4.4 The Role and Functions of Urban Centers

Even against the backdrop of poor management and growth, the growth rates of economic activities are high in the urban centres of the region. The centres are incubators of innovation, new enterprises and crucial sources of employment. They are the distribution centres for agricultural inputs as well as markets for agricultural produce. Urban centres like Likoni, Kwale and Diani/Ukunda, Kinango, Samburu, Lunga-lunga and Msambweni will continue to grow due to the various roles they play in support of assigned activities or economic developments Kwale as a district Headquarter; Likoni for cheap residential accommodation to Mombasa's working population; Diani/Ukunda for servicing the tourism industry; Gazi, Shimoni and Vanga for maritime trade with Pemba, Zanzibar and Northern Tanzania. Likewise Kinango and Msambweni as divisional headquarters and housing the district

hospitals; Samburu as divisional headquarters and along the busy Mombasa-Nairobi highway. Lunga-lunga is both a border town and a divisional headquarter.

6.4.5 Urban-Rural Linkages

There exists a severe weakness in intra and inter-urban rural linkages. The condition of roads between urban centers and their surrounding rural areas is very bad in the region. This has led to higher transportation costs, affecting human settlements in the hinterland areas. Roads are in poor condition. Enterprises that exist and those which might have come up, have wound or were not implemented. The demand by the population for non-food goods, input and services by the agricultural sector and demand for food and goods by the urban dwellers can only be met if there is a co-ordinated urban-rural linkage.

6.4.6 Land Tenure

Along the coastal strip and the coastal uplands, land tenure are dominated by absentee landlords, and on these tracks of land are illegal squatter settlements. The Trust and Government lands in these areas have since been adjudicated and Government settlement schemes implemented. No consideration was made to set aside land for urban areas. Thus, very few urban centers have land for expansion. Centers like Likoni, Diani/Ukunda, Msambweni and other small towns have developed on private land. This has led into sub-divisions and some illegal settlements to accommodate the expanding demand for land. The end result of this has been uncontrolled development of slums in the area.

Alternative ways and means must be clearly defined to show how the landowners could be brought on board through participatory planning process to strengthen the management of the local authorities to be able to respond to growing demand for their services.

In the drier areas of the Nyika Plateau in Kinango, Samburu and some parts of Lunga-lunga divisions land is held in trust and under group ranches. In some areas, adjudication has not been done. Urban land in these areas could be availed during adjudication and through requests to the members of the group ranches. Only Kinango, Samburu and Mackinnon Road Centers have land set aside for urban development. A point to note is that most of the group ranches currently are non-functional. This has led to rural human settlements being scattered without order.

6.4.7 Ethnicity and Religious Factors

Ethnic and racial heterogeneity is greater in the larger urban areas like Likoni, Diani/Ukunda, Kwale, Kinango and Lunga-lunga than in the small urban centers and rural areas. Religion has played a greater role in shaping of human settlements particularly along the coastal strip. This is a Muslim dominated zone and the mosque is an imposing institution attracting human settlement. A Muslim has to pray five times a day thus the mosque must be accessible to most of them. This fact makes Muslims live together in villages close to a mosque be it along the coastal strip or in the interior of the region. Waa, Ng'ombeni, Tiwi, Shirazi Majoreni Vanga and Bodo share these characteristics.

6.4.8 Weak Management and Poor Governance

The presence of Kwale County Council and even Mombasa Municipal Council for Likoni is not effectively felt in the urban centers of their jurisdiction. As for Kwale County Council, there is lack of personnel with the necessary skills to provide leadership. The Mombasa Municipal Council has the needed personnel but there exists negligence in their part to provide leadership in Likoni, hence the development of Likoni into a big slum.

All the urban centers of the region lack proper institution to provide management services. There is need therefore to propose ways on how these councils of the region can be enhanced to strengthen the management and governance of urban centers.

The future human settlement model of Kwale District and Mombasa Mainland South is expected to reduce poverty in the region. The strategy formulated should therefore be able to address the following:

- Increase the quality and coverage of basic social and council services, facilities and infrastructure provision;
- Improve physical infrastructure more so in smaller and secondary towns so that they can attract and support more diversified economic activities;
- Strengthen economic base and employment to raise productivity and income and enhance the capacity of the towns to grow and diversify;
- Build capacity of the Mombasa and Kwale local authorities in order to administer, plan and create wealth to manage development more effectively in future;
- Upgrade slums and squatter settlements more so in Likoni and Diani/Ukunda and meeting basic housing needs;
- Improve physical infrastructure both in rural and urban areas;
- Manage land use in the urban areas;
- Improve transport services and linkages between urban and rural human settlements;
- Strengthen the economic base and employment structure; and
- Strengthen and expand small-scale industries.

6.5 HOUSING

6.5.1 Housing Policy

In Kenya, like in many developing countries, poor economic conditions and high urban population growth rate continue to compound the urban housing problems more than in the rural areas. Other factors adding pressure to housing include inadequate infrastructure to support housing development, low purchasing power of both urban and rural households; poor management and lack of appropriate housing policies.

The public policy instruments that may be used in housing development include:

Regulations:

Land use planning, zoning and sub-division, building standards and by-laws and rent control, among others.

Fiscal and financial policies:

These include control of mortgages, property taxation and budgeting and user charges on housing services.

Supply of housing services:

This include land provision, public services sewerages, drainages, water supply, roads, street lighting, among others and direct public provision of shelter.

A public policy in housing is to ensure those private decision makers behave in a way that maximizes the social or external benefits. A housing policy refers to the range of activities that governments and private institutions jointly undertake to provide housing services for a population. The Government also intervenes to cure the housing shortage; to aid the poor and improve on general housing conditions (qualitative aspect). It also aims to ease the affordability burden and stabilize production to aid economic growth.

6.5.2 Housing Conditions of the Region

Most of the permanent and semi-permanent houses are found in the urban areas of the region, which represent 17 per cent of total population. The region had 23.6 per cent permanent-to-semi-permanent dwelling units. Housing materials range from iron sheets, tiles, concrete, makuti and asbestos for roofing to stone, brick and mud as walls. For the floors, materials are cement, tiles and wood.

Temporary structures dominate the region's rural areas (76.4 per cent). Building materials are grass, mud, earth and wood. This situation is explained by levels of poverty in the rural areas of the region more so in Kinango and Samburu. Houses are mostly the Swahili type, comprising three bedrooms and verandah that is also used as a kitchen.

Table 6.9 shows future housing needs of both urban and rural areas of the region.

Table 6.9: Future Housing Needs				
	2009	2019	2029	2034
Urban	3,813	5,753	8,923	10,145
Rural	18,615	28,086	435,66	49,532
Total new units	22,428	33,839	52,489	59,677

Source: Physical Planning Department, 2004.

6.5.3 Possible Scenarios of Human Settlement of Kwale District and Mombasa Mainland South

Following the analysis of human settlements, a possible scenario emerges that has already taken effect in some parts of the region. This scenario is explained in Figures 6.1, 6.2 and 6.3. The scenario obtains in the area where adjudication has already taken place especially along the coastal strip and the coastal highlands.

Figure 6.1 depicts first generation human settlements after land adjudication or settlement schemes or group ranches. Here, farming land is abundant. It is characterized by family head homestead.

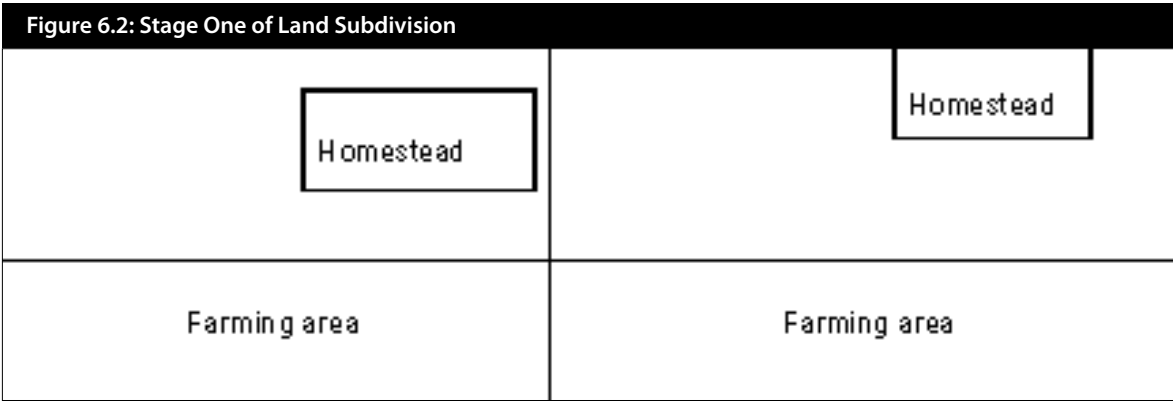
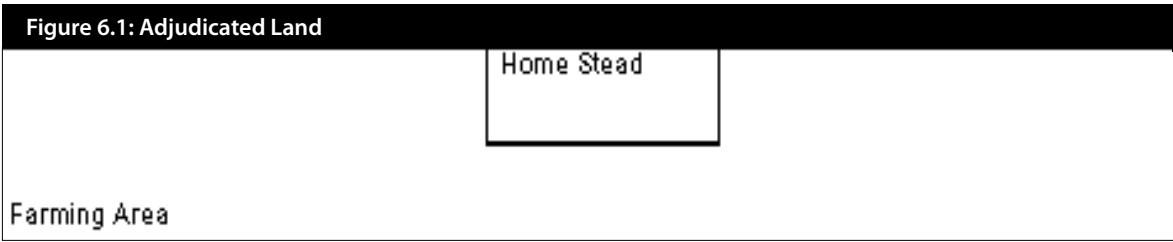
In figure 6.2 sons of the family head are mature hence subdivision of land takes place to create more homesteads and family heads that leads to less farming area.

Figure 6.3 depicts third and fourth and subsequent generation households. Farming land is scarce in some parcels. The area is now developing into an urban center. This is true in areas like Ng'ombeni, some parts of Waa, Ukunda, Mwabungo and Msambweni. Good agricultural land is used for human settlement rather than agricultural production. Ranching land in Kinango, Samburu and some parts of Lunga-lunga divisions will be taken up by human settlements in exchange with grazing land. In the planning period a total of 168,533 new households will be formed. All these households will be formed on land, hence more land will be needed to accommodate their housing needs. The implication will be reduction of average acreage of good agricultural land, which currently stands at 10 acres.

Plate 6.1: A Modern Makuti House



Source: Physical Planning Department, 2004



Source: Physical Planning Department field data analysis

Plate 6.2: A typical Digo homestead with temporary houses



Source: Physical Planning Department, 2004

This scenario will pose the following challenges:

- Space for food production;
- Diseconomies in agricultural production process;
- Cost of providing services to dispersed settlements;
- Accessibility to basic social services for the majority of dispersed settlements;
- Conservation of the environment and biodiversity; and
- Aesthetics of the rural landscape.

The above scenario demonstrates why this plan should propose the future human settlement model for the region before the situation gets out of hand where restructuring of settlements will be a costly affair. Figure 6.1 frees the agricultural land from human settlements and this is the ideal desirable situation that the region should strive to as a human settlement model of the future. This is to say that the urban centers will be the future of human settlements in the region. The advantage of this model will be:

- Rationalization of farming systems in the countryside;
- Cost savings in service delivery to nucleated settlements;
- Conservation of nature; and
- Restoration of degraded environment.

The challenge posed by the above model, which this plan has to address, is people of the region will be induced to modify their cultures that bound them to their ancestral lands for generations. Secondly, they must consider what possible alternative means of livelihood can replace farming as a basic source of employment and income.

6.6 EMERGING PLANNING ISSUES

- Squatter problem;
- Absentee landlords;
- Slow process of adjudication and legalization of land;
- Encroachment on riparian reserves (e.g. adjudication up to the seashore);
- Human-wildlife conflict;
- Unplanned settlements;
- Political interference in the process of planning, adjudication and settlements;
- Ineffective development control measures;
- Dying centers (Ramisi, Majoreni, Fikirini);
- Degradation of the environment;

- Inadequate urban related infrastructure and service;
- Over-concentration of development activities along communication channels;
- Alienation of public land;
- Public utilities;
- Watu wa bara Syndrome;
- Townships within clan land;
- Lack of land use policy;
- Weak institutional support (Settlement Fund Trustee , councils and planning);
- Social cultural effect on settlement (clan land, attitudes towards Government officers and Ignorance);
- Uncollected title deeds;
- High poverty incidence;
- Poor housing standards; and
- Prevalence of poverty.

Infrastructure and Social Services

7.1 DEFINITION OF INFRASTRUCTURE

Infrastructure is the social overhead capital that supports the economy of a region. Infrastructure facilitates efficient and effective resource utilization and distribution of goods and services within and outside the region. The level or standard of infrastructure determines the success or failure of a region's growth and development.

Good infrastructure increases productivity and therefore improves standards of living of people, alleviates poverty and improves environmental conditions within human settlements, provides linkages between people, resources and activities that provide opportunity for sustainable development.

Infrastructure includes different modes of transport, communication, health, education, water and energy. Analyses of existing infrastructure in Mombasa Mainland south (Likoni) and Kwale districts are necessary in order to assess the current needs and project the needs and requirements between 2004 and 2034.

7.2 ROLE OF INFRASTRUCTURE IN DEVELOPMENT

Infrastructure has a direct relationship to economic growth, poverty reduction and the environment. Infrastructure represents the engine and wheels of economic activities in any economy or region. For instance, telecommunication, electricity and water are used in the production process of nearly every sector and transport is an input for every commodity. Infrastructure is important in ensuring that growth is consistent with poverty reduction. Access to at least minimal infrastructure services is one of the essential criteria for defining welfare. For example, access to clean water and sanitation has a direct impact on reducing mortality and morbidity.

Similarly construction and maintenance of some infrastructure especially roads and water works can contribute to poverty reduction by providing direct and indirect employment. Infrastructure provision results from the efforts of the community to modify their physical environment or habitat in order to improve their comfort, productivity and protection from various elements, and to shorten distance. For instance, poor management of waste results in clogging of drainage and has been linked to the proliferation of disease-bearing mosquito in stagnant water.

Provision of infrastructure services to meet the demands of business, household and other users is one of the major challenges of any kind of development planning whether of economic, physical, social or political in nature because most infrastructure requires heavy initial capital outlay.

7.3 INFRASTRUCTURE AND SERVICES IN KWALE DISTRICT AND MOMBASA MAINLAND SOUTH

Generally, infrastructure in the region has been classified as public utilities (electricity, telecommunication, piped water and sanitation both solid and liquid waste management), public works (roads and causeways, bridges, dams and parking terminals and other transport service railways, seaports,

airports, and airstrips, harbors and ferries). Also included in this category are facilities such as educational, health and security institutions.

7.3.1 Transportation

a) Transport Policy

The government recognizes the vital role played by transport in enhancing economic transformation. Transport is seen as an engine that steers faster economic growth and sectoral development. Due to this critical role the government has invested heavily in provision of infrastructure to improve transportation services for both goods and passengers. Besides investment the government has established the ministry of transport to regulate and control transport services in the country. This parent ministry has several parastatal bodies with specific responsibilities formed to regulate transportation and facilitate efficient delivery of transport services in the country. Such bodies include Kenya Railways Corporation, Kenya Ports Authority, Transport Licensing Board (TLB), and Kenya Ferry Services (KFS).

The Government believes in diversifying transport services to provide multiple choices to different consumers for both goods and passengers. This is due to recognition of the advantages and limitations offered by different modes. In view of this, the government licences various agencies to offer transport services to supplement formal transport. Informally self-regulatory groups such as *Matatu* associations are allowed to provide regulatory services to the transport industry.

Despite these concerns Government policies on transport have been quite ineffective in ensuring adequacy, efficiency, and effective coverage of transport services in the country. The policies are diverse and lack the capacity to spur socio-economic transformation. Kwale District/Mombasa Mainland South is served by three modes of transport: air, water and land-based transport systems. Land transport constitutes the most popular form of transport providing the necessary services for goods and passengers.

Air transport is restricted in usage and provides vital services to the tourism industry and private services while water transport provides the main link between Kwale District and Mombasa Island.

b) Road Transport

Road Transport is the most popular system of transport, providing transport to both goods and passengers. *Matatus*, bicycles and pedestrian movement constitute the bulk of the road transport. The last two systems, though pervasive, cannot be adequately quantified.

Two major roads, Likoni-Lunga-lunga international track road class A4 and Mombasa Nairobi Highway class A 109, serve the region. Other roads that are tarmacked are the Kombani and Kwale C 106. The rest of the roads are inaccessible during the rainy season. The road network is concentrated mainly on the eastern parts, including the Coastal Strip, of the region while the rest of the region has no road network.

Class	Length (Km)	Areas Served	Type
A 14	100 km	Likoni – Lunga-lunga – paved	paved
A 109	82 km	Maji ya Chumvi – Mackinnon Road – paved	paved
C 106	18 km	Kombani – Kwale Town – paved	paved
C 106	83 km	Kwale Town – Kinango – Lunga-lunga - Gravel	gravel
C 107	42 km	Kinango-Mariakani - Gravel	gravel

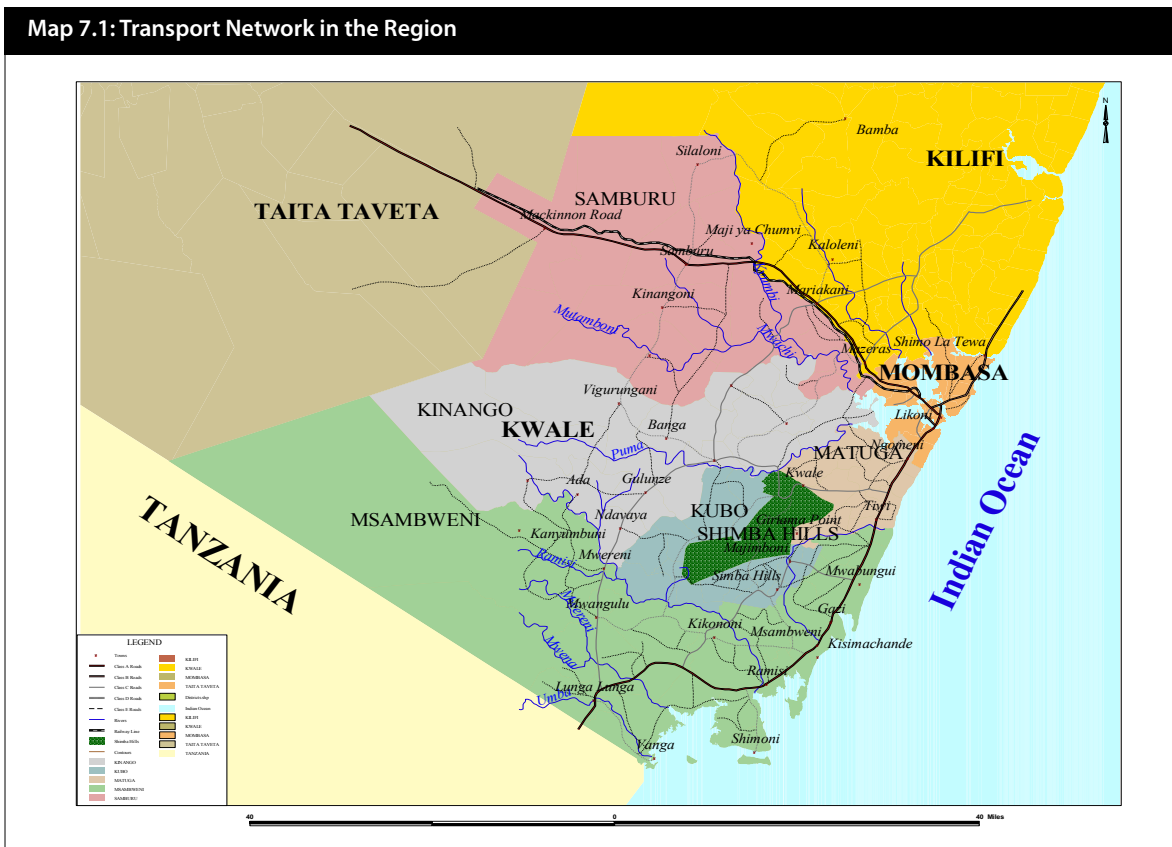
Source: District Works Office, Kwale, 2003

Type	Length (Km)	Percentage Coverage	Condition
Paved	200 km	7.4%	Good
Gravel	300 km	11.1%	Poor
Earth	2,200 km	81.5%	Poor
Total	2,700 km	100%	-

Source: District Works Office, Kwale, 2003



Source: Physical Planning Department, 2004



Source: District Works Office, Kwale, 2003

The Mombasa Mainland South-Kwale region has a classified road network of 1,400 kilometers categorized as paved 200 (km), gravel 300 (km), and earth 900 (km).

In addition, the region has a total road network classified as Class E, covering some 1000 km. Together with the rural access roads under the Minor Roads Programme, which cover about 300 km, the region has a total road network of 2,700 km. However, apart from the paved 200 km, about 90% of the roads are poorly maintained and are perennially impassable during rainy seasons.

The poor road conditions hinder the growth of agriculture in the predominantly agricultural region and hamper the transportation of fish to the markets, resulting in great losses. Over 90% of the road network is in poor condition.

c) Airports and Airstrips

The region is served by the following airtrips: Ukunda, Shimba Hills, Mackinnon Road, Lunga-lunga, Wasini and Funzi inslands. These airstrips promote tourism activities along the South Coastal region, enhance sanity of local and international tourists and provide space for emergency landing. Table 7.3 shows locations of the airstrips, their management, status, area and number of passengers handled. Air transport is fairly developed. The region boasts of six airstrips. The airstrips contribute to the growth of the tourism sector, which contributes significantly to the economic growth of the region. The airstrips are, however, constrained by the problem of poor road network, encroachment which causes security and safety problems, and lack of space for expansion.

Location	Management	Remarks
Ukunda	Kenya Airports Authority	40 Ha, 1.2 km wide Functional way Tourism industry 1300 passengers per day paired
Shimba Hills	Kenya Wildlife Services	Functional
Lunga-lunga	Kenya Airports Authority	Poor maintenance 50 passengers per day
Mariakani	Kenya Wildlife Services	Functional
Wasini	–	Poor maintenance

Source: Kenya Airports Authority, Diani Airstrip, 2004

i. Ukunda Airstrip

This is the largest and is managed by the Kenya Airports Authority (KAA). It is located on a 40 ha piece of land which has been under constant threat of encroachment. The Ukunda airstrip plays an important role with regard to the tourist activities in the region. The strip receives about 10 aircraft daily, including a daily schedule flight by Kenya Airways. The average daily passenger volume is 150. There is a 24-hour security from the tourist police unit. The airstrip has basic fire fighting equipment and is fenced.

ii. Other Airstrips

These include a KWS-managed airstrip by Kwale airstrip (which is used mainly by smaller aircraft from the KWS) and Funzi Island airstrip which is privately owned. All the four airstrips mainly handle passengers. In order to achieve a balanced development of the region the airstrip at Lunga-lunga needs to be expanded to a fully fledged airport so that the tourists can land there directly. Lunga-lunga is favourable because it has land for expansion.

d) Pipeline Transport

The National Oil Pipeline enters the region at Mazeras and exits at Mackinnon Road. The pipeline is managed by the Kenya Pipeline Corporation. There is a pumping station at Matope employing about 20 people. This station has staff houses with facilities such as water and power but its impact to the surrounding region is minimal.

e) **Water Transport**

Water transport in the region is not adequately developed. There is need for this type of transport to be developed to cater for connection with neighbouring nations that share the Indian Ocean waters with Kenya as well as within the Kenyan coast. There is therefore great potential in this type of transport that if developed can immensely benefit the region and Kenya.

i. **Ports and Harbors**

The Kenya Ports Authority was formed in 1978 through an Act of Parliament (CAP 391). The Authority's mandate is to maintain, operate, improve and regulate all scheduled sea ports situated along Kenya's coast. These comprise Mombasa, Funzi, Kilifi, Kiunga, Lamu, Malindi, Mtwapa, Shimoni and Vanga. Mombasa, the largest and busiest port on the East African coast, is the hub of KPA's operations. It is a major port of call for international shipping lines and serves the whole of the Great Lakes Region and parts of the Horn of Africa. From Table 7.4 it is evident that Mombasa port trade has been growing. During the year 2000 and 2004 overall port trade grew by 34 per cent. While domestic trade grew by 24 per cent, transit trade expanded by 71 per cent. This shows that more countries are using Mombasa port as their port of preference to import their goods.

Year	2000	2001	2002	2003	2004
Domestic	7,476	8,180	8,009	8,874	9,279
Transit	1,454	2,117	2,215	2,452	2,488
T/ment	196	303	340	605	469
Total	9,126	10,600	10,564	11,931	12,236

Source: Kenya Ports Authority, 2004

The above growth necessitates expansion of Kenyan ports. Possible expansion of the port facilities can be done within the region. Likoni (Dongo-Kundu) is earmarked by KPA as the future expansion area of the Kilindini port. This will only be possible if the Dongo-Kundu by-pass and railway line construction is implemented. The Kenya Ports Authority (KPA) operations within Kwale District are at Shimoni and Vanga ports. These are basically social infrastructure ports that serve traffic between the Kenyan coast and the Indian Ocean islands. Main vessels that call at these ports are schooners and dhows carrying fish, coconuts, cement, cassava and mangrove poles. Of the two ports in Kwale District, Shimoni is the most ideal site for a new port construction.

The revenue generated by local port activities in the region has declining (Table 7.5). This decline can be explained by existence of numerous other undesignated small ports in the district that serve as inlets for those who want to avoid paying duties. There is room for improvement if proper mechanism is put in place.

The Kenya Ports Authority has a social corporate section that ploughs back its profits to the local people. As part of its corporate social responsibility portfolio, the authority has assisted in the construction of classrooms in a number of schools in Kwale. Some of the schools assisted include Vwivwini Primary School, Jego, Msambweni and Mtongwe Girls Secondary Schools.

Year	2001	2002	2003
Revenue (kshs)	441,539	5,080,000	322,950

Source: Kenya Ports Authority, 2004

ii. *Ferry Services*

Ferry services are only offered at Likoni and Mtongwe crossing by the Kenya Ferry Services. While Likoni ferry caters for both vehicle and human traffic, the Mtongwe ferry is for human traffic only. There are other areas in the region that require ferry services. These areas are Tsunza-Miritini, Shimoni-Wasini, Shimoni-Vanga and Bodo-Funzi-Msambweni. Provision of these services to these areas would open them up to effective communication and, ultimately, development. The body offering these services is faced with the following challenges below.

f) Challenges, Opportunities and Possible Solutions

i. *Challenges*

- Commercial sustainability of ferries;
- Inadequate ferry services;
- Narrow ramp approaches and pedestrian walkways; and
- Commercial viability versus social obligation of ferry services.

The Kenya ferry Services has the following opportunities despite the above challenges.

ii. *Opportunities*

- Ferries for hire;
- Ferries for advertisements;
- Monopoly; and
- Untapped market for expansion.

iii. *Possible Solutions to Alleviate Congestion*

These solutions apply to Likoni and Mtongwe ferries and the Mombasa-Lunga-lunga and Mombasa-Mariakani roads:

- Construction of the Dongo-Kundu by-pass to relieve the ferry of congestion and reduce travel time caused by delays at the ferry;
- Development of a dual carriage between Likoni and Lunga-lunga, and Mombasa and Mariakani;
- Make the Mtongwe ferry operate full time throughout the week;
- Construction of jetties at Tsunza and Mkupe, and provide ferry services to enhance connectivity between Tsunza and Miritini;
- Construct a bridge at Muache to link Lutsangani and Mwamdudu (Mazeras); and
- Replacement of existing fleet of ferries with new ones at the Likoni crossing.

7.3.2 Communication

This section assesses the means of communication in the area. These are telephone services, postal, cell phone services, courier services, newspaper, and radio and television coverage.

a) Telecommunication Services

Telephone (and postal) services are available at Likoni, Kwale, Msambweni, Kinango, Ukunda, Shimba Hills, Lunga-lunga, Vanga, Kikoneni, Shimoni, Lukore, Diani and Tiwi. Other areas are Mackinnon Road and Samburu.

The exchange capacity in the region is approximately 12,000 but only 20% of the capacity is being utilized (2400 lines). The region is served with manual and automatic exchange facilities. The concentration areas are those along the Likoni-Lunga-lunga highway and the beach (the lower coast). Table 7.6 clearly shows this picture.

The areas served with automatic exchange services include Likoni, Kwale, Tiwi, Msambweni, Diani and Shimoni. Other areas have manual exchanges and include Lunga-lunga, Vanga, Kikoneni, Lukore and Kinango, Samburu and Mackinnon Road.

Table 7.6: Location of Exchange Capacity and Connection			
Exchange	Capacity	Connection	Percentage
Kwale	200	146	73
Msambweni	300	89	29.6
Diani	10,000	1,236	12.3
Tiwi	300	181	60.3
Rural**	430	140	32.5
Total	11,230	1,792	16

Source: Telkom (Kenya) Mombasa, 2003

Telkom Kenya, the main provider of telecommunication services, has commissioned the Huawei Technology of China to cover the whole of the South Coast to wireless systems that were expected to have taken place by end of September 2003. At the same time, line plant distribution network was to be expanded to Diani, Tiwi and Msambweni areas during the same period. Tiwi and Msambweni exchange have been replaced by remote switching units (Digital Switching Unit) from Diani. However, due to the poverty of local people the telephone density is very low.

b) Postal Services

Postal services are available at Likoni, Ukunda, Diani, Kwale, Kinango, Msambweni, Lunga-lunga, Shimba Hills, Mtongwe, Mackinnon road, Samburu, Shimoni, Vanga and Kikoneni. Ukunda, Diani, Kwale, Kinango, Msambweni, Lunga-lunga and Shimba Hills are departmental offices manned from Ukunda the regional (zonal) headquarters.

Mtongwe and Likoni offices are departmental offices manned from Mombasa while Shimoni, Vanga and Kikoneni are agency offices. Postal services are generally underutilized. The postal Corporation of Kenya, the main provider of postal services, has now opened an agency office at Matuga. There are plans to extend counter services to areas where the services are not available. Table 7.7 shows the distribution of postal services and their status in the region.

Diani and Ukunda post offices provide 80 per cent of the postal services in the region, while the rest of the offices are largely dormant providing only 20 per cent of the postal services.

c) Cell Phone Services

There are two cell phone providers in the region, namely Safaricom and Zain. Areas covered by the two network providers are Likoni, Kwale, Ukunda, Msambweni and most of the highway from Likoni to Lunga-lunga. The two network providers have about five base transmission sta-

Table 7.7: Postal Services		
Departmental	Agency	Manager
Likoni	Shimoni	Mombasa/Ukunda
Mtongwe	Vanga	"
Ukunda	Kikoneni	Ukunda/Ukunda
Diani		Ukunda
Kwale		"
Kinango		"
Msambweni		"
Shimba Hills		"
Lunga-lunga		"

Source: Postal Corporation of Kenya, Ukunda, 2003

tions (BTS) each in the region. Zain BTS has a network provision radius of 40 kilometres while those of Safaricom have a radius of between 25-30 kilometres. Both Safaricom and Zain have a customer density of 200 per/hr BTS.

d) Courier Services

In the region, Securicor services are available in Ukunda and Kwale. Matatu are used to deliver parcels within the region.

e) Radio, Television and Print Media

Radio, television and the print media are powerful tools for information dissemination, entertainment and education. In terms of radio, the region is well covered by K.B.C, Baraka F.M, Iqra FM and Pwani FM. Over 75 per cent of households in the region own radios, making it the most effective medium of communication. KTN, KBC, Citizen and Nation TV and other channels cover the area. Television coverage is mainly concentrated in urban centers. In terms newspapers the region is supplied by the Nation, the Standard, the Kenya times and Taifa Leo mainly in urban centers.

7.3.3 Water and Sanitation

Adequate quantity and quality of water is a basic requirement for development of a region owing to the fact that water is life. About 80 per cent of the water provided is disposed off as effluent, meaning that it should be accompanied by safe disposal of wastewater and environmental protection. In the region, about 33 per cent of the population has access to piped water while 30 per cent relies on 570 community boreholes and wells equipped with hand pumps. About 40 per cent of the population use water from unclean sources and are exposed to the risk of contracting waterborne diseases.

A. Water

1. Water Demand

Water demand for the region has been calculated assuming that human beings require 30, cattle 25, goats and sheep 5 litres/day. Water demand in the region was estimated at 26,000 m³/ day in the 2004 (Table 7.8). As the population of the region grows, so will be water demand. The absolute demand for the entire planning period is given in Table 7.9. A total of 99,759 m³/ day will be required by the year 2034.

Division	Human/Livestock population	Total m³/ day
Matuga	125,199	802.61
Msambweni	436,911	8,621.86
Kinango	423,098	6,276.01
Samburu	397,290	6,784.59
Kubo	2,346.28	3,528.61
Total Demand	16,171.26	26,013.68

Source: Physical Planning Department Data Analysis, 2004

Year/Div.	2004	2009	2014	2019	2024	2029	2034
Kinango	5,323	6,052	6,881	7,823	8894	10,112	11,497
Samburu	6,726	7,647	6,894	9,949	11238	12,777	14,527
Matuga	5,359	6,092	6,732	7,875	8,954	10,180	11,574
Kubo	3,604	4,098	4,659	5,296	6,022	6,847	7,784
Msambweni	15,653	17,797	22,340	23,004	26,155	29,736	33,809
Likoni	7,119	8,496	10,139	12,100	14,440	17,234	20,568
Total	43,784	50,182	57,339	66,047	75,703	86,886	99,759

Source: Data Analysis 2004

2. Water Supply

The current water demand against supply gives the district a water deficit of 14,000 m³/day. The demand is about 26000m³/day where as the supply is about 12,000m³/day (Table 7.9).

Table 7.10 also portrays the various sources and their yields per day. Some of these sources are discussed below.

Division/Source	Earth Dam M3/ Day	Roof Catchment M ³ / Day	Boreholes M3/ Day	Pipelines M3 / Day	Total amount (m ³ /day)
Matuga	-	150	1,200	800	2,150
Msambweni	1,000	200	1,500	600	3,300
Kinango	1,500	120	150	50	1,820
Samburu	1,200	100	150	1,300	2,750
Kubo	-	50	120	1,600	1,770
Total	3,700	620	3,120	4,350	11,790

Source: Provincial Water Office, Mombasa, 2003

3. Piped Water

There are 26 large-scale water supply schemes in the region. These comprise 22 rural and four urban water supply schemes that are managed by the Coast Water Services Board (CWSB). Piped water in the region is sourced from boreholes, wells, rivers, springs and pans. The urban water supply schemes serve Likoni, Kwale, Kinango, Matuga and Diani. The schemes are, however, overutilized since demand exceeds supply. About six of the piped water schemes have since collapsed, leaving only 20 in operation. Only 25 per cent of the population in the region has access to piped water.

Table 7.11 indicates that Marere pipeline, Msambweni well and Lunga-lunga borehole are abstracting less than a quarter of the existing potential. This means the abstraction capacity can be enhanced to reduce water problems in the region.

Towns such as Samburu, Taru, Mackinnon Road, Mariakani, Mazeras and Samburu including Sailoni are served by pipeline from Mzima spring.

Source	Out put m ³ /day	Potential m ³	Type of Scheme
Marere Pipe Line Source – spring	500	9,087	Mombasa – Urban Kwale – Urban Kinango – Rural Likoni – Urban
Msambweni (Protected) (Source well) well	280	700	Msambweni – Rural and Urban
Lunga-lunga (Borehole) Source borehole	80	208	Rural (Lunga-lunga & Border Post)
Chuini (Borehole) Source Borehole	20	-	Rural – Vanga
Mkongani (Collapsed)	80	-	Vanga – Rural
Ndavaya (Borehole)	45	-	Rural – Ndavaya area
Tiwi (Borehole)	No data		Ukunda – Urban Likoni

Source: Provincial Water Office, Mombasa, 2003

4. Boreholes

Boreholes are a major source of water, mainly for domestic use in the region. Each borehole can supply water to about 200 people. With a total of 361 functional boreholes in the region a total of 72,200 people rely on this source for their water needs.

Unfortunately, most of the boreholes in the region are in a pathetic condition poor maintenance, and general deterioration. Out of 361 functional boreholes, communities manage 318. Those that are maintained by institutions like schools, health centres and police are well maintained. Areas with most boreholes that are not functioning are Tiwi, Waa and Msambweni. Table 7.12 shows the status of boreholes. Table 7.13 indicates that Msambweni, Diani and Kinondo have the highest number of boreholes. It further indicates that in Kinondo about half of the boreholes are not functional. The unfunctioning boreholes show that there is lack of managerial skill from the local community. These boreholes should be revitalized and the local community trained on their management.

5. Dams

Dams comprise the single most important source of water to the rural community in the region both for human and animals. There are a total of 76 dams in the region distributed in Kinango, Msambweni and Samburu Divisions as shown in Map 7.2.

Table 7.12: Status of Boreholes

Time	Total visited	Functional	Not functional
1995	524	386	138
1997	524	457	67
2003	526	361	161

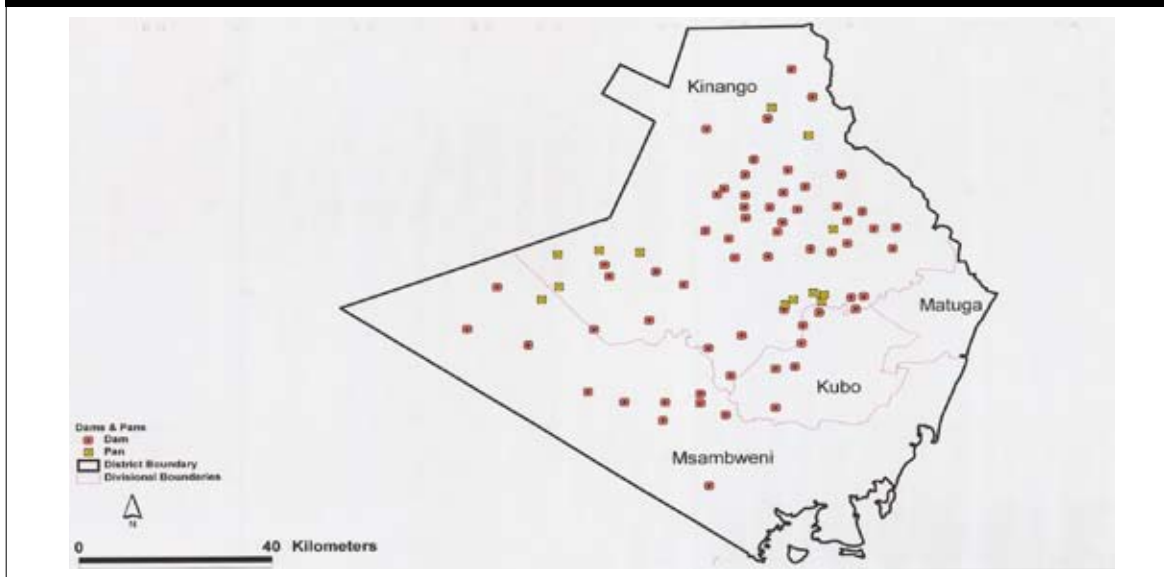
Source: Provincial Water Office, Mombasa, 2003.

Table 7.13: Distribution of Boreholes by Location

Location	Total	Functional	Non Functional
Kikoneni	67	55	12
Msambweni	142	110	32
Diani	83	61	22
Puma	6	2	4
Ng'ombeni	14	10	4
Lukore	17	11	6
Waa	23	10	13
Pongwe	26	12	14
Kinondo	80	55	25
Tiwi	37	20	17
Tsimba	4	2	2
Mwereni	3	3	-
Ndavaya	2	-	2
Lunga-lunga	15	9	6
Mkongani	4	1	3
Mwaluphamba	2	-	2
Kinango	1	-	1
Total	526	361	165

Source: Provincial Water Office, Mombasa, 2003

Map 7.2: Distribution of Dams in Kwale District



Source: District Water Office, Kwale

Table 7.14 indicates that Kinango has the highest number of dams (37) while Samburu division has the second largest number of dams (23). The total capacity for Kinango and Samburu is 210,500 m³ and 147,300m³, respectively. Notably these are the driest and remotest parts of the region where piped water is not available.

Table 7.14: Dams and their capacities

Division	No. Of Dams		Capacity (m ³)
		Potential	
Kinango	37		210,500
Samburu	23		147,300
Msambweni	7		45,000
Kubo	6		85,500
Puma	3		7,600
Total	76	1,386,930	495,900 m³

Source: D.W.O. (Water) Kwale, 2003

Plate 7.2: Water Storage Facility at Mtaa Dam — Kinango



Source: Physical Planning Department, 2004

The availability and usage of water varies in different parts of the region because of diverse environmental conditions. Water supply along the coast and pediment area is more reliable because there is more rain than in the hinterland where water is scarce. Springs, rivers and 'djabias' are important sources of water in the pediment and coastal areas while the hinterland relies mostly on dams, pans and rock catchments. In Samburu and Kinango, water is scarce compared to other parts of the region. In these areas development of ground water sources is hindered by low water tables, saline formation, complicated and hard underlying rocks. The northern part of the hinterland, however, benefits from standpipes and kiosks from the hinterland water schemes.

The district has a total of 26 existing large-scale water supply schemes. These comprise 22 rural water supply schemes and four urban water supply schemes. The Management of these water schemes is either under the Ministry of Water Resources, the National Water Conservation and Pipeline Corporation or the community

6. *Other Sources of Water*

A sizable population of the region use wells, rivers, pans or rock catchments. Other sources are *Djabias*, roof catchments, ferro cement tanks or unprotected springs. There is need to identify and conserve these sources for the region to be self-sufficient in water supply.

a) *Springs*

There are about 72 protected springs in the region each serving 500 people. A few of the springs are not functional (8.3%). Table 7.15 indicates that Msambweni has the highest number of protected springs followed by Kinondo. Protection and conservation of these water sources is very important. This will guide them from drying.

Location	Total	Used	Not being used
Kikoneni	7	7	-
Msambweni	32	29	3
Lukore	9	8	1
Kinondo	15	14	1
Majimboni	5	5	-
Tsimba	4	3	1
Total	72	66	6

Source: Provincial Water Office, Mombasa, 2003



Source: Physical Planning Department, 2004

b) *Roof Catchments*

Table 7.16 shows that roof catchment facilities are minimal in the region with Samburu recording the highest with 10. This may imply that either the residents are not aware of the benefits of roof catchment and there is, need for sensitization of the local community.

As housing conditions in the rural area of the region improve from temporary to permanent with iron sheets as roofing material, the local community needs to be sensitized to embrace roof water catchment as a way of water storage instead of depending on the usual sources.

Table 7.16: Roof Catchment by Location 2004			
Location	Total	Functional	Not functional
Lunga-lunga	7	6	1
Kinondo	1	1	-
Mwereni	9	7	2
Ndavaya	5	4	1
Puma	6	1	5
Kinango	4	1	3
Samburu (South)	10	4	6
Majimboni	3	2	1
Mkongani	2	2	-
Lukore	2	2	-
Matuga	1	1	-
Mwavumbo	3	2	1
Tsimba	3	3	-
Kasemeni	1	1	-
Vigurungani	5	1	4
Makamini	-	-	-
Gandini	2	2	-
Kikoneni	2	2	-
Msambweni	2	2	-
Total	69	43	26

Source: Provincial Water Office, Mombasa, 2003

B. *Sanitation*

To safeguard against environmental degradation in the region, more so the urban settlements, sanitation facility development is important. All the towns in the region lack sanitation facilities.

i. *Sewerage*

The sewerage disposal in all the urban centers is through septic tanks and pit latrines. In the rural areas, pit latrines are used but the most common method is open disposal (bush). In the towns, the methods used limit density concentrations while in the rural areas the common method used leads to environmental pollution. There is, therefore, need to develop proper sewerage systems in the urban and rural areas.

ii. *Solid Waste Management*

There are no proper plans for solid waste management in all the urban areas. There are no designated dumping sites in the region. In Ukunda solid waste dumping is done in the Ramisi Farm near Mwabungo which is private land. In Likoni, dumping is done in the old quarries about two kilometers to the coastal line. In the other areas, solid waste is managed through burning. These methods of solid waste management may lead to groundwater pollution as the soils are pervious. There is, therefore, need for property designated solid waste management dumps and solid waste management to safeguard against environmental degradation.

- iii. *Storm Water Drainage*
All the urban centers lack any of these drainage facilities. There is, therefore, need to provide for them.
- iv. *Sanitation and Solid Waste Disposal Actions*
There is need to zone a specific area for solid waste management and sanitation. Adoption of new and appropriate technology such as land fueling rather than open dumping is essential. Mombasa also urgently needs a waste management site.

7.3.4 Education

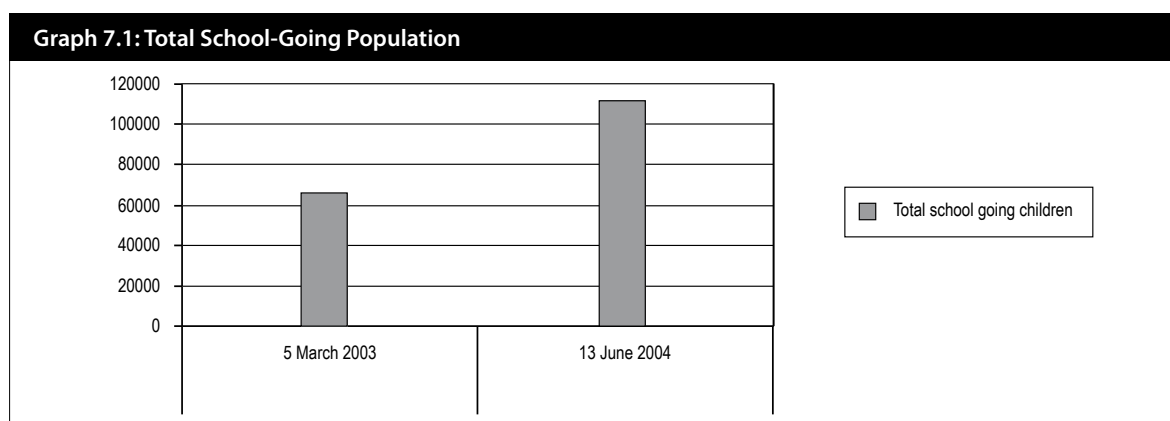
Education plays an important role in the development of people by empowering them to improve their well being and participate actively in nation building. At the national level, the broad objective is to achieve 100 % net primary school enrolment rate and reduce the disparity in access and quality of education. This is inline with the Millennium Development Goal 2 of ensuring that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.

a) *Primary School Education*

In 2003 about half of the school-going population was not enrolled in any school. This is attributed to the fees charged, distance and attitude towards education. This accounted for 15.4%. In order to meet the Millennium Development Goal 2, free primary education needs to be sustained (Table 7.17).

Year	Age	Total School Going Population	Enrolment	Shortfall	%
2003	3-5	66,201	27,619	38,582	58
2004	6-13	110,891	127,985	17,094	15.4

Source: District Education officer, 2004



Source: District Education office, 2004

b) *Secondary School Education*

There is underenrolment in the secondary schools and this can be explained by existence of private schools and national schools, early marriage and pregnancy, child labour, requirement to pay school fees, and poor performance.

c) *Existing and Proposed Primary and Secondary Schools*

The existing primary schools are adequate for the divisions except Likoni and Matuga. In the year 2004, existing primary schools were more than the required number by 139 schools. While the required number was 168, there were 299 primary schools in 2004. Likoni is exceptional; it required 27 primary schools (as per 2004) but only 14 schools were available. This calls for more primary schools (13) to be built in Likoni Division. Matuga has only four existing primary schools (as per 2003 records) which is very low. The current number required in the division is 21. Some divisions like Kinango and Kubo do not require additional primary schools for the 30-year period. The projections show that the existing ones are adequate for the period. Samburu and Msambweni Divisions require additional primary schools but this addition is to be done after 15 years.

Institution	Year	Samburu	Kinango	Matuga	Kubo	Msambweni	Likoni	Total
Pre- Primary Schools	2004/2005	N/A	N/A	N/A	N/A	N/A	48	48
Primary Schools	"	47	49	47	34	108	14	299
Secondary Schools	"	6	2	9	5	9	3	34
Youth Polytechnics	"	2	2	-	2	1	1	8
Other Training Institutions	"	-	-	3	-	-	-	3

Source: District Education Office, Kwale, 2005

Year	Population	Catchment	Schools Required	Existing	Shortfall
2003	673,588	8,000	84	33	51

Source: Physical Planning Department Data Analysis, 2004

YEAR	DIVISIONS						TOTALS
	Kinango	Samburu	Matuga	Kubo	Msambweni	Likoni	
2004	20	26	21	14	60	27	168
2009	23	29	23	16	68	33	192
2014	26	33	27	18	79	39	222
2019	30	38	30	20	84	47	249
2024	34	43	34	23	101	55	290
2029	39	49	39	26	114	66	333
2034	44	55	45	30	130	79	383

Source: Physical Planning Department Data Analysis, 2004

i *Primary Schools*

Table 7.20 shows the absolute number of primary schools required for the 30-year plan period. The existing primary schools are 299; therefore the total number of primary schools required by 2034 is 383 schools. Table 7.18 shows that Msambweni Division has most primary schools. This can be attributed to the fact that the division has the highest concentration of population in the district. There are few post-secondary training institutions, implying that more people have to seek such training outside the region.

ii *Secondary Schools*

The number of existing secondary schools in the region is outstripped by demand. The number of secondary schools per division is very low making it necessary to have more secondary schools.

The total number of secondary schools required (as per 2004) are 84 whereas the existing ones are 33. The number required for the 30-year period is 192. The existing being 33 then the required additional ones for the period are 159. When the deficit is resolved, the average additional number of secondary schools after five years is 2, 3, 2, 1, 6, and 5 for Kinango, Samburu, Matuga, Kubo, Msambweni and Likoni, respectively. This trend will ensure that the region's demand for secondary schools is met. The projected number of secondary schools for the 30-year plan period is given in Table 7.20. It also reflects the absolute number required after every five years up to 2034. In the year 2004 the region had 33 secondary schools. The additional number required for the 30-year plan period is 159 secondary schools.

Table 7.21: Demand for Secondary Schools

Year	Divisions						Total
	Kinango	Samburu	Matuga	Kubo	Msambweni	Likoni	
2004	10	13	10	7	30	14	84
2009	11	15	11	8	34	16	95
2014	13	17	13	9	39	19	110
2019	15	19	15	10	44	23	126
2024	17	22	17	12	50	28	146
2029	19	25	20	13	57	33	167
2034	22	28	22	15	65	40	192

Source: Physical Planning Department Field Data Analysis, 2004

d) Youth Polytechnics and Tertiary Institutions

Table 7.18 indicates that there is inadequate provision of youth polytechnics and other tertiary institutions, meaning that the primary and secondary school dropouts are not adequately catered for resulting in wastage of human resources and lack of skilled labour force.

7.3.5 Health

Health is a very crucial component in any development process and its importance, therefore, cannot be underestimated. Health determines, among many other things, the level of productivity of the population, living standards and, consequently, the level of development. Thus, it is an issue everyone should be conscious of and for which to strive and come up with strategies to ensure good health that will lead to development. The region has 77 health facilities, with Likoni Division having eight (Table 7.22). Kwale District has one district hospital located in Msambweni and two sub-district hospitals located in Kinango and Kwale towns.

Table 7.22: Distribution of Health Facilities by Division and Category

Division	Hospital	Health care	Dispensaries	Other Clinics
Samburu	-	1	9	1
Kinango	1	-	7	1
Matuga	1	1	7	2
Kubo	-	1	7	-
Msambweni	2	2	16	9
Likoni	-	1	6	1
Total	4	6	52	15

Source: District Medical Officer of Health, Kwale, 2004

The average distance to the nearest health facility is 30 km which is way off compared to the national standard which is 5 km. In the year 2004, the doctor-patient ratio was 1:64330. Records also show that HIV/AIDS prevalence is 7.1 per cent with Matuga recording the highest prevalence of 18 per cent, and Kinango recording the lowest HIV/AIDS prevalence. Equally important is the data on birth assistance which shows that only 15 per cent of births are health-practitioner assisted.

7.3.5.1 Prevalent Diseases and their Distribution

Malaria has the highest prevalence in the region causing 42 per cent of the deaths. Pneumonia and respiratory diseases second malaria with the latter being common in the rural areas, particularly the drier areas of Samburu and Kinango. Skin diseases cause 7 per cent of the deaths while the fourth cause of 4 per cent deaths are Diarrhoea and intestinal worms which are mainly caused by shallow wells and contaminated swamps, and mostly affect rural communities. Anaemia and Urinary tract infections are the reason for 3 per cent of deaths. Accidents are the least cause. HIV/AIDS mostly affects the urban population.

Table 7.23: Ranking of Diseases that Cause Death

Ranking	Diseases	% of death
1	Malaria	42
2	Pneumonia	21
3	Respiratory Diseases	20
4	Skin Diseases	7
5	Diarrhea	4
6	Intestinal worms	4
7	Anemia	3
8	Urinary Track Infections	3
9	Accidents	1

Source: District Medical Officer of Health, Kwale, 2004

7.3.6 Security Facilities

The importance of security in development cannot be underestimated especially in this region where tourism is a major driver of the economy. The security facilities are mainly concentrated along the main transport corridors and urban centres, leaving the interior underserved, especially the Nyika plateau. There is a need, therefore, to put up more facilities such as police patrol bases, posts and booths, especially in the interior to enhance development. In addition there are two tourist police units in the region at Ukunda.

Table 7.24: Number of Security Facilities

Type	Number	Location
Police booth	3	Tiwi
Police Patrol Base	3	Jego
Police Post	5	Mtongwe, Taru, Shimoni
Police Station	6	Likoni, Kwale, Diani, Msambweni, Kinango, LungaLunga
Private Security	2	
Prison	1	Kwale
Others – G.S.U	1 Camp	Mackinnon Road
Navy	1	Mtongwe

Source: Officer Commanding Police Division, Kwale, 2003

Table 7.25: Distribution of Security Facilities by Division

Division	Police Booth	Police Base	Police Post	Police Station	Others
Likoni	2		1	1	1 Navy (Mtongwe)
Matuga	1 (Kenol)	1		1	1 Prison (Kwale)
Kubo			1		-
Kinango				1	-
Msambweni		1	2	3	2 Wells Fargo & Securicor)
Samburu		1	2	10	1 G.S.U. Camp (Mackinnon Road)
Total	1	3	5	6	5

Source: District Medical Officer of Health, Kwale, 2004

7.3.7 Energy

Energy plays a critical role in the development of a region. The current energy policy objective emphasizes the need for its availability and accessibility at cost-effective prices and in support of sustainable socio-economic development while protecting and conserving the environment. In the region, the major sources of energy are electricity, petroleum products; and wood fuel. The region has potential for solar and wind energy, especially in the Indian Ocean, Samburu and Kinango. There exists biogas along the coastal strip. This potential has, however, not been exploited.

a) *Petrol Stations*

Petroleum is used mainly in the transport industry and for powering water pumps and generators. Kerosene is the main source of lighting in rural and urban areas. It is also used for cooking in both urban and rural areas. Distribution of petrol service stations shows that all of them save for Kinango are concentrated on the Mombasa – Lunga-lunga highway (Table 7.26).

Likoni	6
Ukunda	5
Lunga-lunga	1
Tiwi	1
Kwale	1
Kinango	1

Source: Physical Planning Department Field Data Survey, 2004

b) *Electricity/Power*

Electricity in the region is sourced mainly from the national grid line. Areas currently supplied with electricity in the region include Likoni, Ukunda, Diani, Kwale (town), Tiwi, Msambweni, Shimoni and Kinango, with the main concentration areas being Likoni and Ukunda.

The region had a customer base of approximately 8,000 people out of the total 673,000 in 2004 and a monthly connection of 40 people. Only 1 per cent of the region's population use electricity. However, through the Rural Electrification Programme, electricity has been supplied to Kinondo, Ramisi and Makongeni. Currently supply is reliable though inadequate (power disruptions- unreliability). The selective supply of electricity in the region has resulted in slow growth of small and medium size industrial establishments. Industrialists are, however, being forced to use more fuel products since they have no alternatives. This often pushes up production costs.

c) *Wood fuel*

This is the main source of energy in the rural areas used mainly for cooking. This poses a danger of forest depletion and contravenes the Government ban on logging. Charcoal and firewood usage has led to destruction of trees, especially in Kinango, Samburu and Shimba Hills.

d) *Wind energy*

The region has high potential for wind energy given the fact that it has a 255 km coastal strip and a 200 nautical-mile of ocean. This type of energy has not been exploited at all. If exploited, the region can produce wind energy for its needs and for export.

e) *Sun energy*

The Nyika Plateau is another possible source of energy. The region experiences sunshine throughout the year. This potential should, therefore, be tapped to help subsidize traditional sources of energy especially in the domestic and commercial sectors.

f) Hydro-carbons (Oil)

The coastal and the 200 nautical-mile zone is a candidate for oil prospecting. Thus there is possibility that the zone has oil. Rigorous prospecting should therefore be done. This is one resource that can turn around the region's economy.

g) Bio-gas

Another potential source of energy is bio-gas. This form of energy is suitable for domestic, among other uses. There is need to explore its potential in the region in terms of the source of raw materials and the requisite technology. The livestock in the region can serve as a ready source for the raw material needed.

7.4 INFRASTRUCTURE AND SOCIAL SERVICES: OPORTUNITIES AND CHALLENGES

7.4.1 Opportunities

a) Road Transport

- Terrain is suitable for road development (construction);
- Availability of building materials;
- Cheap labour for road construction; and
- Various funds e.g. CDF, LATF, fuel levy, rural access roads (Roads 2000).

b) Railway

- Favourable terrain for railway expansion;
- Existence of minerals and possibility of second port (Shimoni) provides an opportunity to connect Mombasa Uganda Railway through the region to Shimoni; and
- Possibility of alternative route for transportation of goods and people to the South Coast.

c) Water Transport

i. Ferries

- Hire of ferries for leisure programmes not fully utilized;
- Use of ferries for commercial advertising and as educative devices;
- Monopoly of entire market; and
- Ferry services between Likoni-Mshomoroni and Mtwapa to decongest the existing ferry services along the channel.

ii. Ports

- Monopoly in cargo handling in the region;
- Room for expansion Dongo-Kundu area, opening of new ports e.g. Shimoni;
- Strategic location;
- Natural harbour; and
- Availability of minerals, agricultural potential and fishing industry presents an opportunity for expansion.

d) Air Transport

- Potential for tourism industry in the region; and
- Existing potential for horticultural and other agro-based products.

e) Energy

- Existing potential for solar and wind energy;
- Potential for biogas exploration; and
- Development of energy saving technologies e.g. improved jikos.

f) Communication

i Telephone

- Room for expansion to the hinterland exchange capacity is 12,000; only 20% of this is being utilized.

- ii. Cell phone Services
 - Room for expansion.
- g) Water and Sanitation**
- i. Water
 - Unexploited water resources e.g. ground water, dams and boreholes. Fairly even distribution of dams in Kwale. Transport and social services tend to reinforce, and are also reinforced by, the infrastructure/social services-led development concept. A superimposition of the transport networks with other social services shows a trend of concentration on the coastal zone which declines as you move away towards the western side of the region.
 - ii. Sanitation
 - Creation of water and sewerage company to be in charge of water and sanitation services;
 - Availability of funds at the local level e.g. CDF, NGOs; and
 - Existence of urban centres that require sanitation services e.g. Kwale, Ukunda, Kinango, and Msambweni.
 - iii. Solid Waste Disposal
 - Use of youth groups/organized groups to engage in waste management; and
 - Recycling of the waste.
- h) Health**
- Upgrade Samburu Health Centre to a sub-district hospital;
 - The physical infrastructure is already in place and therefore, there is need to equip it;
 - Health facilities and personnel;
 - NGO support in provision e.g. DANIDA;
 - NGOs doing capacity building in preventive health care e.g. hygiene, counseling, VCT etc; and
 - Favourable Government policies e.g. subsidized user-fees Ksh 10 for dispensaries and Ksh 20 health centre, cheap mosquito nets.
- i) Recreation**
- Presence of sites of historical significance, beaches, expansive shoreline;
 - Untapped indigenous forms of recreation e.g. traditional dances, acrobats; and
 - Job creation in waste collection activities e.g. Paparazzi Group based in Ukunda.
- j) Education**
- Availability of funding. NGOs, CDA and CDF participation in putting up learning facilities;
 - Unemployed graduates from teacher training colleges and universities who can teach in primary and secondary schools;
 - Free primary education increase in enrolment/development funding from the government;
 - Establishment of private schools both primary and secondary to boost enrolment; and
 - Government has a chance to put up more schools since there is a shortfall in number of schools.
- k) Markets**
- Agriculture/livestock products available to sustain the markets. Handcrafts are also available e.g. mats; and
 - LATF funds can be used to improve the markets e.g. toilets, ferrying etc.
- l) Security**
- Improved security will ensure increase in investment in tourism industry, employment creation and faster development of urban centres.

7.4.2 Challenges

a) *Road Transport*

- i. Poor road conditions/network in the hinterland;
 - Class D Gandini-Shimba Hills area;
 - Class C Kwale-Lunga-lunga through Mwereni;
 - Kinango-Mariakani; and
 - Samburu-Kinagoni-Ada-Mwereni road.
- ii. Lack of adequate coverage to western side of the region e.g. Kinango and Msambweni divisions.
- iii. Blocked public access to the beaches as a result of private development.
- iv. Encroachment on road reserves e.g. Likoni area, Tiwi, Ukunda and along Mombasa road.

b) *Water Transport*

- i. Ferry
 - Lack of commercial sustainability of ferries;
 - Failure to satisfy increased demand for safe ferry services;
 - Reconciling KFSL commercial objectives with government social obligations;
 - Ramp approaches are narrow, causing delays; and
 - Narrow pedestrian walkways.
- ii. Ports
 - Lack of modern equipment and facilities for cargo handling e.g. cranes, tugboats, pilot boats etc;
 - High cost of development and maintenance of port infrastructure and facilities;
 - Delays/congestion due to elaborate clearance procedures; and
 - Competition from neighbouring ports.

c) *Air Transport*

- Inadequate facilities for cargo handling and passengers (Moi International Airport); and
- Lack of adequate land for expansion of Ukunda Airstrip (surrounded by developments).

d) *Energy*

- Insufficient power supply in the rural areas e.g. Mwangulu, Mwereni, Ndavaya, Vigurungani, Mwachi, Kinango etc;
- Destruction of vegetation Kinango, Samburu, Shimba Hills;
- Loss of biodiversity; and
- Undeveloped use of alternative sources of energy e.g. solar and wind.

e) *Communication*

- i. Telephone
 - Under threat of competition from cell phone services. (Fixed phone installations) as a result of inefficiency and limited coverage; and
 - Need to modernize technology in order to face the stiff competition.
- ii. Cell Phone Services
 - Inadequate coverage; and
 - Protection of the users from the effects of radiation.

f) *Water and Sanitation*

- i. Water
 - Inadequate water supply in areas such as Kinango, Samburu, Mwereni and Ndavaya;
 - Salinity of water especially ground water; and
 - Quality of water from springs, wells, bores is not known.

- ii Sanitation
 - Kwale district is not connected to a sewerage system/ parts of Likoni have septic tanks;
 - Use of septic tanks and pit latrines poses a danger to the quality of ground and surface water; and
 - Cost of initial installation is prohibitive.

- g) **Solid Waste Disposal**
 - Lack of designated dumping sites in Kwale/and Likoni;
 - Only Mwabungo serving Ukunda and Diani;
 - Lack of solid waste management due to open dumping at Mwabungo; and
 - Mwabungo site hardly used since it is far from area served.

- h) **Health Care**
 - Physical facilities inadequate e.g. Kwale Hospital lacks a theatre and an X-ray department;
 - Each health centre requires an ambulance. Only Tiwi Health Centre has an ambulance at the moment;
 - Lack of trained personnel;
 - Inadequacy of drugs in public health facilities;
 - Inaccessibility because of poor road network and low incomes/poverty;
 - Skewed distribution of health care facilities;
 - Health facilities are not adequate e.g. Mwereni, Nyango, Kasemeni, Mwakijembe. Mwereni is recommended for a health centre; and
 - Likoni will require a hospital by 2034.

- i) **Recreation**
 - Limited access to beaches by members of the public;
 - Lack of adequate stadium and playfields; and
 - Inadequate social halls e.g. Kinango, Ukunda, Msambweni, Samburu, Vanga, Lunga-lunga etc.

- j) **Education**
 - Inadequacy in number of schools at all levels e.g. nursery, primary and secondary;
 - Shortage of facilities, e.g. classrooms, laboratories, libraries, toilets, playing fields;
 - Low staffing levels;
 - Land requirements for expansion of schools not met; and
 - High dropout rate, especially for girls.

- k) **Markets**
 - Open air markets without sheds, public toilets or sanitation facilities;
 - Insecurity: goods are often lost through theft and cases of carjacking;
 - Poor roads network; and
 - High transport costs.

- l) **Security**
 - Inadequate in coverage in the interior e.g. Ndavaya, Vigurungani, Mwereni, Kikoneni, Tiribe, Shimoni, Vanga, Shimba Hills; and
 - Threat to tourism industry.

Institutional Framework

8.1 INTRODUCTION

Any form of development takes place as a result of deliberate efforts by societies and their institutions. Coordinated actions of various players, therefore, lead to the improvement of standards of living of any given community. The Government, being the main agent of development, has the responsibility to facilitate, co-ordinate and guide other agencies in realizing the desired level of development. The task of co-ordination is supported by a set of policies, strategies and legal instruments that direct other players in the development realization process.

8.2 LEGAL FRAMEWORK

Regional development planning takes place within clearly defined legal provisions. There are several Acts of Parliament that, although not properly co-coordinated, have a direct effect on regional development. The following are the main statutes.

8.2.1 The Physical Planning Act, Cap 286 of 1996

This statute stipulates the procedure for preparation of local and regional physical development plans. It aims at guiding and controlling development throughout the country. The Act avails the opportunity to most stakeholders in the planning process, thereby making the plans more acceptable. The main weakness of the Act is failure to specify who should prosecute persons violating the provisions of the Act. It, however, provides for conflict resolution for cases that may require to go to court.

8.2.2 The Local Government Act, Cap 265

It provides for the creation and management of local authorities, which are an important player in the development process. The main weakness of the Act is overconcentration of powers in the minister, and chief officers being answerable to the ministry and Public Service Commission as opposed to the local authority. Efforts are being made to review the Act to make the local authorities more autonomous.

8.2.3 The Environment Management and Coordination Act of 1999

This statute provides for the proper management of the environment. All harmful activities on land are made illegal by the Act, thereby making it possible to realize sustainable development. Due to its newness and given the various bodies and procedures introduced by the Act its impact has not been felt. It will therefore require great effort to implement the Act to realize the desired aims.

8.2.4 Other Sectoral Statutes

There are many other Acts of Parliament for various sectors of the national economy e.g. Forest Act, Cap 385, concerned with forest resource management, Land Control Act, Cap 302, dealing with agricultural land transactions, Public Health Act, concerned with hygiene of eating premises and other areas of human habitat and the Agriculture Act, dealing with crop production and farm management. Most of the statutes were enacted in the mid-1960s. Today's circumstances and level of development demand that most of them be reviewed. They are nevertheless relevant and have to be borne in mind in the regional plan preparation.

8.3 LOCAL AUTHORITIES

8.3.1 Mombasa Municipal Council

This is the largest local authority in the region. It covers the entire Mombasa District with an area of approximately 230 square kilometers. Likoni Division alone covers 51 km.sq. The council has a workforce of approximately 3,500 employees.

a) *Organizational Structure*

The mayor is the political head of the local authority, managing through committees. The Town Clerk is the chief executive. Currently there are eight departments (Table 8.1). A full council meeting has recently approved the creation of three new departments:

- a) Town Planning to be headed by Director of Town Planning;
- b) Inspectorate to be headed by Director of Inspectorate; and
- c) Water and Sewerage to be headed by Director of Water and Sewerage.

No.	Name of Department	Departmental Head
1.	Town Clerk's Department	Town Clerk
2.	Treasurer's Department	Municipal Treasurer
3.	Engineer's Department	Municipal Engineer
4.	Public Health Department	Medical Officer of Health
5.	Education Department	Municipal Education Officer
6.	Housing Development Department	Director of Housing Development
7.	Housing and Social Services Department	Director of Housing and Social Services
8.	Environment Department	Director of Environment

Source: Town Clerk Mombasa Municipal Council, 2004

b) *Source of Finance*

There are two sources of revenue to the council. These are internal and external sources.

i. Internal Revenue

Internal revenue sources from the council are licenses, parking rates, land rent and advertisements, among others. Initial revenue is used for personnel emoluments and other recurrent expenditure.

ii. External

Local Authority Transfer Fund (LATF). This is money issued by the central Government through the Ministry of Local Government. It is used exclusively for development. The development programmes are funded by LATF within the Local Authority Services Delivery Action Plan (LASDAP), formerly under Local Authority Development Plan (LADP). Disbursement and expenditure have to be approved by the minister, thereby occasioning delay in implementation.

The major development project the council intends to undertake in Likoni is development of a garbage dumping site.

8.3.2 Kwale Town Council

This is the only urban-based local authority in Kwale District. It covers 245 sq kms, although only about 2.5 sq. km is urbanized. The council has a workforce of 41.

a) Organizational Structure

The Chairman of the Kwale Town Council is the political head of the local government council. The Clerk of the Town Council is the chief executive and is assisted by the treasurer and several administrative officers. The council lacks any fully-fledged departments and lacks capacity to undertake the mandate of a local government of a town council.

b) Source of Finance

- i. External: LATF for development.
- ii. Internal Revenue: Rates, daily market collection, bus park, licenses, etc. This is used for personnel emoluments and other recurred expenditure. It is inadequate to cover all expenses. The council is undertaking are building of markets. The Mvindeneni market is about 30 per cent complete.

c) Main Issues

- Low revenue base; and
- Underutilization of personnel. Most staff are semi-or un-skilled while there are no professional staff.

8.3.3 Kwale County Council

It covers the entire Kwale District (8,050 sq. km) except the Town Council jurisdiction of 245 sq.km and has a staff strength of 191 employees.

a) Organizational Structure

The Chairman is the political head and the Clerk to the Council is the chief executive. The Kwale County Council local government has four departments: the Clerk's department, the Treasurer's department, Social Services, Education and Environment, and the Technical department.

b) Sources of Funds

- External LATF for development; and
- Internal Revenue: Licenses, cess and royalties, market and auction fees, land and housing rent, rates and slaughter houses. Revenue collected from these sources is used for personnel emoluments and other recurrent expenditure.

c) Programmes/Projects for the Financial Year 2004/2005

- Bus Park at Ukunda;
- Rehabilitation of auction rings at Kinango and Mwangulu;
- Public toilets at Mvindeneni and Kombani;
- Water reservoir at Wasini; and
- Purchase of vehicle for revenue collection.

8.4 PARASTATALS AND REGIONAL BODIES

The most active of these Parastatals with great impact in the region are the following:

8.4.1 Coast Development Authority (CDA)

This is a regional development authority set up by an Act of Parliament with the mandate to plan, coordinate implementation, and initiate development projects. It has the following objectives:

- Food self-sufficiency;
- Income generation;
- Wealth creation;
- Employment creation; and
- Conservation and management of the environment.

In collaboration with sectoral ministries, the authority facilitates community development and solicits funds from donors for projects. For example, recently the authority was working with a South African firm towards establishment of a cashew nut factory in Kwale.

Through its activities the authority facilitates creation of employment opportunities, albeit indirectly. Plans are underway to rehabilitate irrigation schemes such as Vanga, and thereafter start new ones. It has professional officers in various fields who directly work with communities, or with line ministries and NGOs to foster development in the South Coast.

8.4.2 Kenya Ports Authority (KPA) and Kenya Ferry Services (KFS)

This is the largest parastatal based in Coast Province. With a workforce of approximately 5,560 workers it is a source of employment for many residents in the region. The Kenya Ports Authority has two scheduled, though minor, ports i.e. Vanga and Shimoni in the South Coast. They are mainly used for fish landing and hence contribute to the growth of the vital sector. It is also anticipated that when titanium mining commences, the Shimoni port will be upgraded and expanded to handle the commodity. This will bring external economies benefits as well as job creation.

KPA is also involved in community outreach development projects such as building schools for communities on a continuous basis. The latest of these projects is Vwivwini Primary School. Construction of such projects is undertaken by artisans, and raw materials are sourced exclusively from the locality to ensure direct benefits to the area residents.

The authority has future plans to develop the Dongo-Kundu area for an industrial park. This will involve inter-sectoral linkages for the development of requisite infrastructure. It is expected to open up the region for new investments, job creation and to promote tourism. The Kenya Ferry Services provide the link between South Coast and the rest of the country. Until the by-pass is developed the ferry will remain a crucial facility for the development of the region.

8.4.3 Kenya Marine and Fisheries Research Institute (KEMFRI)

Although the institute is situated in the North Coast, its activities cover the South Coast effectively. The institute conducts research on mangrove development, river discharge, fish stocks, seaweed farming, sedimentation, creek flash, and well pollution, among others. It is also involved in the development of aquaculture, working directly with local people. This enables acquisition of knowledge by local people that they utilise economically. In the process, jobs are created and incomes improved.

Inland fishing has been encouraged with KEMFRI working in conjunction with the Fisheries Department. Conservation and protection of the environment is undertaken in conjunction with the Kenya Wildlife Services. The institute generally uses a multi-disciplinary approach to research and development, identifying areas of various bio-diversity for close attention. The approach ensures sustainable use of the region's resources.

8.4.4 Kenya Wildlife Service (KWS)

Although the parastatal covers the entire country it has significant impact in the development of the region. It has three strategic goals:

- 1) Bio-diversity conservation, protection and management;
- 2) Building partnerships with stakeholders and communities; and
- 3) Building sustainable mechanisms for organizational effectiveness.

In the region the following benefits accrue from the activities of Kenya wildlife services:

- Conservation of wildlife as a national (natural) resource for posterity;
- Community involvement;
- Promotion of the economy, particularly through tourism; and
- Research and education benefiting both workers and the local community.

The following are specific areas where KWS pays close attention:

- Shimba Hills and Mwaluganje elephant sanctuaries;
- Shimoni Marine Park; and
- Kisite and Mpunguti Marine and National Park/Reserve. Diani/Chale Marine and National Reserve are gazetted, although not developed.

Through tourism development, the Kenya Wildlife Service contributes to employment creation.

8.4.5 National Museums of Kenya (NMK)

Established through an Act of Parliament, the organization has the primary role of maintaining and protecting the nation's heritage for future generations.

It works with other stakeholders to ensure current (modern) development takes place in a manner that guarantees conservation of existing (past) valuable (not necessarily economic) development. Cultural and biological artifacts constitute the sites that National Museums of Kenya strives to preserve. These include *Kayas* (forests) for cultural/religious purposes and historical sites such as mosques and caves. Benefits accruing to the community include promotion of tourism, education, medicine from forests and research by scholars, etc.

The *kayas* also serve as ritual homes for the Mijikenda. The *kaya* elders perform religious rituals and also guide political developments in their areas of jurisdiction. The parastatal helps in employment creation by recruiting local people in the WWF project e.g. the Ukunda office recruits education staff, conservators and guards who earn salaries or honoraria depending on their terms of contract or recruitment.

8.5 COMMITTEES AND BOARDS

8.5.1 Provincial Monitoring and Evaluation Committee

Its role is to supervise the work of the District Development and Executive Committees. It is supposed to be monitoring and evaluating projects in all the districts throughout the year. The Coast Province committee had not met for the past three years and was thus considered defunct.

8.5.2 Development Committees

The District Development Committees (DDC) coordinates all development programmes in the districts. They meet on a quarterly basis and both Mombasa and Kwale are fully operational. The District Commissioner chairs the DDC; the District Development Officer (DDO) serves as secretary. All departmental heads, members of parliament, mayors/chairmen of local authorities, parastatal and NGO representatives are members. Despite the crucial role played by the committee, it has no legal mandate.

There are lower level development committees, namely the Sub-DDC at the Divisional level, Location and Sub-location, development committees at locational and sub-locational levels, respectively. The latter two are almost non-existent in the region. The Sub-DDCs are operational but inconsistent.

8.5.3 Other Committees

At the district level there are several committees dealing with specific sectoral issues. Some have statutory powers whereas others are set up on administrative (ad-hoc) basis. Examples of the former, inter-alia are:

- 1) District/Municipal Physical Planning Liaison Committees set up under the Physical Planning Act, Cap. 286 for conflict resolution on physical planning issues;
- 2) District Education Board, under the Education Act;
- 3) District Agriculture Board; and
- 4) District Environment Committee.

Examples of district-based committees without legal mandate are:

- 1) District Plot Allocation Committee;
- 2) District Tender Board; and
- 3) District Security Committee.

8.5.4 Pertinent Issues on Committees and Boards

- Some lack legal mandate as exemplified above
- Lack of independent financial resources to carry out their programmes e.g. PMEC, DDC. Liaison Committees, etc

- Decisions of some of these committees are not autonomous, some are over-ruled by superior authorities, projects imposed from ministry headquarters
- Poor community involvement/participation due to bureaucratic “red tape” and interference of opinion/political leaders
- Apathy and negative attitudes towards the committees at all levels, including lack of motivation
- Overreliance on central government officials e.g. DC chairing almost all committees in the district irrespective of lack of technical/professional knowledge.

8.6 FINANCIAL INSTITUTIONS

These are formal institutions established under various statutes e.g. the Banking Act.

8.6.1 Banks

These are very thinly spread within the region.

- Barclays Bank of Kenya;
- Kenya Commercial Bank;
- Commercial Bank of Africa; and
- All the above banks have branches only in Diani/Ukunda.

8.6.2 Others Financial Institutions

- Kenya Women Finance Trust Ltd;
- K.Rep Bank and Financial Advisory Services i.e. village banks in 7 locations in Kwale;
- Agricultural Finance Corporation; and
- Kenya Post Office Savings Bank using post offices to dispense banking services at Ukunda and Likoni.

8.6.3 Co-operative Societies

There are four main and eight minor co-operatives carrying out various activities with approximately 12,000 members as shown in Table 8.2. This is an important movement that can solve most of the imperfect marketing systems identified in the economic sector. It is a vehicle that will empower the local community if carefully revitalized.

S/No.	Type	Division	No.	Membership
1	Savings & Credit SACCOS	Msambweni Matuga Samburu Likoni	41 2 2 3	} }Approx. 9100 } }
2	Farmers' Co-operatives	Kubo Msambweni Matuga Likoni	5 4 4 1	} }Approx. 2000 } }
3	Fishermen	Msambweni Likoni	5 1	} }Approx. 958
4	Ranching	Kinango	3	100
5	Others: • Mining • Housing • Consumer • Horticulture • Handicraft • Land buying	Throughout region	3 1 1 1 2 1	Membership not known as majority have collapsed, most have poor records.

Source: District Cooperative officer Kwale

8.6.4 Strengths and Opportunities

These include a common felt need the realization of benefits of “pooling together”, the benefits of economies of scale, mobilization of savings, for instance, most public servants built houses with co-operative loans. The Government is also making efforts to review the Co-operative Act, and there are benefits of inter-sectoral linkages such as agricultural productivity determining the success of marketing co-operatives. Good roads support agriculture, fisheries, and other activities.

8.7 COMMERCIAL AND INDUSTRIAL ASSOCIATIONS

These are institutions set up by communities, business people, and entrepreneurs to pursue common financial or welfare interests. These include:

- The Kenya Association of Tour Operators (KATO) for promotion and marketing of tourism;
- The Kenya National Chamber of Commerce and Industry (KNCCI) articulating interests of the business community;
- The Association of Physically Disabled of Kenya (APDK) rehabilitation of disabled through teaching skills and financing small enterprises;
- The Shika-Adabu BAMAKO initiative promotion of health through provision of cheap drugs, water and education;
- The Kwale Township Welfare Group mobilization of savings for self-help through loans;
- The Kwale Arts Troupe public education on HIV/AIDs, forced marriages, family planning and nutrition;
- The Mombasa Beach Operators Relocation Trust location of beach operators away from the beach to designated areas;
- The South Coast Drivers/Guides Association;
- The Shimoni Slave Cave/Historical Site Association; and
- The Kenya Society for the Physically Handicapped.

The industrial associations are mainly *jua kali* associations distributed throughout the region as shown in Table 8.3.

Name of Association	Division
<ul style="list-style-type: none"> • Samburu Jua Kali • Mackinon Road Jua Kali 	Samburu
<ul style="list-style-type: none"> • Waa Jua Kali • Kwale Township • Kwale • Mwavuli 	Matuga
<ul style="list-style-type: none"> • Diani • Msambweni • Lunga-lunga 	Msambweni
<ul style="list-style-type: none"> • Shimba Hills 	Kubo
One in the offing	Kinango
<ul style="list-style-type: none"> • Likoni Jua Kali • Mtongwe Jua Kali • Coast Micro Enterprise Development Agency – dealing in marketing of various products 	Likoni

Source: District Social Development Office, Kwale, 2000

8.7.1 Strengths/Opportunities

- By pooling resources, benefits of economies of scale will accrue;
- Employment creation; and
- Training opportunities and acquisition of advanced skills.

8.8 COMMUNITY-BASED ORGANIZATIONS

Community-based organizations comprise women, youth, and self-help and welfare groups. By December, 2000, there were 1,018 registered women groups and 709 youth groups with 15,462 and 13,009 members, respectively. There were also 186 self-help and other community-based organizations (CBO), with approximately 8,460 members. Table 8.4 shows their distribution in the region.

8.8.1 Women Groups

These are involved in the following activities

- Merry-go-round;
- Education;
- Farming, including livestock keeping;
- Construction of rental houses; and
- HIV/AIDS awareness advocacy.

Members' contributions form the major source of finance; donors occasionally assist. About 65 per cent are currently active. Most of those that collapsed depend on donors and Government grants following the 1996/97 national fund rising for women's groups.

8.8.2 Youth Groups

These are mainly involved in such activities as:

- Petty trade;
- Environment conservation;
- Drama;
- Anti-drug and HIV/AIDS awareness campaigns; and
- Curio and furniture making.

The source of finance are member contributions as well as occasional donor support. Only 35 per cent of the groups are currently active. Most of them collapsed soon after distribution of Nyayo Harambee funds.

8.9 NON-GOVERNMENTAL ORGANIZATIONS

There are about 30 non-governmental organizations, both local and international. They are involved in various activities, and are distributed throughout the region as shown in the Table 8.5.

8.10 EMERGING ISSUES AND CHALLENGES

8.10.1 Administrative Issues

- Serious shortfall of technical and professional staff (relies on central government for engineers, surveyors, planners e.t.c.);
- Political interference with officers' duties;
- Delays in recruitment and promotion of officers under Public Service Commission;
- Overemployment of junior staff, causing salary delays;
- Outdated by-laws;
- Conflict with Central Government over gate collection in parks (e.g. Mwaluganje) and tax from hotels;
- Overlap and duplication of roles;
- Ineffectiveness: some of the NGO's impact is not felt at the grassroots level; and
- Some have no physical address; officials accessible only by cell phones or have no fixed abode.

8.10.2 Cooperative Issues

Due to poor record keeping the financial status of most of them cannot be determined. Only 25 per cent of the co-operatives are active due to various reasons such as political interference (leaders fear popular co-operative officials), weak capital base, non-remittance of members' contributions by em-

ployers (Hotels and local authorities) and low diversification mainly teachers and hotel workers SAC-COs, concentrated in a small area (especially Msambweni). Other issues include poor management, high default rate in loan repayments, especially in marketing co-operatives which leads to cessation of credit. The Co-operative Amendment Act of 1997 also weakened the Commissioner's role of supervision and the liberalization policy increased competition to marketing co-operatives. There is also poor infrastructure.

- Lack of market for products, especially due to reduced tourism after clashes;
- Scarcity of raw materials for curios especially due to a ban on forest products;
- Some activities lack land to operate on, or there is no security of tenure for land occupied: very few have land titles;
- Limited capital base for expansion of enterprises;
- Poor infrastructure, particularly in the rural; and
- Cultural values witchcraft causing fear to potential investors in viable enterprises.

8.10.3 Other Pertinent Issues

- Poor management due to lack of proper knowledge of group organization;
- Inadequate capital base;
- Extension of a large number of groups whose establishment was initially politically motivated and self-aggrandizement of some of their leaders; and
- Misallocation of available funds to non-productive activities such as unnecessary seminars.

Table 8.4: Distribution of Community-Based Organizations by Division

Groups	Matuga		Samburu		Kubo		Msambweni		Kinango		Likoni		Total Groups	Total Membership
	No. of Groups	Membership	No. of Groups	Membership	No. of Groups	Membership	No. of Groups	Membership	No. of Groups	Membership	No. of Groups	Membership		
Women groups	140	2,058	148	1,987	117	1,881	268	2,886	184	2,625	161	4,025	1,018	15,462
Youth groups	120	1,807	129	3,087	103	1,545	180	2,912	110	1,935	67	1,005	709	13,009
Self-h. Groups	35	771	42	2,565	12	451	61	1,996	30	1,051	-	-	180	6,834
C.B.Os	1	30	-	-	-	-	4	96	1	1,500	-	-	6	1,626

Source: District Social Development Office, Kwale, 2000

Table 8.5: Non-governmental Organizations in the Region

S/No.	Name	Activity	Area Of Operation
1	Aga Khan Health Services	Health care	Kwale and Mombasa Districts
2	Plan International	Child Welfare, Education, Health, Water, Agriculture	Kinango, Kubo, & Msambweni Divisions
3	Action Aid	Water and Agriculture	Kilimangodo & Ndavaya Locations
4	Kwale District Eye Centre	Health	Serves whole Kwale Based at Matuga
5	Family Planning Association of Kenya	Reproductive Health and Family Planning	Whole region
6	C.D.T.F	Health, Education, Water & Sanitation. Agriculture	Kwale District, Only 2 projects started
7	Catholic Secretariat	Health, Education, Famine Relief	Msambweni Division
8	Verkaat Foundation	Education and Health	Kinango, Kubo, Msambweni
9	Choice Humanitarian	Agriculture, Micro-credit, Education, Water	Msambweni & Samburu Divisions
10	UNICEF	Health, Water, Sanitation, Women and Child rights, Environment	Msambweni, Matuga and Samburu

Source: District Development Office, Kwale, 2004

Summary of Development Challenges

9.1 INTRODUCTION

This chapter presents a summary of the development challenges identified during the analysis in the previous chapters. These challenges will have to be addressed if any meaningful and sustainable development has to take place in the plan area. The chapter, therefore, sets the stage for the strategy formulation in the next set of chapters. The presentation is along the thematic sections earlier on defined for ease of reference.

9.2 Physiographic and Natural Resource Base

a) *Geology and Relief*

- Beaches not fully exploited;
- Soil formations in the hinterland make road construction difficult, as roads are susceptible to erosion when it rains;
- Beach erosion in some parts of Diani;
- Scarp areas along the Shimba Plateau and along the rolling hills south of the plateau have recorded considerable erosion; and
- Soil fertility range from moderate to low.

b) *Climate*

- Three-quarters of the region receives 500 rainfall and below.

c) *Drainage and Water Resources*

- All rivers are seasonal;
- Existence of swampy areas in Vanga, Ramisi and Bodo areas; and
- Saline rivers and ground water along the Duruma series, which cover half of the region.

d) *Vegetation*

- Destruction of ungazetted forests; cultivation, settlement and charcoal burning;
- Low rate of replacement due uncontrolled deforestation; and
- Uncontrolled harvesting of forest products, e.g. Mangroves.

Opportunities

- Abundance of minerals;
- Existence of beaches and sea fronts;
- Conducive climate;
- Potential for port development e.g. Shimoni;
- Fishing industry;
- Water transport; and
- Water sporting activities.

9.3 ENVIRONMENT

- Coastline deposition and erosion around Likoni and Diani;
- Environmental pollution, mainly marine water pollution, especially oil spills;
- Depletion of forest cover and extinction of rare plant species;
- Loss of biodiversity in the designated marine, national reserves;
- Soil erosion along the steep slopes;
- Wetland encroachment due to human settlement activities;
- Environmental hazards such as floods, risks in geo-hazard areas due to lack of disaster preparedness; and
- Lack of solid and liquid waste management.

9.4 SOCIO-CULTURAL AND DEMOGRAPHIC DYNAMICS

a) *Population Size and Composition*

- At 2.6 per cent for Kwale and 3.6 per cent for Likoni the region still has high population growth rate; and
- Male-female ratio of 94:100 in Kwale District more women than men.

b) *Population Structure*

- Youthful population with 57 per cent being below 20 years which is school-going segment of population;
- High child bearing population at 46 per cent of the total; and
- At the age of 15-19 more men die at the sex ratio of 91:100.

c) *Population Distribution and Densities*

- Uneven population distribution;
- Some locations experience high population figures i.e. Likoni, Diani, Dzombo and Mwereni; and
- High densities in Likoni, Matuga and Kubo Divisions.

d) *Rural and Urban Migration*

- Likoni and Diani experiencing consideration rural-urban migration.

e) *Population Dynamics*

- Reducing population growth rate for Kwale District 2.6 per cent;
- High fertility rate of 6.0 for Kwale District a pointer for improved health services;
- High mortality rate crude death rate 13.7 and infant mortality rate 91.5 per 1000 population;
- Malaria and respiratory diseases account for 62 per cent mortality;
- Kwale District experiencing out-migration of 1 per cent for male and 0.2 for female;
- Likoni receiving immigrants;
- High dependence ratio 49 per cent; and
- High labour force that is not producing.

f) *Poverty*

High incidence of poverty in the region more so in drier areas such as Kinango and Samburu

g) *Socio-Cultural Values*

- Most of the socio-cultural values of Digo and Duruma hinder development;
- Witchcraft is a drawback to development;
- Gender segregation in decision-making;
- Land perceived a communal asset but not economically utilized;
- The community has not exploited its cultural heritage for economic gain;
- Local people practice polygamy;
- Women and children provide most of the labour force in farms;
- Local people waste a lot of time in celebrations and idling;

- Women are not allowed to inherit land;
- Negative attitude towards formal education; and
- Cultural tourism.

9.5 ECONOMIC BASE

9.5.1 Agriculture

The challenges facing crop husbandry are pests and diseases, unreliable rainfall, low producer prices, poor marketing systems, poor extension services, expensive inputs, and poor infrastructure. Other challenges include low adoption rate of modern farming techniques, sentimental attachment to maize which does not do very well in the area, collapse of cashewnut and sugarcane industries, poor management of cooperatives and liberalization.

In the livestock sector the challenges for farmers include prevalence of pests and diseases on livestock, collapsed dips, poor management of ranches, poor breeding programmes, poor animal husbandry and unreliable rainfall. Others are a poor marketing system, collapse of mariakani processing plant, poor running of cooperatives, and liberalization.

9.5.2 Forestry

In the forestry sector the challenges are destruction of forests by wildlife as elephants destroy seedling and mature trees, lack of effective personnel to monitor or protect the forest reserves as the number of guards is too small and overlap and duplication of roles between KWS and Forest Department. Wild forest, reduced forest cover caused by human encroachment or settlements and Illegal exploitation are added challenges.

9.5.3 Fishing

There are problems also in the fishing industry manifested in poor road conditions (such as in Vanga, Bodo and Kibuyuni) and high cost of transport in most parts of the district such as Kikoneni, Samburu and Msambweni. Other problems include lack of storage facilities, poor technology that threatens sustainable fishing practice, inaccessibility of landing sites, trading sites on privately owned land, fish traps destroyed by motorized boats and unreliable power supply. Limited capital to undertake fishing, poor roads and poor marketing (exploitation by middlemen) also pose a challenge.

9.5.4 Trade and Commerce

For trade and commerce, the hurdles include limited access to credit, rural poverty and reduced purchasing power, lack of training for business undertakers, strict ministerial guidelines of licensing and limited capital investment. There are also problems relating to limited capacity to diversify and keep trends with change of times/opportunities, dying centers and lack of infrastructure e.g. electricity in market centers, sewerage, etc.

9.5.5 Tourism Sector

a) *Insecurity*

International terrorism with sporadic occurrence in Kenya has created wrong impression/concerns about security for tourists in Kenya. This was further reinforced by the Likoni clashes that affected the region in 1997.

b) *Ineffective marketing*

The country has not developed effective marketing tools to sell the country against their neighboring competitors e.g. Seychelles, Mauritius and South Africa.

c) *Poor state of infrastructure*

Poor state of roads, limited airstrips, outdated telecommunication services, inadequate water and limited electricity coverage leading to poor access to existing sites.

- d) *Moral decay*
Prostitution, child labour, drug abuse and other social ills.
- e) *Job insecurity*
Seasonal, vocational employment due to poor services leading to decline in bed occupancy and number of visitors coupled with low wages in hotel employment and non-payment of workers. Ineffective organization of trade unions to effectively represent and help improve the employee's welfare.
- g) *Overreliance on foreign tourism and dependence on European tourist market*
Overdependence on the tourism sector and neglect of other sub- sectors.
- h) *Human/wildlife conflict*
- i) *Poor spatial spread of tourist facilities.*

9.6 HUMAN SETTLEMENTS

The challenges facing human settlements are:

- Inadequate funds and technical staff undertaking adjudication work;
- Squatter problem in settlements schemes;
- Allocation of settlement plots done on unsurveyed plan;
- Absentee landlords;
- Slow process of adjudication and legalization of land;
- Encroachment on riparian reserves (e.g. adjudication up to the sea shore);
- Human/wildlife conflict;
- Unplanned settlements;
- Political interference in the process of planning, adjudication and settlements;
- Ineffective development control measures;
- Dying centers (Ramisi, Majoreni, Fikirini);
- Degradation of the environment;
- Inadequate urban-related infrastructure and service;
- Overconcentration of development activities along communication channels;
- Townships within clan land;
- Lack of land use policy;
- Weak institutional support (SFT, councils and planning);
- Social cultural effect on settlement (clan land, attitudes towards Government officers, ignorance);
- High incidence of poverty; and
- Poor housing standards.

9.7 INSTITUTIONS

The challenges to be encountered in various development institutions are as follows:

- a) *Local Authorities*
 - Serious shortfall of technical and professional staff (relies on central Government engineers, surveyors, planners etc);
 - Political wing interference with officers' duties;
 - Delays in recruitment and promotion of officers under Public Service Commission;
 - Overemployment of junior staff, causing salary delays;
 - Outdated by-laws; and
 - Conflict with central Government over gate collection in parks (e.g. Mwaluganje) and tax from hotels.

b) Committees and Boards

- Some lack legal mandate;
- Lack of independent financial resources to carry out their programmes e.g. PMEC, DDC. liaison committees, etc;
- Decisions of some of these committees not autonomous, some overruled by superior authorities, projects imposed from ministry headquarters;
- Poor community involvement/participation due to bureaucratic “red tape” and interference by opinion or political leaders;
- Apathy and negative attitudes towards the committees at all levels, including lack of motivation; and
- Overreliance on central Government officials e.g. D.C. chairing almost all committees in the district irrespective of lack of technical or professional knowledge.

c) Cooperatives

- Due to poor record keeping the financial status of most of them cannot be determined;
- Only 25 per cent of the co-operatives are active due to various reasons; e.g. political interference (leaders fear popular co-operative officials);
- Weak capital base;
- Non-remittance of members’ contributions by employers (hotels and local authorities);
- Low diversification mainly teachers and hotel workers SACCOs, concentrated in a small area (especially Msambweni);
- Poor management;
- High default rate in loan repayments, e.g. marketing co-operatives to Co-operative Bank, leading to cessation of credit; and
- Poor infrastructure.

d) Non-governmental Organizations

- Overlap and duplication of roles; and
- Ineffectiveness; some of the NGOs impact is not felt at the grassroots level.

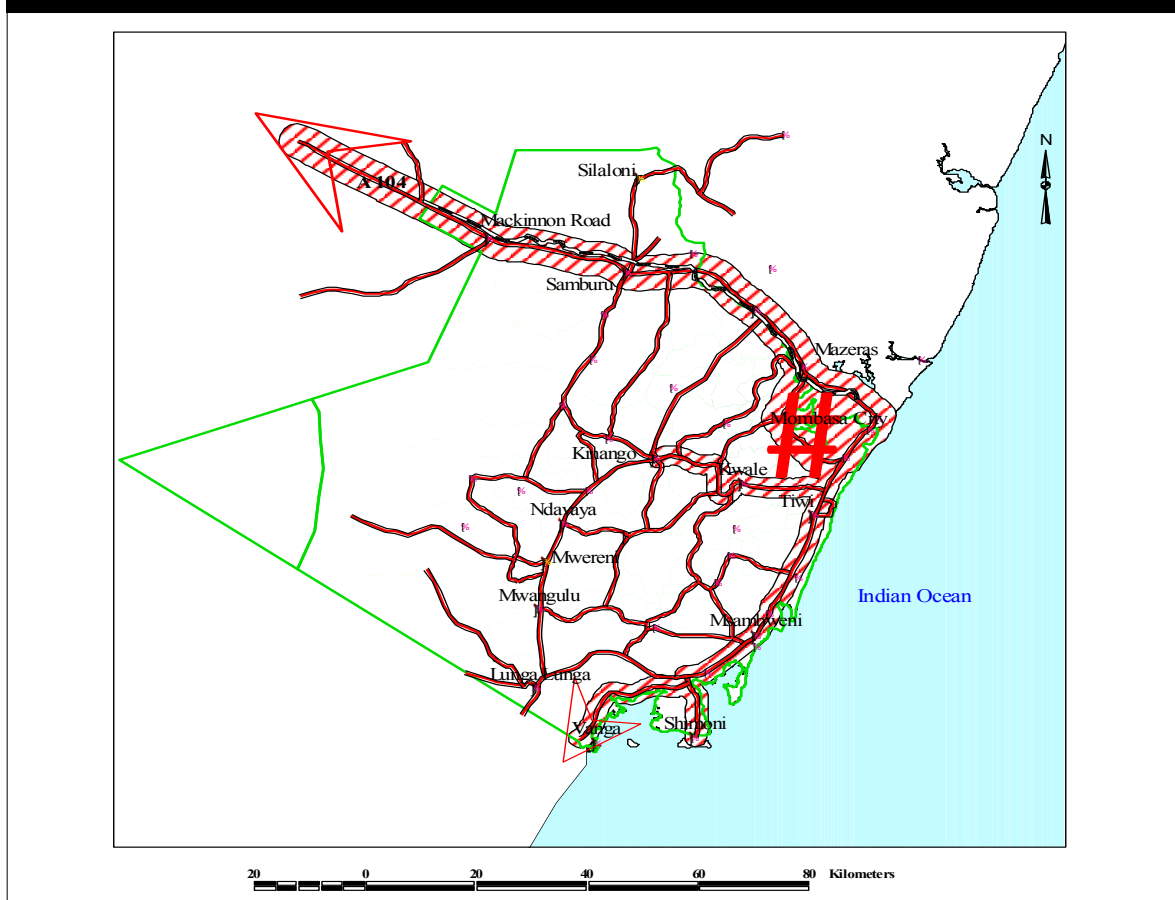
Conceptual Framework

10.1 INTRODUCTION

This chapter analyses the elements that structure the plan area and are likely to influence the pattern of development over the plan period. It also presents the emerging development zones that will form the main bases of determining the combination of intervention actions for the sustainable development of Kwale District and Mombasa Mainland South.

An analysis of the spatial distribution of development shows that development has taken place as a ring which leaves the hinterland marginalized and underdeveloped. Coastal front, the transport corridors and Mombasa City, is pulling resources from the region. The proposal is to reverse this by galvanizing the economic forces in Kwale District. The planning area is structured by seven main elements: Mombasa City, the A104 and the Railway, the Sea/Indian Ocean, the Likoni-Vanga Class A Communication Corridor, other Communication Corridors, the International Tanzania Border Interface, and the Kuranze Triangle.

Map 10.1: Conceptual Framework



Source: Physical Planning Department conceptual Framework, 2004

10.2 MOMBASA CITY

The planning area enjoys a symbiotic relationship with Mombasa City in the following ways: Mombasa forms the main market for agricultural produce from Kwale and, in turn is the source of higher order goods and services for the plan area including a referral hospital, a polytechnic, a high court, a provincial administration (PC's) office, an international airport, train and bus services to Nairobi and up-country towns. Mombasa city offers employment opportunities to the people of Kwale while Kwale forms a dormitory for the workers. Mombasa City is the entry point for the tourists who patronize the plan area. The plan area presents Mombasa with a possible vent for large land consumers like solid waste disposal, sewage works, housing and expansion of airport. This overspill of development should be managed to enhance the positive aspects and to mitigate the negative impacts.

10.3 THE A104 AND THE RAILWAY

The Mombasa-Nairobi (A104) highway and the railway constitute a corridor of very high accessibility that has attracted a concentration of industrial and commercial activities. It forms a continuum of the economies of scale enjoyed by the City of Mombasa. This corridor presents opportunities for location of railway-related industries. It, however, forms a defining limit to interconnection with other growth areas of Kilifi and part of Kwale District.

10.4 THE SEA/INDIAN OCEAN

The sea- Indian Ocean- presents a number of development challenges and opportunities:

- As a water mass it limits eastward land use expansion;
- Links with international markets;
- Opportunities for marine resources and tourism development;
- Influence on the climate; and
- Sensitive eco-system to pollution from land uses.

Plate 10.1: The Indian Ocean



Source: Physical Planning Department, 2004.

10.5 KENYA-TANZANIAN INTERNATIONAL BORDER

The border has the following planning and growth implications:

- International trade;
- Growth points commerce and settlement;
- Cultural melting pot;
- Special security considerations; and
- Alternative source of services and infrastructure (electricity, water, telecommunications, education).

10.6 THE LIKONI-LUNGA-LUNGA INTERNATIONAL TRUNK ROAD

This road provides the link between Mombasa and Tanzania traversing the planning area in north-south direction:

- Corridor of highest accessibility;
- Attracting urban sprawl and concentration of developments;
- Main spine upon which the secondary roads hinge; and
- Defines the limit of the tourist development coastal strip.

10.7 SECONDARY TRANSPORTATION CORRIDORS

- Emerging corridor of Kwale-Kinango road given the indicators today, which is addressing the interior of Kwale region so we must find out what, is facilitating its growth and how we can enhance that linkage;
- What are the existing possible linkages given the foregoing factors? the message of the scenario is that there is no hope but planners must look for positive opportunities;
- Existing classified roads from Lunga-lunga and Kinango;
- Mariakani to Samburu. There is hope, therefore, of linking the two corridors, the Nairobi Mombasa and the coastline corridor; and
- Opportunities for rural development.

10.8 KURANZE TRIANGLE

This is an area of least accessibility and unique development needs.

10.9 DEVELOPMENT ZONES

a) *The Coastal Plain or Coral Rag (Tourism Promotion Area / zone)*

- A narrow strip of land three to 10 kilometers and length of about 255 kilometers from Likoni to Vanga;
- It has the highest tourism development potential and already has considerable tourist facilities;
- Has high concentration of infrastructure, investment, population, and rapid development. The south coast has unique beaches (the white sands) providing special attractions for tourism development;
- Also has high accessibility offered by the all-weather class A Likoni- Vanga road which traverses the area;
- Has potential for agro-based industries;
- Potential for fishing;
- Mining potential Tiwi, Msambweni area;
- Good communication links;
- Proximity to the ocean, diverse conservation of Kayaks therefore potential for tourism; and
- High population potential labor force and market for goods produced.

b) *The Foot Plateau and the Coastal Uplands (Agriculture Promotion Zone)*

- Lies at an altitude of between 60 and 135 metres above sea level on a flat plain surface with high potential permeable sand hills and loamy soils;
- It also consists of the Shimba Hills which rises steeply from the Foot Plateau to an altitude of between 150 metres and 462 metres above sea level. This zone is made up of many sand stony hills including: the Shimba Hills (420m), Tsimba Hill (350m), and Dzombo Hills (462m);
- It is an area of medium to high agricultural potential;
- Potential for industrial growth;
- Minerals;
- Milk production; and
- Potential for tourism.

c) *The Nyika Plateau (Livestock Promotion Zone)*

- Stands at an altitude of about 180 to 300m above sea level in the western part of the region;
- It is semi-arid with poor soils and the main activity is livestock rearing; and
- It is the area with the poorest accessibility in the region.

Alternative Development Models

11.1 INTRODUCTION

Analysis, scenario building and projections in the six thematic sectoral areas (i.e. physiographic and natural resources; socio-cultural and population dynamics; economic base; infrastructure and services; human settlements and institutional framework) revealed a number of assets and challenges that will form the basis of policy intervention and direction in the development of the planning area. Categorization of the assets and potentials led to three main growth themes/models, namely Agriculture and Rural Development, Tourism and Environment, and Urbanization and Industrialization.

This chapter presents the three growth models as possible development paths that could lead to the sustainable development of Kwale District and Likoni Division. Each model identifies the strategic objectives and suggests strategies to attain these objectives and key actions designed to give effect to the strategies.

11.2 AGRICULTURE AND RURAL DEVELOPMENT MODEL

Kwale District and Mombasa mainland South are areas of medium agricultural potential. Much of the agricultural land is located in the Coastal Plain and the Coastal Upland, while the rest of the region is largely suitable for ranching and livestock production. Although much effort is invested in planting maize, clearly the maize crop is not suited to the region and maize yields obtained are lower than what is obtained nationally. Crops like coconuts, cashew nuts, cassava, sorghum, sweet potatoes, sugarcane, bixa and fruits do much better and more effort should be devoted to them.

The agriculture and rural development model recognizes the importance of agriculture as the traditional strength of the regional economy in terms of food security, employment and income generation and promotion of cultural heritage. Support to local area-based initiatives, which promote community empowerment, participation in decision making and access to local resources are seen to be the driving forces to poverty alleviation and positive contribution to regional development.

Agriculture employs a significant proportion of the rural population and while employment is declining in relative terms, the sector continues to play a defining role in the rural landscape and is the conduit for major public support for rural communities. Agriculture is and will remain critical to the wellbeing of the rural economy and, in many areas, represents the main option for economic activity. Maintenance of a healthy agriculture sector is, therefore, an essential component of a sustainable regional development strategy for Kwale District and Mombasa Mainland South.

Vision:

Self-reliance and freedom from hunger.

Mission

To develop a vibrant sustainable agriculture-based economy that generates sufficient food, income and employment in the region.

Objectives

- 1) To enhance food security in the region;
- 2) To use agriculture as a basis for wealth creation and poverty alleviation;
- 3) To promote efficient use of resources and conservation of the environment;
- 4) To establish efficient and effective marketing systems for local produce; and
- 5) To empower the people of the region to make maximum use of their resources without loss of their cultural identity.

Strategy 1: Enhance Food Security Systems

Kwale District is a food-deficit district and receives relief supplies every year. There is need for effective food supply of sufficient quantities of well-balanced, good quality food of different types to all families. The problem is compounded by the low levels of income and low agricultural productivity.

Key Actions to Support the Strategy:

- Encourage optimal utilization of agricultural areas;
- Research on soils of the region;
- Collate and document information on soils, crops and weather patterns in the region;
- Disseminate information to farmers;
- Monitor factors with soil fertility, soil erosion and water depletion;
- Develop regular training programmes for farmers;
- Strengthen and upgrade the KARI substation at Matuga;
- Encourage research and dissemination of information;
- Develop an inventory of land in the region for comprehensive land processing for registration;
- Speed up land ownership (squatter) and issuance of title deeds;
- Develop a programme to end human-wildlife conflict;
- Develop partnerships between KWS and the local community to manage human wildlife conflict;
- Undertake comprehensive soil fertility inventory and monitor factors i.e. soil fertility, water and soil erosion;
- Encourage timely planting and harvesting;
- Improve systems for food storage, processing and distribution for grain storage;
- Develop food security prediction and early warning systems;
- Maintain adequate strategic food reserves;
- Develop and encourage planting of drought-resistant crop varieties;
- Encourage cash crop farming to improve the cash economy;
- Promote value adding on agricultural produce;
- Develop an efficient marketing system for crops and livestock;
- Revive and rehabilitate collapsed infrastructure;
- Sensitize and encourage local people's adoption of modern farming techniques and management;
- Provide adequate and quality extension services;
- Undertake capacity building; and
- Encourage research and information.

Strategy 2: Increase Agricultural Inputs and Improve Productivity

To meet the desired level of production, it will require additional input of materials, energy and financial resources. It will also need improvement of the infrastructure for agriculture, improvement of agro-ecological environments and enhancement of aggregate agricultural productivity.

Key Actions to be taken to Support the Strategy:

- Create local community awareness on the right crops that can be cultivated on the various soil types;
- Promote use of improved seeds;
- Encourage the cultivation of drought-resistant crops and plants in the drier areas of the Nyika Plateau (millet, aloe vera);

- Promote irrigation in the drier areas;
- Provision of credit to farmers;
- Introduce machinery and equipment programme (tractor hire scheme) both public and private;
- Enhance marketing linkages and opportunities to raise agricultural incomes;
- Establish information desks on farming and marketing at the divisional level; and
- Secure farms from wildlife invasion.

Strategy 3: Improve Extension Delivery Systems

To achieve the objectives of highly productive, high efficient food production, in addition to increasing inputs of materials for production, scientific and technical expertise should be fully utilized to improve efficiency of production and to maintain sustainable agricultural development

Key Actions to be taken to Support the Strategy:

- Strengthen extension delivery system;
- Coordinate the various line ministries involved in extension;
- Establish linkages between farmer groups and universities or research institutions;
- Involve the private sector in extension service delivery;
- Improve access to credit through micro-financing and other innovative credit systems;
- Implement the National Agriculture and Livestock Extension Programme;
- Create awareness among the farmers on improved farming practices;
- Coordinate activities of the various line ministries; and
- Link agricultural institutions and farms.

Strategy 4: Promote Livestock Production and Marketing

This industry involves dairy, meat production and hides and skins from cows, sheep, goats, bee keeping and poultry, the importance of which is felt in food production and employment of the small scale farmers. It therefore has crucial implication for poverty alleviation especially in the dry areas of the district.

Key Actions to be taken to Support the Strategy:

- Research and empower the local community on pasture improvement management;
- Promote animal health by reactivating and expanding dipping, breeding and clinical services, including monitoring and controlling animal diseases through group approach;
- Promote dairy goats as an emerging source of milk and other small stock activities such as poultry and bee-keeping;
- Support the development of facilities for milk handling such as collection and cooling centers;
- Encourage the private sector and local authorities to establish small abattoirs and meat processing facilities;
- Rehabilitate by periodical distilling, compaction and construction of water dams in Kinango, Samburu and some parts of Msambweni Division;
- Look into provision of piped water from Mzima and Marere;
- Promote game ranches which can serve as tourist attraction centres;
- Promote value addition through processing;
- Promote capacity building of farmers; and
- Empower local communities to participate effectively in livestock marketing.

Strategy 5: Promote Fish Production and Marketing

The significance of the fishing industry is felt in contribution to incomes, subsistence and nutrition to the local communities. The industry, is however, hampered by a number of bottlenecks including lack of appropriate facilities, an uncertain market, and undeveloped landing sites among others.

Key Actions to be taken to Support the Strategy:

- Revive cooling plants at Diani, Shimoni, Majoreni, and Vanga;
- Develop facilitative infrastructure including landing breaches, cooling plants and access roads to reduce wastage and to achieve the required sanitary and health standards;

- Support the local fishermen to up-grade and modernize their fleet;
- Develop marine fish farming extension packages;
- Encourage growth of micro-finance institutions to provide credit;
- Improve landing sites, construct fish *bandas* and jetties for both fresh and marine fishing;
- Improve sanitary facilities;
- Provide portable treated water;
- Promote deep sea commercial fishing and fish export;
- Develop marine water fish farming extension packages;
- Encourage inland fresh water fish farming;
- Establish university, college for marine biology and training facilities for fishing;
- Repossess land useful for fishing activities e.g. landing sites;
- Empower the local communities to undertake commercial fishing;
- Establish fish processing and fish-based industries; and
- Secure and repossess access roads and landing site allocated to private developers.

Strategy 6: Preserve the Cultural Heritage of the Rural Areas

The planning area has a rich and diverse cultural heritage embraced in the language, life-style and traditions, traditional music, song and dance, landscape, unique products, monuments and the arts which represent a distinct cultural identity and way of life. The culture provides a sense of place for rural communities, a link with the past, but it also has through its traditions and values, a crucial role in defining modern society. Arts and culture contribute to building a sense of local identity and they influence the confidence with which rural communities tackle their own problems, co-operate with each other in their social and economic organizations and adapt their collective approach to modern needs.

In economic terms, culture and the arts contribute directly and indirectly to the creation and retention of employment in rural areas and present an image of an area as a basis for tourism and business investment. Traditional and modern crafts represent a significant and growing sector of the small business economy in many rural areas and provide opportunities for people to generate income from their personal resources and skills. The preservation and enhancement of local culture is also a feature of rural areas which has potential for generating new kinds of economic activities.

Support should be provided for development projects which will allow increased access and participation in arts and cultural activities for rural communities, not only for the purposes of enriching the quality of life and the cultural identity of rural communities but also as contributors to economic development.

In addition to harnessing these positive aspects of the local culture, the retrogressive aspects manifesting themselves in form of child labor, early marriages, gender imbalances in access to resources and participation in decision-making and development need to be urgently addressed.

Key Actions to be taken to Support the Strategy:

- Encourage micro and medium-scale enterprises;
- Promote cultural villages;
- Enhance universal free primary education;
- Have special bursaries for girls;
- Enforce legal provisions of child rights;
- Publicize retrogressive cultural belief;
- Promote formal and religious education;
- Promote social development programmes;
- Improve maternal and child care services and family planning education;
- Introduce medicinal plants as part of agro-forestry;
- Strengthen research and conservation of local food crops;
- Document ethnobotanical information from the region; and
- Conserve plants of economic and cultural value in the region.

Strategy 7: Improve Access to Infrastructure and Services

The provision and maintenance of an adequate level of infrastructure is central to the economic and social development of the rural areas and the achievement of balanced regional development. A modern infrastructure is essential if rural areas are to compete effectively for inward investment and remain competitive for existing and new indigenous enterprise. It will also contribute to making rural areas attractive places in which to live and work. Availability of essential public services in the rural areas will ensure a proper environment for economic development, promotion of social inclusion and support of dispersed viable rural communities.

Key Actions to be taken to Support the Strategy:

- Implement Roads 2000 routine maintenance of feeder roads to be carried out; periodic maintenance of feeder roads to be done, sustain employment of casual contractors; and undertake labor-intensive road maintenance through local recruitment;
- Develop, rehabilitate, maintain, and manage the road network by operationalising the District Roads committees;
- Promote cost-effective and quality management of the road network through routine maintenance of roads, periodic maintenance of trunk roads; reconstruction and upgrading of trunk roads;
- Operationalise the district road committees;
- Extend the existing road network to underserved areas;
- Accelerate access to rural electrification programme to more areas in the region;
- Promote wind and solar energy technologies;
- Improve the availability of rural water supplies through rehabilitation and augmentation programme along with transfer of schemes to communities and other local actors;
- Develop a plan for additional water supply facilities and mobilize resource for their construction;
- Enhance water conservation rehabilitate or construct dams, pans, boreholes in partnership with user communities and on contract with the private sector;
- Increase the number and quality of health centers, paying particular attention to the issue of drug supply and staffing by provision of cost effective service delivery;
- Enhance public health education;
- Increase the proportion of bursaries at day schools, expand bursaries and improve targeting with special emphasis on girls through better means testing;
- Provide science equipment and other support materials;
- Strengthen adult education and youth polytechnic scheme; and
- Strengthen the ICT infrastructure and telecommunication.

Strategy 8: Creation and Maintenance of Employment and Income-generating Opportunities

The overall objective is to diversify the rural economy and exploit the potential for economic development in an appropriate scale and manner for the benefit of the rural communities. The need to compensate for the continuing decline in the relative economic importance of agriculture is a major challenge for the plan area as future development opportunities are sought. Off-farm income will be central to the survival of many farm families and off-farm activity will become increasingly important as a means of supporting viable households. The future lies in the creation of additional jobs in industry and services.

Key Actions to be taken to Support the Strategy:

- Promote agro-based industries revitalize collapsing industries like bixa, cashew nut and Ramisi sugar industry, dairy medium plants and tanneries. The stalled cashew nut processing plant near Kwale township should be completed and operationalized;
- Support and enhance mineral exploration and mining in the Triangle Area;
- Enhance Tiomin mining and plan settlements centered on this resource;
- Initiate and support off-shore exploration for hydrocarbons;
- Encourage small and medium-size enterprises to be located in the service centers that have been identified;

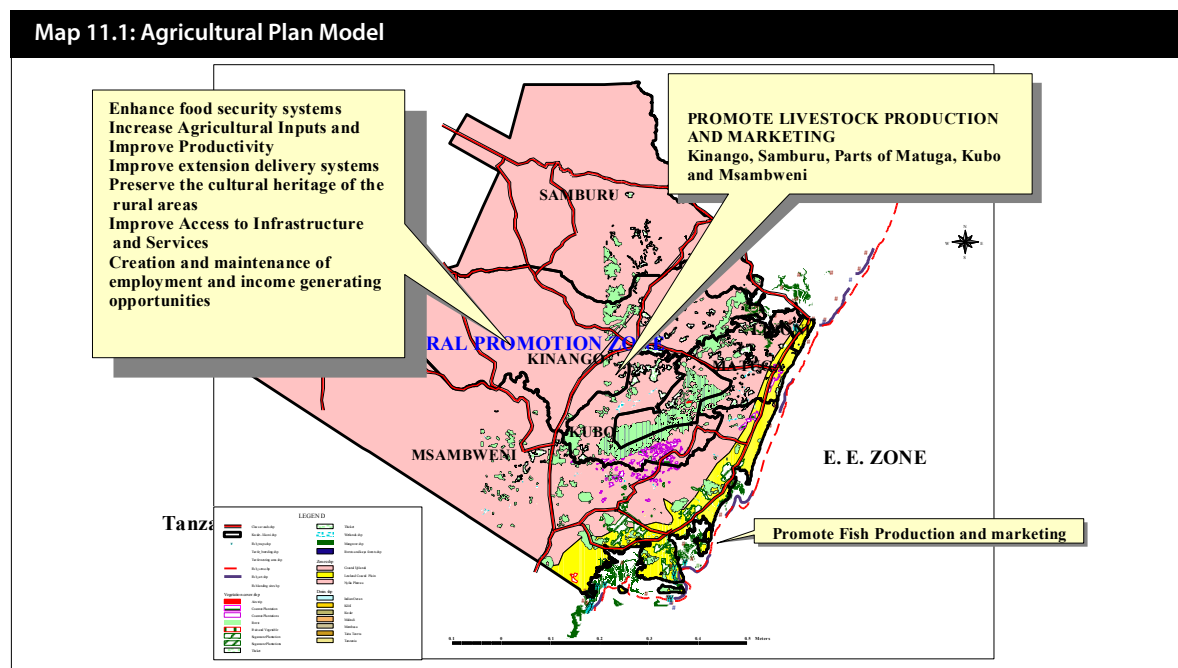
- Encourage housing development in the service centers and use of local materials for construction;
- Promote rural labor-intensive road construction and community works;
- Provide a full range of infrastructure and services in the various service centers;
- Provide entrepreneurial training;
- Formulate strategy, Government policy targeting coastal agriculture i.e. formulate bills for coconut, cashew nuts;
- Establish a Marine Biology Centre;
- Establish and promote EPZ centres based on local products;
- Provide rebates incentives for local products; and
- Provide entrepreneurial training.

Strategy 9: Development of a Policy and Institutional Framework

Kwale and Mombasa Mainland South is a unique region, with diverse resources some of which are found nowhere else in Kenya. The rich and unique biodiversity, the contrasting ecological zones, the Exclusive Economic Zone and the rich mineral deposits are only but a few of the unique resources of this region. Exploitation of these resources for the development of the region and the empowerment of the indigenous communities, requires a special policy and institutional framework which will recognize the uniqueness of the region.

Key Actions to be taken to Support the Strategy:

- Formulate Government policy and strategy on coastal agriculture
- Establish a university dedicated to marine biology and oceanography
- Establish an export processing zone (EPZ) based on local produce
- Design strategies and policies for protecting local produce from unfair competition.



Source: Physical Planning Department, 2004.

11.3 TOURISM AND ENVIRONMENT DEVELOPMENT MODEL

This model is based on the fact that there exists immense tourism potential in the region including a 200 km coastline of fine sand beaches; places of historic, cultural and archeological significance; abundance of wildlife and marine life; rich cultural diversity; areas of scenic beauty availed by natural topographical diversity of land forms ranging from the Shimba Hills through the Nyika Plateau to the coastal plains and the existing tourism infrastructure.

Tourism is playing an increasingly important role in the regional economy and has considerable potential for further development. The model envisages tourism to be a powerful instrument of regional policy and being locally based and available to the most remote rural areas, offers significant jobs and income to compensate for absence of manufacturing or industrial base. Tourism can provide a viable alternative farm enterprise in the context of a planned approach to sustainable development. It can also involve a large number of local participants and provide a mechanism for integrated community development. If tourism is to represent a realistic sustainable development option, it will require a carefully planned and targeted strategy as well as a high level of commitment, organization and willingness to pursue objectives on the part of communities.

Vision

A vibrant tourism-led economy that will ensure maximum contribution to the economic and social development of Kwale and Likoni while preserving the character, natural resources and environment on which the attractions of the region are based.

Mission

To develop a sustainable and viable tourism-led economy as an alternative to farm enterprise through carefully planned and targeted strategies to benefit the local community.

Strategy 1: Conservation and Sustainable Use of Natural Resources

The tourism industry is based on natural resources and conservation of these resources, vital for its sustainability. The coastal environment has a number of fragile ecosystems such as the wetlands, natural forests and bio-diversity habitat sites. These fragile areas are threatened by human activities and neglect arising out of lack of a cohesive strategy and the conservation measures taking the form of many unrelated, small-scale initiatives at the local level.

Key Actions to be taken to Support the Strategy:

- Protect and develop the coastline through the Coastal Zone Management Plan including the implementation of a targeted coastal protection programme to protect priority assets especially the Likoni and Diani sea shores and beaches which are experiencing serious erosion;
- Preserve and protect the marine environment through implementation and enforcement of the Environmental Management and Coordination Act (EMCA) of up-to-date pollution legislation and measures (1990) and other related legislation;
- Maintain and develop emergency intervention measures and prevention capabilities for monitoring of the marine environment;
- Protect and enhance marine bio-diversity sites of Mpunguti and Kisite National Reserves;
- Develop and protect Chale and Diani National Reserves developed and protected;
- Develop a comprehensive natural resource inventory and intensify research programmes focusing on specific aspects of the environment e.g. water catchment, estuarine, biodiversity and renewable energy;
- Initiate conservation measures of the *Kayas*, wetlands and the Mangrove forests;
- Establish suitable community-based structures for resolution of human-wildlife conflicts and put in place a framework for mitigation of the effects of wildlife menaced in the Shimba Hills ecosystem, *Kayas* and other affected areas;
- Mitigate the human-wildlife conflict in Shimba Hills and Mwaluganje through electric fencing and creation of buffer zones;
- Increase forest cover through on-farm forest programmes and mangrove forest development and management;
- Introduce awareness to general public to protect and enhance biodiversity; and
- Introduce community benefits sharing mechanisms for conservation and utilization of the natural resources.

Strategy 2: Promote the Conservation of Natural Heritage and Indigenous Cultural Values

Mitigate against the negative effects of the tourism industry, including prostitution, drug abuse, child labor and other social ills. There should be deliberate effort to promote positive indigenous cultural values which will influence positive behavior.

Key Actions to be taken to Support the Strategy:

- Develop cultural centres and trails;
- Develop partnership programmes in primary, secondary, tertiary and informal education to incorporate indigenous communities' heritage, language, culture and traditional practices;
- Generate appropriate vocational training schemes and business development programs to support beach operator enterprises and cultural troupes; and
- Document and lobby for gazettelement of new historical and cultural sites.

Strategy 3: Sustainable Land Use Planning

Planning in the region should be undertaken in a way that retains the environmental assets of the region while supporting economic growth and catering to the needs of the population. The regional plan clearly identifies the planning potential in the region. Planning needs will take a long-term view based on the projected growth rather than the region having to catchup on the planning in response to the increased population.

Key Actions to be taken to Support the Strategy:

- Prepare detailed action physical development plans for the management of areas identified for tourism development;
- Initiate dialogue and participatory planning activities among all the stakeholders in the tourism industry;
- Mainstream livable neighborhoods planning concepts, strategic planning and environmental conservation to guide development;
- Train chief officers and sensitize councilors to support local communities in promoting environmental conservation activities and in defending their heritage; and
- Build the capacity of the local communities in the conservation of third cultural heritage through public education and sensitization, establishment of community structures and facilitation for access to resources.

Strategy 4: Coordinated Infrastructure Planning and Development

A well-coordinated network of infrastructure linking the various tourist attraction sites and the entry points will add to visitor satisfaction and revisits that will enhance the tourism-related activities to generate more revenue.

Key Actions to be taken to Support the Strategy:

- Up-grade exiting airstrips;
- Improve and maintain the tourist circuits roads;
- Provide water, electricity and sanitation facilities in the tourist attraction sites;
- Develop information and communication centres in strategic locations in the region;
- Develop the Dongo-Kundu by-pass to link the South Coast to Mombasa; and
- Conduct environment impact assessment in new project development and environmental audits for existing projects.

Strategy 5: Protect and Manage Water Resources

It requires a statutory basis for the management of land use and development to prevent or minimize activities that cause water quality degradation. A comprehensive approach to water management embeds policies and actions that are coordinated and designed so that:

- The quality of all water sources is protected and whenever possible, enhanced;
- Water sources, floodplains and dependent ecosystems (including groundwater and wetlands) are protected and restored;
- Habitats, animals and plants that benefit from water or are potentially affected by land use activities are protected and (in the case of habitats) restored;
- The cumulative impacts of water management licences and approvals and other activities on water sources and their dependent ecosystems are considered and minimized; and
- The sharing of water must protect the source and its dependent ecosystem.

Key Actions to be taken to Support the Strategy

- Enhance drainage pollution control using appropriate cost-effective and efficient technologies and urban water management to conserve resources and prevent entry to ground water and surface water resources;
- Promote rainwater collection; and
- In preparing land use strategies, identify and secure for the longer-term areas where treated wastewater can be reused as part of a holistic approach to water resource management.

Strategy 6: Involve Local Communities in Tourism Development

The local communities are the custodians of the tourist natural assets and their involvement will not only ensure protection of these assets but that the benefits from the industry will trickle down to them. The local communities also possess traditional knowledge and expertise that could be tapped for the sustainable development of the tourism industry.

Key Actions to support the strategy:

- Undertake deliberate special programmes to train local people in tourism development projects in collaboration with the investors in the tourism industry;
- Initiate forums for dialogue between local communities and hoteliers through corporate social responsibility;
- KTB to facilitate local communities' tourism projects and small and micro-enterprises in tourism to forge partnership and linkages with the dominant tour operators;
- Support local community members to gain access to increased representation on local tourism boards;
- Provide training on effective board membership to local community;
- Support local groups and local initiatives such as dance troupes, drama and curving groups; and
- Ensure local community benefit from Tourist Trust Fund.

Strategy 7: Design Disaster Preparedness and Prevention Programmes

The region is vulnerable to various hazards and risks such as geo-hazards, floods, landslides, and radioactivity. Floods are common along Lunga-lunga, Jego areas and the River Uмба and Ramisi caused by impeded drainage. Geo-hazards are found in geologically unstable areas due to rift and include areas of Mrima, Dzombo, Kirk and Kikoneni areas. Radioactivity as an environmental risk is experienced in the titanium mining areas and Mrima areas where there are rare earth elements. It is important that measures are put in place to mitigate these hazards and risks.

Key Actions to be taken to Support the Strategy:

- Identify and map out the geo-hazard areas;
- Discourage large scale development and settlements in the most vulnerable areas;
- Ensure implementation of the relevant environmental management plans during and after titanium mining;
- Undertake catchment conservation and drainage improvement programmes;
- Conduct resettlement programmes for populations that fall within the risk prone areas; and
- Establish a fully equipped disaster response and management unit (DRMU) and train quick response units within the local authorities and security establishment.

Strategy 8: Diversification and Improvement of Tourist Attractions and Products

Kwale has diverse tourist attractions that are not fully exploited and if appropriately developed would ensure that every part of the district benefits from the tourism industry.

Key Actions to be taken to Support the Strategy:

- Develop new tourist circuits namely Kwale-Shimba Hills-Msambweni, Mwabungo-Shimba Hills-Kwale, Kinango-Mkongani-Lukore-Shimba Hills, Tsunza-Kinango-Kwale, Kuranze Triangle;
- Encourage cultural villages that are well distributed in the region;
- Promote eco-tourism as a tool for achieving rational utilization of environmental and cultural resources;

- Encourage location of employment, trade, living, recreation/ entertainment, higher education, high level or specialized medical services through targeted incentives to potential investor and service providers.

Strategy 2: Adopt a Hierarchy of Urban Centers as Basis for Service Provision

The plan proposes a hierarchy of urban centers through which the various levels of services can be provided to the populace in the region.

Key Actions to be taken to Support the Strategy:

- Prepare local physical development plans for all the service centers identified in the regional plan;
- Provide services proportionate to the level of the urban centre; and
- Encourage settlement within these service centers.

Strategy 3: Foster Land Use and Transport Integration to Form an Urban Network

This will be done by:

- Developing an integrated land use and transport network with activity and transport corridors as major elements in the movement of goods and people;
- Developing (non-industrial) activity centers at selected locations (growth centers) along activity corridors to support the development of the public transport network with strong centers at the ends of each corridor; and
- Encouraging mixed-use development in activity centers, including higher density residential developments and employment generators, especially where centers are well served by public transport and have high amenity walkable environments.

The strategy of Urban Network is intended to optimize land use and transport linkages between centers and public transport to be supported by a range of activities at the centers as well as the land use along the corridors linking the centers. Strong centers at each end of the activity corridors support an effective public transport system in both directions along the corridor. The major elements of the urban network are the activity corridors, activity centers and transport corridors.

Key Actions to be taken to Support the Strategy:

- Encourage employment to locate within the growth centers, around transport interchanges and, selectively, along activity corridors to support public transport with encouragement of business mobility and small businesses;
- In developed areas, reinforce established activity centers, to serve as incentives for development;
- Strengthen specialized centers through the development of complementary land use to capitalize on the opportunity provided by their functions;
- Encourage the application of best practice urban design principles in activity centers to establish and maintain higher levels of amenity and functionality for center users, business owners and operators;
- Undertake a detailed evaluation of priority activity and transport corridors;
- Commence implementation of the best options as a demonstration project and review further priorities for activity and transport corridors;
- Through partnership arrangements, undertake and facilitate demonstration projects in activity centers to promote transit oriented development, mixed use and higher density residential projects and to demonstrate best practices in design and implementation;
- Through a local dialogue process, align employment locations so they can take advantage of increased opportunities to use public transport for journeys to work; and
- Support and partner with local government in the provision of place-based capacity to manage the development and implementation of plans for primary and secondary activity centers and activity corridors.

Strategy 4: Use Land Resources Efficiently by Making Fuller Use of Existing Urban Land to Support Additional Residential Development within Existing Urban Areas

Housing is a sector with great multiplier effect and influence on the settlement pattern and economy on the use of the land resource. The existing urban centers have opportunities in terms of existing infrastructure for provision of additional housing and these opportunities should be exploited.

Key Actions to be taken to Support the Strategy:

- In association with local government, community, major government and private landholders and industry stakeholders, undertake a detailed appraisal of the extent of the opportunities for providing additional houses;
- Develop regional housing strategy that integrates an audit of existing housing stock (which includes tenure arrangements, stock, demographics, household structure) with projected population, household and dwelling requirements; and
- Define smaller areas and associated targets which are to be subject of participatory processes designed to determine how these targets can be achieved within the parameters established by the planning strategy.

Strategy 5: Manage Urban Growth to Limit Urban Sprawl Through a Development Staging Strategy and Other Complementary Techniques

Physical growth and expansion of urban settlements need to be managed appropriately for efficient use of land and economy in infrastructure provision. Urban sprawl is evident in areas of Ukunda, Diani and Likoni areas along the major transport arteries.

Key Actions to be taken to Support the Strategy:

The main techniques to be applied in managing urban growth are as follows and need to be put into effect by government, industry and the community.

- Prepare structure and zoning plans for the identified areas;
- Support development that is in accordance with an adopted staging strategy, which is developed through partnership arrangements;
- Take planning decisions to create more housing in specified targeted locations;
- Develop new urban areas using principles from livable neighbourhood and embedded in development control policies designed to achieve sustainable community development;
- Intensify the use of existing urban land through better use of existing infrastructure
- Develop the public transport network and complementary infrastructure as key element; in supporting urban growth;
- Use minimum density zoning to encourage efficient use of land and requiring development densities to achieve a certain level;
- Develop a focused public investment plan to outline the location and timing of planned public infrastructure. Conceptually this is designed to concentrate new public infrastructure investment into those areas where growth is to be encouraged; and
- Provide a time frame for development of allocated plots for the various users.

Key Actions to be taken to Support the Strategy:

- Undertake a technical assessment of land availability based on current town planning schemes, structure plan commitments, development intentions and policy directions;
- Undertake a technical assessment of the infrastructure requirements for available land;
- Develop a focused public investment plan for the provision and timing of infrastructure;
- Prepare the structure plans for the growth centers and for activity corridors identified in the regional plan; and
- Develop a comprehensive public transport strategy to support the activity corridors and other growth areas.

Strategy 6: Provide Timely, Appropriate and Efficiently Serviced Employment Land, Supported by Appropriate Infrastructure which is Linked to the Urban Network

Industrial activity centers generate considerable employment numbers and this is associated with the need for good accessibility by wide range of transport options, especially public transport.

Key Actions to be taken to Support the Strategy:

- Assess existing infrastructure capacities and utilization;
- Identify areas with significant underutilized infrastructure;
- In planning and developing activity corridors and centers liaise with owners of nearby industrial and commercial areas to establish what additional links might be provided from the corridor to the area so that benefits of the urban network can flow more easily into these areas; and
- Have local authorities set aside land for urban and industrial development.

Strategy 7: Enhance the Link Between the South Coast and Mombasa City

The Region enjoys a very dynamic symbiotic interaction with Mombasa City and this relationship needs to be strengthened. Mombasa offers employment opportunities while the region houses a pool of cheap labor. Thousands of people commute every morning to Mombasa through the ferry which is not only slow but costly for those who own vehicles.

Key Actions to be taken to Support the Strategy

- Construct the Dongo-Kundu by-pass to relieve the ferry of congestion and reduce travel time caused by delays at the ferry;
- Develop a dual carriage between Likoni and Lunga-lunga, and Mombasa-Mariakani;
- Make the Mtongwe ferry operate full time throughout the week;
- Construct jetties at Tsunza and Mkupe, and provide ferry services to enhance connectivity between Tsunza and Miritini;
- Construct a bridge at Muache to link Lutsangani and Mwamdudu (Mazeras); and
- Replace existing fleet of ferries with new ones at the Likoni crossing.

Strategy 8: Promote Agro-based Industries

The region has a lot of potential in industrial crops and livestock in terms of bixa, cashew nuts, coconuts, mangoes, sugar cane and dairy and beef cattle among others. This potential needs to be exploited to foster industrial development in the region.

Key Actions to be taken to Support the Strategy:

- Improve livestock husbandry to enhance milk and beef production through stock improvement, enhanced spraying and dipping; tsetse fly control, milk collection and setting up cooling plants; enhanced water provision by desilting and maintaining the earth dams in Kinango and Samburu areas, and establishing other range management programmes;
- Improve marketing through education;
- Provide credit to farmers;
- Develop and improve facilities such as slaughter houses and tanneries in livestock producing areas;
- Revitalize bixa, cashew nut, sugar industries;
- Diversify agriculture production to include sunflower, horticulture and floriculture;
- Designate Economic Processing Zones (EPZ);
- Enforce the Economic Exclusive Zones law (EEZ); and
- Facilitate the local fishermen and women to utilize the resources within EEZ.

Strategy 9: Promotion of the Exploitation of Earth Resources

The region has diverse mineral resources which should be exploited to provide employment and generate income and ancillary enterprises.

Key Actions to be taken to Support the Strategy:

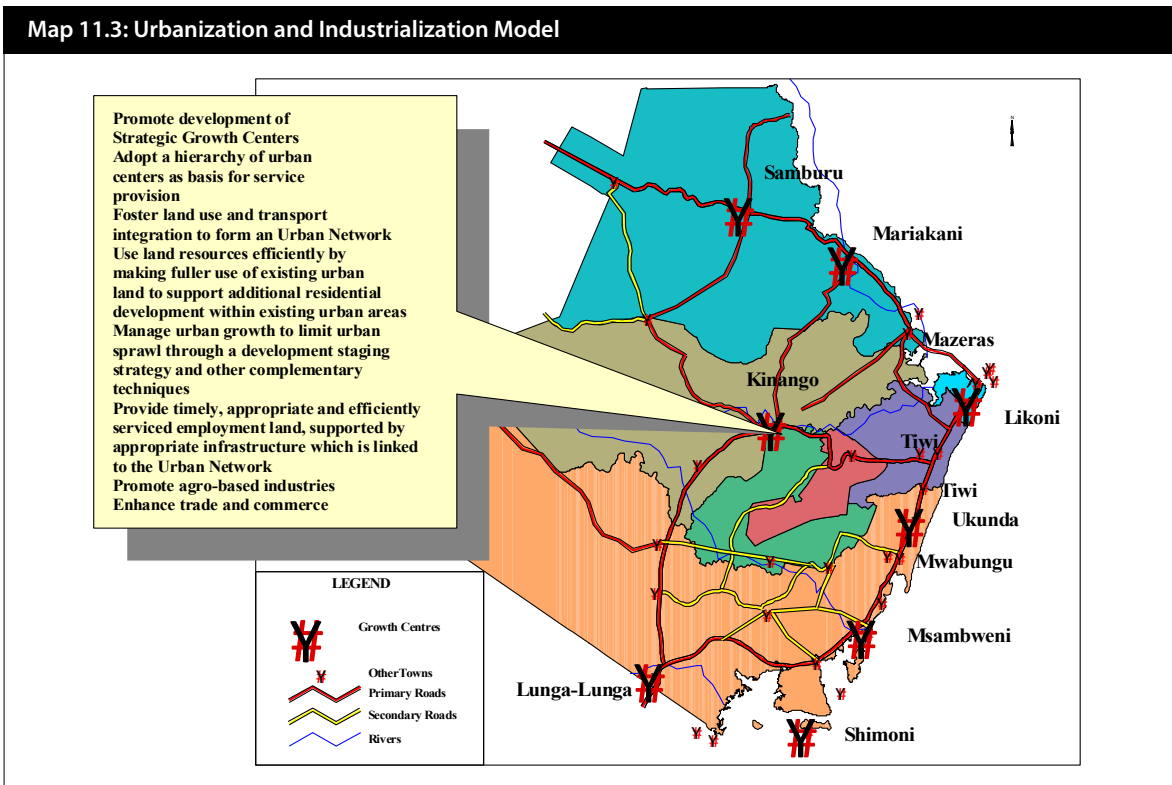
- Undertake a geo- survey to establish the quantity and value of minerals;
- Enhance mineral exploration and mining in the Triangle and titanium in Kwale area; and
- Step up off-shore exploration of hydrocarbons.

Strategy 10: Enhance Trade and Commerce

Most business activities have a spatial skew favoring major transport corridors leading to Mombasa City, with Ukunda and Likoni enjoying the proximity influence while other centers have stagnated. Other factors influencing this pattern include: quality of the service road serving the center; security; the economic potential of the hinterland and availability of auxiliary services and other infrastructure.

Key Actions to be taken to Support the Strategy

- Expand small business development support through existing and identified programmes;
- Improve key infrastructure in the selected service centers;
- Open up more areas to tourism development; and
- Strengthen tertiary institutions to provide entrepreneurial training.



Source: Physical Planning Department, 2004.

Integrated Development Plan

12.1 INTRODUCTION

The Alternative Development Models presented in chapter 11 indicate strategies that could steer Kwale and Mombasa Mainland South to high and sustained levels of economic growth. However, each model cannot separately lead to sustainable development of the plan area. There is need to integrate the strategies of these models in order to have a spatial framework for sustainable human settlements.

This chapter presents the Integrated Regional Development Plan as the preferred model to guide development of the plan area for the next 30 years. The Plan Proposals are made along the development zones identified in Chapter 10. And the aim is to preserve the topographical and ecological conditions with a layout of specialized zones which are harmoniously linked with each other while their independence and special features are ensured.

12.2 THE COASTAL PLAIN OR CORAL RAG – THE TOURISM PROMOTION ZONE (AREA)

The Coastal Plain or Coral Rag is a narrow strip of land three to 10 kilometers wide with a length of about 255 kilometers from Likoni to Vanga defined generally by the Likoni-Vanga International Trunk Road and the Coastline. The plan proposes the enhancement of the current development trend since the area already has substantial tourism infrastructure and natural assets. Although the zone has potential for other development activities, tourism has the highest potential and should be given priority. All other activities should be directed to support tourism development.

Vision

A vibrant tourism-led economy that will ensure maximum contribution to the economic and social development of Kwale and Likoni while preserving the character, natural resources and environment on which the attractions of the region are based.

Mission

To develop the region into a world class tourist attraction for both local and foreign tourists for the benefit of the people while protecting the environment.

Objectives

- Encourage growth of the tourism industry that will generate employment and income for the benefit of the local people;
- Develop the South Coast as a unique tourist destination;
- Ensure protection of tourism resources;
- Provide for visitor satisfaction to ensure repeat visits;
- Ensure that marine resources are exploited in a sustainable manner; and
- Rehabilitate and enhance tourist infrastructure.

Strategies and Actions

a) Infrastructure Development and Improvement

- i. Roads
 - Expand the Likoni-Vanga Trunk Road to a dual carriageway with modern street furniture to form the main spine upon which the transport network in the region will hinge;

- Develop the Dongo-Kundu by-pass to enhance linkage to Mombasa Airport and access to the South Coast;
 - Develop and improve the secondary access roads to tourist facilities; and
 - Develop a parallel road along the coast to separate the coastline from the mainland. This should define the limit to hotel development, ensure access to the beach by the residents and visitors and help in monitoring sea pollution by developers.
- ii. Air transport
- Expand and improve the existing airstrips at Lunga-lunga and Wasini to provide alternative travel means for the visitors and to provide supplementary services to the Mombasa International Airport;
 - Develop strategic security posts and modern telecommunication centers in Diani, Shimoni, Ukunda, Vanga and other growth Centers. The communication Centers should provide up-to-date information on the tourist attractions in Kwale and should be linked to the national and international tourism information systems; and
 - Provide water, electricity and sanitation facilities in the tourist attraction sites.
- b) *Sustainable use and Conservation of the Marine Resources*
- Protect and develop the coast through coastal zone management plan including the implementation of a targeted coastal protection programme to protect priority assets especially the Likoni and Diani sea shores and beaches which are experiencing serious erosion;
 - Preserve and protect the marine environment through the adoption and implementation of up-to-date pollution legislation and measures in accordance with international standards; maintain and develop emergency intervention and prevention capabilities and ongoing monitoring of the marine environment;
 - Enhance the marine bio-diversity sites of Mpunguti and Kisite National Reserves and develop the Chale and Diani National Reserves while conserving the mangrove forests and the coral reef;
 - Enhance marine-based tourism e.g. water sports and fishing;
 - Expand unique tourist resorts in Shimoni and Vanga areas and the Wasini Islands;
 - Develop facilitative infrastructure, including landing beaches, cooling plants and access roads to reduce wastage and to achieve the required sanitary and health standards;
 - Improve landing sites; construct fish *bandas* and jetties for both fresh and marine fishing; and
 - Promote deep sea fishing and fish export.
- c) *Sustainable Land Use Planning*
- Initiate dialogue and participatory planning activities among all the stakeholders in the tourism industry;
 - Mainstream livable neighborhoods planning concepts, strategic planning and environmental characteristics influencing developers rather than an ad hoc approach to development;
 - Empower local government and the communities to promote and defend the environment and heritage of the society through training of the chief officers and sensitization of councilors;
 - Undertake deliberate special programmes to train local people in tourism development projects in collaboration with the investors in the tourism industry;
 - Initiate fora for dialogue between local communities and hoteliers through corporate social responsibility;
 - Enable KTB to facilitate local communities' tourism projects and small and micro-enterprises in tourism to forge partnership and linkages with the dominant tour operators;
 - Support local community members to gain access to increased representation on boards and committees and provide training on effective board membership and management;
 - Support local groups and local initiatives such as dance troupes, drama and carving groups; and
 - Promote better policies to include local communities and leaders and special interest groups like the women and youth in programs through joint awareness raising and memorandum of understanding with key agencies in the tourism industry.

d) Promotion of Indigenous Culture

- Develop a regional cultural center and cultural trails;
- Support partnership programmes by incorporating indigenous communities' heritage, language, culture and traditional practices in primary, secondary, tertiary and informal education programmes;
- Generate appropriate vocational training schemes and business development programmes to support beach boys enterprises; and
- Document and disseminate the cultural values and history of the indigenous people.

E) Diversification of Sources of Employment and Income-generating Opportunities

- Promote agro-based industries revitalize collapsing industries like bixa, cashew nut and Rami sugar industry, dairy medium plants and tanneries;
- Initiate and support off-shore exploration for hydrocarbons;
- Encourage small and medium-size enterprises to be located in the service centers that have been identified;
- Encourage housing development in the service centers and use of local materials for construction;
- Develop facilitative infrastructure including landing beaches, cooling plants and access roads, to reduce wastage and to achieve the required sanitary and health standards;
- Encourage growth of micro-finance institutions to provide credit;
- Improve landing sites, construct fish *bandas* and jetties for both fresh and marine fishing;
- Promote deep sea fishing and fish export; and
- Develop marine water fish farming extension packages.

F) Use Land Resources Efficiently by Making Fuller Use of Existing Urban Land to Support Additional Residential Development within Existing Urban Areas

Housing is a sector with a great multiplier effect and influence on the settlement patterns and economy on the use of the land resource. The existing urban centers have opportunities in terms of existing infrastructure for provision of additional housing and these opportunities should be exploited.

- In association with local government, the community, major government and private landholders and industry stakeholders, undertake a detailed appraisal of the extent of the opportunities for providing additional houses;
- Develop regional housing strategy that integrates an audit of existing housing stock (which includes tenure arrangements, stock, demographics, household structure) with projected population, household and dwelling requirements; and
- Define smaller areas and associated targets which area to be subject of participatory processes designed to determine how these targets can be achieved within the parameters established by the planning strategy.

G) Manage Urban Growth to Limit Urban Sprawl through a Development Staging Strategy and Other Complementary Techniques

Physical expansion and growth of urban settlements need to be managed appropriately for efficient use of land and economy in infrastructure provision. Urban sprawl is evident in areas of Ukunda, Di-ani and Likoni along the major transport arteries.

- Prepare structure and zoning plans for the identified areas, especially for Likoni and Ukunda areas;
- Support development that is in accordance with an adopted staging strategy, which is developed through partnership arrangements;
- Take planning decisions to create more housing in specified targeted locations;
- Develop new urban areas using principles from livable neighbourhood and embedded; in development control policies designed to achieve sustainable community development;
- Intensify the use of existing urban land through better use of existing infrastructure planned densification;
- Develop the public transport network and complementary infrastructure as key element in supporting urban growth;

- Use minimum density zoning to encourage efficient use of land and require development densities to achieve a certain level; and
- Develop a focused public investment plan to outline the location and timing of planned public infrastructure. Conceptually, this is designed to concentrate new public infrastructure investment into those areas where growth is to be encouraged.

12.3 THE FOOT PLATEAU AND THE COASTAL UPLANDS (AGRICULTURE PROMOTION ZONE)

Vision

A sustainable agricultural sector that would generate sufficient income and employment opportunities to support a dignified life of the individuals and families.

Objectives

- To ensure that there is self-reliance in food production;
- To enhance and sustain the land-based economic activities;
- To diversify the employment and income-earning opportunities; and
- To improve the standard of living of Kwale people through availability of services and infrastructure.

Strategies and Actions

a) Enhance Food Security Systems

Kwale District is a food deficient district and receives relief supplies every year. There is need for effective food supply in sufficient quantities. Food supplies to all families should also be well-balanced, of good quality and of different types. The problem is compounded by the low levels of income and low agricultural productivity.

- Highly efficient food security prediction and warning systems should be established including forecasts of natural conditions which could have adverse effects on agricultural production and be able to monitor the growth of food environments. Special emphasis should be paid to the monitoring of such factors as soil fertility, soil and water erosion;
- Systems for food storage, processing and distribution as well as for grain storage should be improved;
- Maintenance of strategic food reserves; and
- Strengthening drought management and mitigation system.

b) Increase Agricultural Inputs and Improve Productivity

To meet the desired level of production, additional input of materials, energy and financial resources will be required. There is also a need to improve infrastructure for agriculture, improvement of agro-ecological environments and enhancement of aggregate agricultural productivity.

- Provision of credit to farmers;
- Establishment of farm machinery and equipment programme (tractor hire scheme); and
- Enhancing marketing linkages and opportunities to raise agricultural incomes.

c) Improve Extension Delivery Systems

To achieve the objectives of highly productive and efficient food production, in addition to increasing inputs of materials for production, scientific and technical expertise should be fully utilized to improve efficiency of production and to maintain sustainable agricultural development.

- Strengthen extension delivery system;
- Involve the private sector in extension service delivery;
- Improve access to credit through micro-financing and other innovative credit systems; and
- Implement the National Agriculture and Livestock Extension Programme.

d) Improve Access to Infrastructure and Services

- Implement Roads 2000 routine maintenance of feeder roads to be carried out; periodic maintenance of feeder roads to be done, sustain employment of casual contractors; and undertake

- labor intensive road maintenance through local recruitment; develop, maintain, rehabilitate and manage the road network by operationalising the District Roads Committees;
- Promote cost-effective and quality management of the road network through routine maintenance of roads; periodic maintenance of trunk roads; reconstruction and upgrading of trunk roads;
- Develop a dual carriage between Likoni and Lunga-lunga, and Mombasa and Mariakani;
- Accelerate access to rural electrification programme to more areas in the region;
- Promote wind and solar energy technologies;
- Improve the availability of rural water supplies through rehabilitation and augmentation programme along with transfer of schemes to communities and other local actors;
- Develop plan for additional water supply facilities and mobilize resources for their construction;
- Enhance water conservation rehabilitate/ construct dams, pans, boreholes in partnership with user communities and on contract with the private sector;
- Increase the number and quality of health centers, paying particular attention to the issue of drug supply and staffing;
- Enhance public health education;
- Increase the proportion of bursaries in day schools, expand bursaries and improve targeting with special emphasis on girls through better means testing;
- Provide science equipment and other support materials; and
- Enhance adult education and youth polytechnic scheme.

e) Conservation and Sustainable Use of Natural Resources

- Develop a comprehensive natural resource inventory and intensify research programmes focusing on specific aspects of the environment e.g. whole catchment, estuarine, biodiversity, renewable energy etc;
- Initiate conservation measures in the Kaya Diani, Kaya Kinondo and Kaya Chale natural forests, the Gazi, Funzi, Bodo and Ramisi wetlands, Gazi, Vanga, Funzi and Tsunza mangrove forests;
- Mitigate the human-wildlife conflict in Shimba Hills and Mwaluganje through electric fencing and creation of buffer zones;
- Increase forest cover through on-farm forest programmes and mangrove forest development and management;
- Introduce awareness raising for private property owners, including developers to protect and enhance biodiversity; and
- Introduce a tiered incentive scheme for works that target high conservation value areas and address multiple natural resource management issues.

f) Creation and Maintenance of Employment and Income-generating Opportunities

The overall objective is to diversify the rural economy and exploit the potential for economic development in an appropriate scale and manner for the benefit of the rural communities.

Off-farm income will be central to the survival of many farm families and off-farm activity will become increasingly important as a means of supporting viable households. The future lies in the creation of additional jobs in industry and services.

- Promote agro-based industries revitalize collapsing industries like bixa, cashew nut and Ramisi sugar industry, dairy medium plants and tanneries;
- Enhance titanium mining and plan settlements centered on this resource;
- Encourage small and medium-size enterprises to be located in the service centers that have been identified;
- Encourage housing development in the service centers and use of local materials for construction;
- Promote rural labor-intensive road construction and community works;
- Provide a full range of infrastructure and services in the various service centers;
- Provide entrepreneurial training;
- Develop new tourist circuits, namely Kwale-Shimba Hills-Msambweni; Mwabungo-Shimba Hills-Kwale; Kinango-Mkongani-Lukore-Shimba Hills; Susa-Kinango-Kwale;

- Encourage cultural villages well distributed in the region;
- Promote eco-tourism as a tool for achieving rational utilization of environmental and cultural resources;
- Promote souvenirs and locally made products; and
- Promote no-trace camping, retirement tourism, conference tourism.

g) *Adopt a Hierarchy of Urban Centers as Basis for Service Provision*

The plan proposes a hierarchy of urban centers through which the various levels of services can be provided to the populace in the region. This will be achieved by preparing local physical development plans for all the service centers identified in this regional plan. In addition provision of services commensurate with the level of any one particular urban centre and encouraging settlement in the centers will be pursued.

h) *Protect and Manage Water Resources*

- Enhance drainage pollution control using appropriate cost-effective and efficient technologies and urban water management to conserve resources and prevent entry to ground water and surface water resources
- Promote the collection of rainwater at private and business premises
- In preparing land use strategies, identify and secure for the longer-term areas where treated wastewater can be reused as part of a holistic approach to water resource management.

i) *Institute Disaster Preparedness and Prevention Programmes*

The region is faced with a number of environmental hazards and risks such as geo-hazards, floods, landslides, and radioactivity. Floods are common along Lunga-lunga, Jago areas and the Rivers Umba and Ramisi caused by impeded drainage. Geo-hazards are found in geologically unstable areas due to faulting and include areas of Mrima, Dzombo, Chiruku, Kikoneni areas. Radioactivity as an environmental risk is experienced in the titanium mining areas and Mrima where there are rare earth elements. It is important that measures are put in place to mitigate these hazards and risks.

- Identify and map the geo-hazard areas;
- Restrict development and settlements in the most vulnerable areas;
- Provide appropriate protective measures for those involved in the titanium mining;
- Initiate catchments conservation and drainage improvement programmes;
- Undertake resettlement programmes for populations that fall within the risk-prone areas; and
- Train quick response units within the local authorities and security establishment.

j) *Promote Agro-based Industries*

The region has a lot of potential in industrial crops and livestock in terms of bixa, cashew nuts, coconuts, mangoes, sugar cane and dairy and beef cattle, among others. This potential needs to be exploited to foster industrial development in the Region.

- Improve livestock husbandry to enhance milk and beef production through stock improvement, enhanced spraying and dipping; tsetse fly control, milk collection and establishment of cooling plants; enhanced water provision;
- Improve marketing through education and credit provision to improve on facilities;
- Develop slaughter houses and tanneries in livestock producing areas;
- Revitalize bixa, cashew nut, sugar industries; and
- Diversify agriculture production to include sunflower, horticulture and floriculture.

12.4 THE NYIKA PLATEAU (LIVESTOCK PROMOTION ZONE)

Vision

To create a sustainable livestock-based economy that generates sufficient income and employment opportunities to allow individuals and families to live with dignity and an environment where all communities will enjoy access to education, training and an adequate level of social and other services, and infrastructure.

Objectives

- To enhance the employment and income opportunities by improving the livestock industry;
- To diversify the economic activities through exploitation of the existing natural resources; and
- To open up the area to facilitate the active participation of the residents in the market economy.

Strategies and Actions

a) Promote Livestock production and Marketing

- Promote animal health by reactivating and expanding dipping, breeding and clinical services, including monitoring and control of animal diseases;
 - Promote dairy goats as an emerging source of milk, and other small stock activities such as poultry and bee-keeping;
 - Support the development of facilities for milk handling such as collection and cooling centers;
 - Encourage the private sector and local authorities to establish small abattoirs and meat processing facilities; and
 - Rehabilitate and construct of water dams in Kinango Division.

b) Promoting Exploitation of Earth Resources

The region has diverse mineral resources which should be exploited to provide employment and generate income and ancillary enterprises.

- Enhance mineral exploration and mining in the Triangle and titanium in Kwale area; and
- Step up off-shore exploration of hydrocarbons.

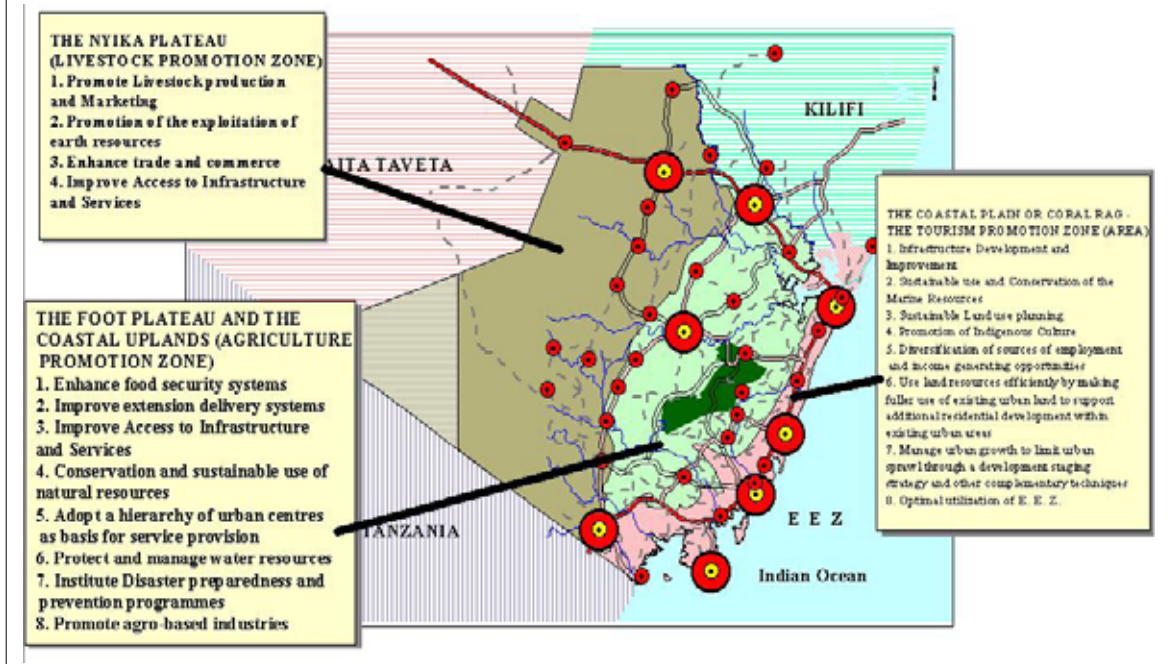
c) Enhance Trade and Commerce

- Expand small business development support through existing and identified programmes;
- Improve key infrastructure in the selected service centers;
- Open up more areas to tourism development; and
- Strengthen tertiary institutions to provide entrepreneurial training.

d) Improve Access to Infrastructure and Services

- Implement Roads 2000 routine maintenance of feeder roads to be carried out; periodic maintenance of feeder roads to be done, sustain employment of casual contractors; and undertake labor-intensive road maintenance through local recruitment;
- Develop, maintain, rehabilitate and manage the road network by operationalising the District Roads Committees;
- Promote cost-effective and quality management of the road network through routine maintenance of roads; periodic maintenance of trunk roads; reconstruction and upgrading of trunk roads;
- Accelerate access to rural electrification programme to more areas in the region;
- Promote wind and solar energy technologies;
- Improve the availability of rural water supplies through rehabilitation or augmentation programmes along with transfer of schemes to communities and other local actors;
- Develop a plan for additional water supply facilities and mobilize resource for their construction;
- Enhance water conservation rehabilitate or construct dams, pans, boreholes in partnership with user communities and on contract with the private sector;
- Increase the number and quality of health centers, paying particular attention to the issue of drug supply and staffing;
- Enhance public health education;
- Increase the proportion of bursaries at day schools, expand bursaries and improve targeting with special emphasis on girls through better means testing;
- Provide science equipment and other support materials; and
- Enhance adult education and youth polytechnic schemes.

12.1: The Integrated Development Plan



Plan Implementation Matrix

13.1: Plan Implementation

Objectives	Strategy	Activities/Programmes	Location	Time Frame	Implementing Agency
<ul style="list-style-type: none"> - To encourage growth of tourism industry that will generate employment and income for the benefit of the local people. - To develop South Coast as a unique tourist destination. - To ensure protection of tourism resources. - To provide for visitor satisfaction to ensure repeat visits. - To ensure that marine resources are exploited in a sustainable manner. - Rehabilitate and enhance tourist infrastructure. 	<p>Infrastructure development and improvement of</p> <p>a) Roads</p>	<ul style="list-style-type: none"> - Expand of Likoni-Lunga-lunga and Mombasa - Mariakani trunk road to dual carriage way. - Develop the Dongo-Kundu by-pass. - Develop & improve secondary access roads to tourist facilities. - Develop a parallel road along the coast to separate the coast line from the mainland. - Repair, upgrade and maintain the existing road network. 	<p>Likoni to Lunga-lunga and Mombasa to Mariakani.</p> <p>Dongo-Kundu, Miritini.</p> <p>Likoni, Tiwi, Ukunda, Galu/Kinondo, Gazi, Msambweni, Shirazi/Bodo Mwazaro, Shimoni, Wasini Majoreni and Vanga.</p> <p>Coastal Strip</p> <p>Shelly Beach, Tiwi Beach, Diani Beach, Msambweni Beach, Shirazi/Bodo, Mwazaro Beach, Shimoni Majoreni, and Vanga.</p>	<p>Medium term</p> <p>Long term</p> <p>Short term</p> <p>Medium term.</p> <p>Continuous</p>	<p>MoR&PW MoLG, CDF, Private Sector.</p> <p>MoR&PW, Private Sector.</p> <p>MoR&PW, MoLG, CDF, Private Sector.</p> <p>MoR&PW, MoLG, CDF Private Sector.</p> <p>MoR&PW MoLG, CDF-Private Sector.</p>

Objectives	Strategy	Activities/Programmes	Location	Time Frame	Implementing Agency
	b) Air transport	<ul style="list-style-type: none"> - Expand and improve the existing air strips to provide alternative travel means for the visitors to supplement the Mombasa international airport. 	Diani, Lunga-lunga and Wasini.	Medium term	KAA, MoT&C MoR&PW Development Partners Kenya Ferry, MoT&C.
	c) Water transport	<ul style="list-style-type: none"> - Make the Mtongwé Ferry operate full time throughout the week. - Construct jetties at Tsunza and Mkupe, and provide ferry services to enhance connectivity between Tsunza and Miritini. - Construct a bridge at Muache to link Lutsangani and Mwamdudu (Mazeras). - Replace the existing old fleet of ferries with new ones at the Likoni crossing. - Develop water transport (ferries) between Likoni, Shimoni, Vanga, Pemba and Zanzibar. 	Mtongwé Tsunza and Mkupe (Miritini) Muache Likoni	Short term Short term Short term Short term	Services (KFS) Kenya Ferry Services MoR&PW, Development Partners, NGOs. MoR&PW Development Partners, NGOs. Kenya Ferry Services (KFS), MoT&C.
	d) Security and telecommunications	<ul style="list-style-type: none"> - Develop strategic security posts and modern telecommunication centres. 	Likoni, Diani, Shimoni, Ukunda, Vanga and other growth centres.	Short term	GoK, Development Partners, MoT&C Republic of Tanzania. MOIS, NGOs, MOI&T, CBOs Airtel & Safaricom Community.
	e) Water, electricity and sanitation	<ul style="list-style-type: none"> - Provide water, electricity and sanitation facilities in the tourist attraction sites. 	Shelly Beach, Tiwi Beach, Diani Beach, Msambweni Beach, Shirazi/Bodo, Mwazaro Beach, Shimoni Majoreni, and Vanga.	Short term	MoWID MoE, MoLG Water & Sanitation Services Board NGOs, CDF Community, CBOs.

Objectives	Strategy	Activities/Programmes	Location	Time Frame	Implementing Agency
	Sustainable use and conservation of marine resources.	<ul style="list-style-type: none"> - Protect and develop the coast through coastal zone management plan. - Preserve and protect the marine environment through the adoption and implementation of up to date pollution legislation and measures in accordance with international standards. - Maintain and develop emergency intervention and prevention capabilities, on monitoring of the marine environment. - Enhance and develop marine biodiversity sites and conserve coral reefs and mangrove forests. - Enhance and develop marine based tourism e.g. water sports and fishing. - Identify & develop and expand unique tourist resorts. - Reposes all beach access roads and landing sites allocated to private developers. - Identify & develop facilitative infrastructure including landing beaches, cooling plants and access roads to reduce wastage and to achieve the required sanitary and health standards. - Secure all fish landing sites by acquiring titles deeds. - Improve landing sites by constructing fish bandas and jetties. 	<p>Whole region</p> <p>Whole region</p> <p>Coastal strip</p> <p>Mpunguti, Chale, Wasini and Vanga Likoni and Diani.</p> <p>Coastal strip</p> <p>Shelly Beach, Tiwi Beach, Diani Beach, Msambweni Beach, Shirazi/Bodo, Mwazaro Beach, Shimoni Majoreni, and Vanga.</p> <p>Coastal strip</p> <p>Coastal strip</p> <p>Coastal strip</p> <p>Landing sites</p>	<p>Continuous</p> <p>Continuous</p> <p>Continuous</p> <p>Continuous</p> <p>Medium term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p>	<p>MoE&NR, KMRI, NIMK, NGOs, CBOs, MoT.</p> <p>MoE&NR, KMRI, NIMK, NGOs, CBOs, Local Authority.</p> <p>MoE&NR, KMRI, NIMK, NGOs, Local Authority, KWS.</p> <p>MoE&NR, KMRI, NIMK, NGOs, Local Authority, KWS</p> <p>MoT, KMRI, NIMK, NGOs, Local Authority, KWS</p> <p>MoL, Local Authority, Community</p> <p>MoPW, CDF, KMRI, MoCD, Local Authority, Community, NGOs, CBOs, MoH, MoL&FD.</p> <p>Local Authority, Community, MoL, NGOs, CBOs MoCD.</p> <p>MoPW, CDF, KMRI, MoCD, Local Authority, Community, NGOs, CBOs, MoH.</p> <p>MoL&FD</p> <p>MoR&PW, KMRI, MoCD, Local Authority, Community, NGOs, CBOs, MOH, MoL&FD.</p> <p>MoL, KMRI, MoCD, Local Authority, Community, NGOs, CBOs.</p> <p>MoL, KMRI, MoR&PW, Local Authority, MoCD Community, NGOs, CBOs.</p>

Objectives	Strategy	Activities/Programmes	Location	Time Frame	Implementing Agency
	Sustainable land use planning.	<ul style="list-style-type: none"> - Initiate dialogue and participatory planning activities among all the stakeholders in the tourism industry. - Maintain livable neighborhood planning concept, strategic planning and environmental characteristics influencing developers rather than ad hoc approach to development. - Empower the local authorities and communities to promote and defend environmental & heritage through training of the chief officers and sensitization of the councillors. - Undertake deliberate special programmes to train local people in tourism development projects in collaboration with the investors in the tourism industry. - Initiate forums for dialogue between local communities and hoteliers through corporate social responsibility. - Facilitate local communities' tourism projects and small and micro-enterprises in tourism to forge partnership and linkages with the dominant tour operators. - Support local; community members to gain access to increased representation on boards and committees and provide training on effective board memberships. 	<p>Whole region</p> <p>Whole region</p> <p>Kwale County Council, Kwale Town Council and Mombasa Municipal Council.</p> <p>Community of whole region.</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p>	<p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Medium term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p>	<p>MoT, MoL, NGOs, CBOs, KTB, MoLG, Community.</p> <p>MoT, MoL, KTB, Local Authorities MoLG, CBOs NGOs, Community.</p> <p>NGOs, Community MoT, MoCG&S KTB, NGOs, Community, Local Authorities.</p> <p>MoT, MoCG&S KTB, MoT&I, Community, NGOs.</p> <p>-MoT, MoCG&S -KTB, MoT&I, Community, NGOs.</p> <p>-MoT, MoCG&S -KTB, MoT&I, Community, NGOs.</p> <p>-MoT, MoCG&S -KTB, MoT&I, Community, NGOs.</p>

Objectives	Strategy	Activities/Programmes	Location	Time Frame	Implementing Agency
	d) Promotion of indigenous culture	<ul style="list-style-type: none"> - Develop a regional; cultural centre and cultural trails. - Support partnership programme in incorporating indigenous communities' heritage, language, culture and tradition practices in primary secondary and tertiary and informal education programs. - Generate appropriate vocational training schemes and business development programs to support beach Operators enterprises. - Document and disseminate the cultural value and practices of the indigenous people. 	<p>Diani, and branches at Kwale, Kinango and Shimoni.</p> <p>Whole region</p> <p>Shelly Beach, Tiwi Beach, Diani Beach, Msambweni Beach, Shirazi/Bodo, Mwazaro Beach, Shimoni Majoreni, and Vanga.</p> <p>Whole region</p>	<p>Short term</p> <p>Continues</p> <p>Short to medium term</p> <p>Short term</p>	<p>Community, MoCG&S, CDF MoE, MoT, NMK Private Sector, NMK.</p> <p>MoE, Kwale County Council, NGOs, Community, Tourist Hotels, MoT&i, MoT, NGOs, Beach operators.</p> <p>-Community -MoCG&S, NGOs -MoE, MoT, NMK.</p> <p>-MoT, MoCG&S -KTB, MoT&i, Community, NGOs.</p>
	Diversification of sources of employment and income generating opportunities.	<ul style="list-style-type: none"> - Promote deep sea fishing and fish export. - Develop marine water fish farming extension packages. - Develop facilitative infrastructure including landing breaches, cooling plants and access roads, to reduce wastages and to achieve the required sanitary and health standards. - Encourage growth of microfinance institutions to provide credit. - Improve landing sites; construct fish bandas and jetties. - Establish University, college for Marine biology and training facilities for fishing. 	<p>EEZ</p> <p>Tsunza, Mtongwe, Likoni, Gazi, Shirazi/Bodo, Shimoni, Majoreni, Vanga.</p> <p>Mbuguni, Tsunza, Mtongwe, Likoni, Tiwi, Diani, Gazi, Msambweni, Shirazi/Bodo, Shimoni, Majoreni, Vanga.</p> <p>Whole region</p> <p>Whole region</p> <p>Shimoni</p>	<p>Long term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Long term</p>	<p>Mol.&F, KFRI, Community, NGOs, CBOs.</p> <p>Mol.&F, KFRI, Community, NGOs, CBOs.</p> <p>Mol.&F, KFRI, Community, NGOs CDF, CBOs.</p> <p>MOCED, MOT&i, CBOs, NGOs</p> <p>Mol.&F, MoT&i, MoCD, Community, NGOs.</p> <p>Mol.&F, MoT&i, MoCD, Community, NGOs, MoE, Universities.</p>

Objectives	Strategy	Activities/Programmes	Location	Time Frame	Implementing Agency
	Use land resources efficiently by making fuller use of the existing urban land to support additional residential development within existing urban areas.	<ul style="list-style-type: none"> - Undertake a detailed appraisal of the extent of the opportunities for providing additional housing. - Develop regional housing strategy that integrates and audits of the existing housing stocks with projected population, households and dwelling. requirement. - Define smaller areas with associated targets which area to be subject of the participatory processes designed to determine how these targets can be achieved within the parameters established by the planning strategy. 	<p>Likoni, Ukunda/Diani, Msambweni, Shimoni, Lunga-lunga, Vanga.</p> <p>Likoni, Ukunda/Diani, Msambweni, Shimoni, Lunga-lunga, Vanga</p> <p>Likoni and Ukunda/Diani.</p> <p>Likoni, Ukunda/Diani, Msambweni, Shimoni, Lunga-lunga, Vanga</p> <p>Likoni and Ukunda/Diani.</p>	<p>Short term</p> <p>Medium term</p> <p>Short term</p>	<p>MoL, MoLG, MoHousing, Local Authorities.</p> <p>MoL, NHC MoHousing, MoLG, Local Authorities.</p> <p>MoL, MoHousing. Local Authority, NGOs, CBOs, Community.</p>
	Diversify and improve tourist attractions/products	<ul style="list-style-type: none"> - Develop new tourist circuits - Encourage cultural villages well distributed in the region. - Promote souvenirs and locally made products to sale to tourist in cultural villages. - Promote eco-tourism as a tool for achieving rational utilization of environmental and cultural resources - Promote no-trace camping, retirement tourism, conference tourism. 	<p>- Diani-Kwale-Shimba Hills- Msambweni-Mwabungo-Shimba Hills.</p> <p>- Diani-Kwale- Kinango- Mkongani -Lukore - Shimba Hills.</p> <p>- Diani- Kwale- Tsunza-Kinango Diani-Kuranze Triangle.</p> <p>Samburu, Tsunza, Kinango, Lukore, Mkongani, Shimba Hills, Mwabungo, Msambweni, Diani, Kwale, Kuranze, Likoni</p> <p>Whole region</p>	<p>Medium term</p> <p>Short term</p> <p>Short term</p> <p>Continuous</p> <p>Short to medium term</p>	<p>MoPW, MoT, CDF, Local Authority, NGOs, KWS.</p> <p>MoT, MoC&NH, CDF, Local Authority, NGOs, CBOs, Community.</p> <p>MoT, MoC&NH, CDF, Local Authority, NGOs, CBOs, Community.</p> <p>MoT, MoC&NH, CDF, Local, KWS Authority, NGOs, CBOs, Community</p> <p>MoT, KWS, Local Authority, NGOs, MoT&I.</p>

13.2: The Foot Plateau and the Coastal Uplands — Agricultural Promotion Zone

Objectives	Strategy	Programs/Activity	Location	Timeframe	Implementing Agency
To ensure that there is self-reliance in food production.	Enhance food security systems	<ul style="list-style-type: none"> - Research on soils in the region. - Collate and document information on soil, soil fertility, and water erosion, crops, and monitor the same. - Disseminate information on best practice in agriculture. - Develop farmer training programmes. - Strengthening and upgrading of KARI substation at Matuga. - Develop an inventory of the status of the land in region. - Develop a program for comprehensive land processing for registration - Developing a program for managing human wildlife conflict. - Provide adequate and quality extension services. - Encourage cash crop farming to improve the cash economy. - Promote value adding on agricultural produce. - Develop an efficient marketing system for crops and livestock. - Revive and rehabilitate Collapsed infrastructure. 	<p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>KARI Matuga</p> <p>Whole region</p> <p>Trust Land, absentee landlords land (squatters)</p> <p>Areas surrounded by Shimba Hills game reserve, forests, along Ramisi River.</p> <p>Whole region.</p> <p>Agriculture promotion zone.</p> <p>Coconut, cashewnut, oranges, mangoes, simsim.</p> <p>Whole region</p> <p>Whole region</p>	<p>Medium term</p> <p>Medium term</p> <p>Continuous</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Continuous</p> <p>Continuous</p> <p>Continuous</p> <p>Short term</p> <p>Short term</p>	<p>MoA, MoE&NR, KARI, NGOs.</p> <p>MoA, MoE&NR, KARI, NGOs.</p> <p>MoA, KARI, NGOs, Community.</p> <p>MoA, KARI, NGOs, Community.</p> <p>MoA, KARI.</p> <p>MoL, Local Authority, Community.</p> <p>OP, MoL, Local Authority, Community.</p> <p>KWS, MoE&NR, Local Authority, Community, NGOs, CBOs, MOL.</p> <p>MoA, NGOs, Community.</p> <p>MoA, Private Sector, Community.</p> <p>MoA, Private Sector, Community, Applied Technology, CBOs, NGOs.</p> <p>MoA, MoCD, MoL&F Community.</p> <p>MoA, MoCD, MoL&F Community, CDF, LATF, MoPW, NGOs, CBOs.</p>

Objectives	Strategy	Programs/Activity	Location	Timeframe	Implementing Agency
		<ul style="list-style-type: none"> - Develop a partnership between KWS and local communities to manage human wildlife conflict through local ownership and management of the resource. 	Areas surrounded by Shimba Hills game reserve, forests, along Ramisi River.	Continuous	KWS, MoE&NR, Local Authority, Community, NGOs, CBOs.
	Increase agricultural inputs and improve productivity	<ul style="list-style-type: none"> - Encourage timely planting and harvesting. - Improve on systems for food storage, processing and distribution for grain storage - Create local community awareness on the right crops that can be cultivated on the various soil types. - Promote use of improved seeds. 	Whole region	Continuous	MoA, Individual farmers, NGOs, CBOs.
		<ul style="list-style-type: none"> - Development encourage cultivation of drought resistant crops and plants in the drier areas 	Whole region	Short term	MoA, Individual farmers, NC&PB NGOs, CBOs.
		<ul style="list-style-type: none"> -Promote irrigation in the drier areas. 	Whole region	Short term	MoA, Individual farmers, NGOs, CBOs.
		<ul style="list-style-type: none"> - Provide credit to farmers. 	Drier areas, Nyika plateau	Continuous	MoA, Individual farmers, NGOs, CBOs.
		<ul style="list-style-type: none"> - Enhance marketing linkages and opportunities to raise agricultural incomes. 	Lunga-lunga – Kiwegu – Jego area, flat areas the agriculture promotion zone and Nyika plateau.	Medium term	MoA, MoW&I Individual farmers, NGOs, CBOs.
		<ul style="list-style-type: none"> - Establish information desks on farming and marketing at the divisional level. 	Whole region	Continuous	MoA, Individual farmers, NGOs, CBOs, AFC, MoCD.
		<ul style="list-style-type: none"> - Sensitize and encourage local people adoption to modern farming techniques and management. 	Whole region	Continuous	MoA, Individual farmers, NGOs, CBOs, MoCD, MOI.

Objectives	Strategy	Programs/Activity	Location	Timeframe	Implementing Agency
		<ul style="list-style-type: none"> - Provide adequate and quality extension services. - Establish a weather station in Kwale. -Established highly efficient food security prediction and warning systems including forecasts of natural conditions which could have adverse effects on agricultural production. - Monitor the growth of food environments. - Strengthen drought management and mitigation system. - Improve access to credit through micro-financing and other innovative credit systems. - Involve the private sector in extension service delivery. - Employ and train and post more extension workers. - Develop contact farmer programme. - Reintroduce field and demonstration days. - Implement the national agriculture and livestock extension programme. - Coordinate the various line ministries involved in extension services. 	<p>Whole region</p> <p>Kwale</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p>	<p>Medium term</p> <p>Medium term</p> <p>Continuous</p> <p>Short term</p> <p>Continuous</p> <p>Short term</p> <p>Medium term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short term</p>	<p>MoA, Individual farmers, NGOs, CBOs Farmer Organization, extension officers, and universities.</p> <p>Dept. of Metrology, MOE& NR.</p> <p>MoA, Dept of Metrology, OP Individual farmers, NGOs, CBOs .</p> <p>MoA, individual farmers, NGOs, CBOs, OP.</p> <p>MoA, Dept of Metrology OP, Individual farmers, NGOs, CBOs.</p> <p>MoA, individual farmers, NGOs, CBOs MoCD, MoC&NH.</p> <p>GTZ, Plan International, NGOs, Community, Farmers, MoA, MoL&F.</p> <p>MoA, MoL&F, NGOs, CBOs, Farmers.</p> <p>MoA, MoL&F, NGOs, CBOs, Farmers.</p> <p>MoA, MoL&F, NGOs, CBOs, Farmers MoA, MoL&F, OP.</p> <p>MoA, MoL&F, Farmer groups.</p> <p>MoA, CDF, LATF, NGOs, CBOs, Community.</p>

Objectives	Strategy	Programs/Activity	Location	Timeframe	Implementing Agency
	Improve access to infrastructure and services	<ul style="list-style-type: none"> - Establish linkages between farmer groups and universities or research institutions. - Implement Roads 2000 initiative. 	Contact farmer groups	Medium term	MoA, CDF, LATF, NGOs, CBOs, Community, Universities, Research Institutions.
	a) Roads	<ul style="list-style-type: none"> - Develop, maintain, rehabilitate and manage the road network by operationalizing the district roads committees. 	<p>Lunga-lunga – Kinango –Samburu, Kinango – Mariakani, Shimoni – Kanana, Ukunda – Diani, Kombani – Kwale – Kinango, Mwereni – Mbita – Kilbasi – Vigurungani, Mbita – Mkang’ombe – Ndavaya, Ndavaya – Mkongani – Kwale, Kinango – Mwaluphamba, Mkongani – Lukore – Kikoneni – Msambweni, Kikoneni – Mwananyamala – Kilimangondo- Mwangulu, Kikoneni – Mirima, Mwangwei – Majoreni – Kiwegu – Jego, Kikoneni – Shimba Hills – Mwabungo, Lunga-lunga – Vanga, Mwangulu – Kuranze – Mbita, Mackinnon – Kilbasi, Mtongwe – Kiteje – Ng’ombeni, Likoni – Bububu – Mwangala and others.</p> <p>Likoni and Lunga-lunga, Mombasa, Mariakani, Samburu and Mackinnon road.</p>	<p>Short term</p> <p>Continuous, Short term to Long term</p>	<p>MoT, CDF, LATF, NGOs, CBOs, Community.</p> <p>MoT, CDF, LATF, NGOs, CBOs, Community, MoPW.</p>
		<ul style="list-style-type: none"> - Promote cost effective and quality management of the road network through routine maintenance of roads; periodic maintenance of trunk roads; reconstruction and upgrading of trunk roads. 		Continuous	MoR&PW

Objectives	Strategy	Programs/Activity	Location	Timeframe	Implementing Agency
		- Development of a dual carriage way between Likoni and Lunga-lunga, and Mombasa and Mariakani.	Likoni and Lunga-lunga, Mombasa and Mariakani.	Medium term	MoR&PW
	b) Electricity	- Accelerate access to rural electrification programme to more areas in the region. - Promote wind, wave and solar energy technologies.	Kikoneni, Shimba hills, Lukore, Mwangulu, Ndavaya, Vigurungani, Tsunza, Shimba Hills. EEZ, Nyika Plateau.	Medium term Long term	KPLC, KENGEN Private Companies, KENGEN, MoL&F.
	c) Water	- Improve rural water supplies by undertaking rehabilitation/ augmentation. - Develop plan for additional water supply facilities and mobilize resource for their construction. - Enhance water conservation – rehabilitate/ construct dams, pans, boreholes in partnership with user communities and private sector.	Whole region Whole region	Short term Long term	Kwale Water & Sanitation Services Board, MoW&I, NGOs, CBOs, Community. Kwale Water & Sanitation Services Board, MoW&I, NGOs, CBOs, Community.
	d) Health	- Increase the number and quality of health centers, paying particular attention to the issue of drug supply and staffing Public health education should be enhanced	Parts of Msambweni, Kinango, Samburu Division. Whole region	Medium term Medium term	Kwale water & sanitation services board, MoW&I, NGOs, CBOs, Community. MoH, Kwale water & sanitation services board, MoW&I, NGOs, CBOs, Community.
	f) Education	- Increase and expand the proportion of bursaries at day schools, and targeting girl child - Provide science equipment and other support materials to schools - Enhanced adult education and youth polytechnic education	Whole region	Medium term Medium term Short term	MoE, NGOs, CBOs, Community MoE, NGOs, CBOs, Community MoE, NGOs, CBOs, Community

Objectives	Strategy	Programs/Activity	Location	Timeframe	Implementing Agency
	Conservation and sustainable use of natural resources	<ul style="list-style-type: none"> - Develop a comprehensive natural resource inventory and intensify research programmes focusing on specific aspects of the environment e.g. whole catchment, estuarine, biodiversity, renewable energy e.t.c. - Initiate conservation measures in the Kayas, wetlands and mangrove forests Kaya Kinondo and Kaya Chale Diani, Kaya Kinondo and Kaya Chale natural forests, the Gazi, Funzi, Bodo and Ramisi wetlands, Gazi, Vanga, Funzi and Tsunza mangrove forests - Mitigate the human-wildlife conflict through electric fencing and creation of buffer zones - Increase forest cover through on-farm forest programmes and mangrove forest development and management - Create awareness to private property owners, and developers to protect and enhance biodiversity - Introduce a tiered incentive scheme for works that target high conservation value areas and address multiple natural resource management issues - Promote agro-based industries and revitalize collapsing industries - Enhance Tiomin mining and plan settlements centered on this resource 	<p>Kaya Diani, Kaya Kinondo and Kaya Chale Natural forests, the Gazi, Funzi, Bodo and Ramisi wetlands, Gazi, Vanga, Funzi and Tsunza mangrove forests Shimba Hills and Mwaluganje areas</p> <p>Kaya Diani, Kinondo and Chale, Natural forests, the Gazi, Funzi, Bodo and Ramisi wetlands, Gazi, Vanga, Funzi and Tsunza mangrove forests</p> <p>Shimba Hills and Mwaluganje</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Shimba hills area</p>	<p>Medium term</p> <p>Short term</p> <p>Short term</p> <p>Short term to medium term</p> <p>Continues</p> <p>Continues</p> <p>Short to medium term</p> <p>Short to medium term</p>	<p>MoE, NGOs, CBOs, KWS, NMIK, Community</p> <p>MoE, NGOs, CBOs, KWS, NMIK, Community</p> <p>NGOs, CBOs, KWS, Community, Farmers</p> <p>MoE, NGOs, CBOs, Community, Farmers</p> <p>MoE, NGOs, CBOs, Community, Local Authorities</p> <p>MoE, NGOs, CBOs, Community, Local Authorities</p> <p>MoA, MoT&C, NGOs, CBOs, Community, Local Authorities</p> <p>Tiomin Company, MoL, NGOs, CBOs, Community, Local Authority</p>
	Creation and maintenance of employment and income generating opportunities				

Objectives	Strategy	Programs/Activity	Location	Timeframe	Implementing Agency
		<ul style="list-style-type: none"> - Encourage small and medium size enterprises to be located in the service centers that have been identified - Encourage housing development in the service centers and use of local materials for construction - Promote rural labour-intensive road construction and community works - Provide entrepreneurial training - Provide a full range of infrastructure and services in the various service centers - Prepare Local Physical Development Plans for all the service centers identified in the regional plan - Provide services proportionate to the level of the urban Centre - Encourage settlement within these service centers - Enhance drainage pollution control to conserve resources and prevent entry to ground water and surface water resources. - Promote the collection of rainwater at private and business premises - Identify and secure areas for treatment of wastewater for reused as part of a holistic approach to water resource management 	<p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>Whole region</p> <p>All identified centers</p> <p>All identified centers</p> <p>All identified centers</p> <p>All identified centers</p> <p>All identified centers</p>	<p>Short to medium term</p> <p>Short and medium term</p> <p>Continues</p> <p>Continues</p> <p>Continues</p> <p>Short term</p> <p>Short & medium term</p> <p>Short & medium term</p> <p>Continues</p> <p>Short & medium term</p>	<p>MoL, MoC&T, NGOs, CBOs, Community, Local Authorities</p> <p>MoL, MoHousing, Local Authorities, NGOs, CBOs, Community</p> <p>MoR&PW, Local Authorities, Community</p> <p>MoT&C, MoS, Local Authorities, Community</p> <p>GOK, NGOs, CBOs, Local Authorities, Community</p> <p>MoL, Local Authorities, Community</p> <p>GOK, NGOs, CBOs, Local Authorities, Community</p> <p>Water & Sanitation Services Board, MoW&I, Local Authorities, Community</p> <p>Water & Sanitation Services Board, MoW&I, Local Authorities, Community</p> <p>Water & Sanitation Services Board, MoW&I, Local Authorities, Community</p>
	<p>Adopt a hierarchy of urban centers as basis for service provision</p> <p>Protect and manage water resources</p>				

Objectives	Strategy	Programs/Activity	Location	Timeframe	Implementing Agency
		<ul style="list-style-type: none"> - Initiate Catchment conservation and drainage improvement programmes - Identify and map the geo-hazard areas - Restrict development and settlements in the most vulnerable areas - Provide appropriate protective measures for those involved in the titanium mining - Undertake resettlement programmes for populations that fall within the risk prone areas - Train quick response units within the local authorities and security establishment 	<p>All identified centers</p> <p>Whole region</p> <p>Whole region</p> <p>Titanium processing place</p> <p>Whole region</p> <p>Whole region</p>	<p>Short & medium term</p> <p>Short term</p> <p>Continues</p> <p>Continues</p> <p>Short & medium term</p> <p>Short term</p>	<p>Water & Sanitation Services Board, MoW&I, Local Authorities, Community</p> <p>MoNR, Local Authorities, Community</p> <p>MoNR, Local Authorities, Community</p> <p>Titanium company, MoNR, Local Authorities, Community</p> <p>MoNR, Local Authorities, Community</p> <p>MoNR, Local Authorities, Community</p>

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