LAMU COUNTY SPATIAL PLAN (2016 - 2026)

ACTION PLANS

VOLUME III

MAY 2017

DEVELOPMENT PARTNERS

THE LEAD CONSULTANT IN THE PREPARATION OF THIS COUNTY SPATIAL PLAN:

Center for Urban & Regional Planning (CURP),
Bruce House, Standard Street, 15th Floor, Nairobi.

THE CLIENT:

The County Government of Lamu (CGL), P.O. Box 74-80500, LAMU

IN PARTNERSHIP WITH:

World Wildlife Fund for Nature, Lamu-Kenya Office

THE MAKING OF THIS CSP ALSO BENEFITED FROM THE INPUT OFFERED BY AUTHORITIES SUCH AS:

The National Land Commission (NLC), Nairobi

The Kenya Wildlife Service (KWS) & The County Wildlife & Conservation Committee (CWCC), Lamu

The LAPSSET Authority as a flagship project of Vision 2030 being undertaken in Lamu County

Kenya Forest Service (KFS), Lamu

International Center for Research in Agroforestry

National Museums of Kenya, through the World Heritage Site Office in Lamu Island

Water Resources Management Authority, Kenya

FOREWORD

The Constitution of Kenya 2010 bestows the mandate of County Planning to County Governments. The Constitution further provides for the various rights and freedoms that can be fully realized through the preparation and implementation of County Spatial Plans.

The County Governments Act 2012 in section 110(1)(a) stipulates that the County Spatial Plans shall give effect to the principles and objects of county planning and development contained in section 102 and 103 of the same Act. Further, section 110 (2)(c)(iv) of the Act requires that the County Spatial Plans should set out basic guidelines for a Land Use management system in the County taking into account any guidelines, regulations or laws as provided for under Article 67(2)(h) of the Constitution.

In furtherance to this responsibility, the law obligates each County Government to prepare a ten-year GIS-based County Spatial Development Plan in respect of their area of jurisdiction. The plan is a broad framework for organizing and distributing population and activities in the county; This is to achieve both national and county development objectives. It also serves the purpose of enabling the county government to strengthen the coordination of sectoral projects, programmes and to mitigate duplication of efforts and waste of resources.

Lamu County is destined to be one of the new growth frontiers with a number of large-scale economic development and infrastructure investments. The Lamu Port, South Sudan and Ethiopia Transport (LAPSSET) corridor project among other projects that are expected to change the economic landscape of the County and thus the need for a spatial framework to provide a basis for planned investments.

The County also experiences a myriad of challenges related to land based resources such as human-wildlife conflicts, encroachment on fragile ecosystem, unplanned settlements and depletion of water sources. These challenges can best be addressed within a planned framework.

Whilst the expected developments could generate substantial economic and social benefits, they also pose significant environmental and social risks. They could lead to irreversible damage to the County's most important natural assets such as forests, mangroves, water sources, beaches, seagrass beds, coral reefs and fisheries. These natural assets provide a flow of goods and services that are vital to Lamu's economy and the wellbeing of the people). Lamu's natural environment also holds important cultural and spiritual values for many communities. However, many of these assets are already in decline due to human activities, and the losses would have profound implications for Lamu's future.

The Lamu County Spatial Plan (2016-2026) addresses the aforesaid challenges in order to improve the standards of living of the people through employment creation, reduction of poverty, and creation of wealth as well guide sustainable development. The plan also provides comprehensive strategies and policy guidelines to solve the problems of rural and urban development, industry, infrastructure and human settlement, ecotourism and sustainable environmental management. The implementation plan will be a major milestone towards securing biodiversity hotspots, sustainable management of natural resources and improvement of the quality of life and wellbeing of the residents of Lamu County.

Special thanks to our Key Partners World Wide Fund (WWF) led by Mr. Mohamed Awer (Chief Executive Officer), Mr. Kiunga Kareko (Coastal Program manager) and the entire WWF team for their invaluable financial and technical support. The County is also grateful to the County Assembly for their active role in plan preparation and approval. Lastly to the County team (National and County Departments), local community and other stakeholders to the timely preparation and completion of the plan. We look forward to the support of every stakeholder in the implementation of the plan.

Hon. Issa A. Timamy
The Governor
County Government of Lamu

PREFACE

Lamu County, forms part of the larger coast region that include Kwale, Mombasa, Kilifi, Tana River and Taita/Taveta counties. Except Taita/Taveta County, all the other counties front the Indian Ocean with a coastline extending almost 600 kilometres from the boundary with Tanzania to the south to the boundary with Somalia to the North. Lamu County has approximately 130 kilometres of sandy beach coastline which is characterized by some unique and environmentally sensitive coastal ecosystems which include the coastal sand dunes, mangrove swamps, coral reefs, coastal tropical forest and rangelands that are so important for the pastoral communities in the Coast, North Eastern and Northern Kenya. These ecosystems are of great interest in view of their protective role against siltation and sea erosion. The National Environment Management Authority (NEMA) and the World-Wide Fund for Nature (WWF) working in collaboration with County Government of Lamu and other Stakeholders recently completed the preparation of an Environmental Sensitivity Atlas for Lamu County which we hope if used together with this Spatial Plan will go a long way to guiding future development of County.

World Wide Fund for Nature (WWF) has been an active partner in the preparation of this Spatial Plan and their contribution in logistical arrangements and expertise is highly appreciated. The preparation of a County Spatial Plan is legal requirement under the County Government Act, 2012. Section 110 (1) States that there shall be a ten-year GIS based database system 'Spatial Plan' for the County which shall be a component part of the County Integrated Development Plan (CIDP). The preparation of this spatial Plan is based on a GIS database that has carefully been prepared capturing property boundaries of all surveyed land parcels in the entire County. A GIS officer from the County Government of Lamu has been trained on data capture, entry, retrieval and updating process. WWF has established a GIS laboratory within Lamu County Government on which all data collected during the preparation of this Plan will be entered and archived.

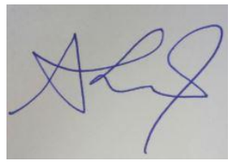
The County Spatial Plan has been developed through a robust and all-inclusive stakeholder process. The process included integration of national policies that have relevance to the County Government Planning and budgeting needs. Stakeholders meetings were held in all the wards in recognition of the fact that the ward has become an important Planning unit as far as the County Government Act 2012 is concerned. In each ward, the participants were able to develop the vision for their ward which were later merged to form County vision. The Spatial Plan is strategic and therefore aims at addressing spatial problems facing the County's geographical space. Spatial concepts have been used to better describe and depict the unique land forms that make up the said geographical space.

This Plan has ensured that pursuit of equity in resource allocation within the County has been promoted, and that short-term gains are not favoured above long-term sustainability. The Plan has provided a platform for unifying Planning, budgeting, financing, programme implementation and performance review.

The ultimate aim of preparing Lamu County Spatial Plan has been to strategically guide sustainable development in Lamu County for a period of 10 years and facilitate the transformation of the lives of the citizens of the County. This Plan has aimed at providing an overall spatial framework for the County to guide sustainable development, providing an agreed land use Plan for the County, which include clearly designated land use zones, developing a GIS database as mentioned earlier which has supported the Plan making process. The Plan has also helped in interpreting and localizing strategic national and regional policies and strategies, identifying the natural assets within the County, outlining strategies to protect and where appropriate improve renewable natural assets, providing a basis for efficient and cost-effective delivery of infrastructure services through a long-term programme of investment and providing a framework for revitalizing industries, trade and commerce for sustainable economic development.

The Plan has depicted the spatial dimension of the social-economic, political and environmental development programmes of the County as articulated in the County Integrated Development Plan. It has also presented a clear statement of how the spatial Plan is linked to the Regional, National and the County Plans, clarified on the anticipated sustainable development outcomes of the Spatial Plan through controlling the order and nature of activities on land in the County.

The preparation of this Pro-Conservation Spatial Plan has benefited from the dedication and collaboration of the County Government of Lamu, National Land commission, Director of Physical Planning, Ministry of Lands and Physical Planning and the World-Wide Fund for Nature (WWF), The National Museums of Kenya, The LAPSSET Authority, the County Residents (Public).



Hon. Amina R. Masoud
County Executive Committee Member
Lands, Physical Planning, Water, Infrastructure & Urban Development
County Government of Lamu

ACKNOWLEDGEMENT

The County Spatial Plan 2016-2026 (CSP) is as a result of a comprehensive participatory process that lasted for approximately 18 months under the guidance of the Consultant - Centre for Urban & Regional Planning. The approach was multi-disciplinary and multi-sectoral approach with the involvement of all the stakeholders including the community.

The process involved participants from all the ten wards of the County (Witu, Bahari, Hongwe, Mkunumbi, Hindi, Basuba, Shella-Manda, Amu, Faza and Kiunga), Planners from the County Government, Centre for Urban and Regional Planning (CURP) and Technical Departments of various Ministries within the County. Other participants involved in the process included: National Land Commission (Directorate of Planning), Ministry of Lands and Physical Planning (Department of Physical planning), Ministry of Interior and Coordination of National Government (Office of County Commissioner Lamu), Kenya wildlife Society, and Non-State actors (WWF), World Agroforestry Centre and local conservation groups. These are acknowledged for participating and supporting the entire process.

The CSP has been prepared with the institutional and financial support of the County Government of Lamu and the World Wildlife Fund (WWF) for Kenya Office. The County is particularly grateful to H.E. Hon. Issa Timamy - Governor of Lamu, Hon Amina R. Masoud - County Executive Member in charge of Land and Physical Planning and Mr. Mohamed Awer Mohamed - Chief Executive Officer, WWF for their guidance, financial and institutional support in preparation of this plan. WWF-Kenya has supported the establishment of a fully-fledged GIS lab as per the threshold set by the National Land Commission guidelines in preparation of County Spatial Plans. WWF-Kenya has also supported the CSP development process by supporting a participatory process where transect surveys, focus group discussions and validation workshops were conducted. Capacity building programmes in GIS and M&E have also been supported to enhance capacity in operation of the GIS laboratory and effective preparation and implementation of the plan.

We appreciate the Consultant for steering the process in a highly professional manner. The support and goodwill of both the County Executive Committee Members, the County Assembly Members and County Administration is highly appreciated.

The County is also grateful to: Dr. Stephen Holnes - a conservation specialist from South Africa, courtesy of WWF; Consultants from World Agro forestry Centre; National Museums of Kenya; Dr. H. Musoga; Planner R. Kitur; and C. Onyango from National Land Commission for their insightful contribution to the process of the County Spatial Planning.

This document could not also have been prepared without the invaluable input and guidance of the County Planning Team led by Eric Randu (Director of Lands & Physical Planning), Vincent Osewe (County Physical Planner) and Swabra B. Mohamed (County GIS Analyst). The Consultant's Team included: Planners R.K. Mbwagwa, Osengo Charles, Joakim Nyarangi, Samuel M. Gituara, John Nduru, and GIS specialist Peter D. Nyamai.

The County Department of Lands further also acknowledges the support and mobilisation efforts of the WWF Lamu Office spearheaded by Kiunga Kareko (Coastal Project Manager, WWF) and Nathan Mutunga (Planner). Finally, we highly appreciate the Lamu community in all the ten wards for their active participation and input during the plan preparation process. As it is not possible to list the names of all the persons in this section of the report, a detailed list of all these contact persons has been attached as an appendix to this report.

Eric Randu
County Director of Lands & Physical Planning

ABBREVIATIONS & ACRONYMS

C.C. – County Commissioner

C.O. – Chief Officer

CBNRM – Community Based Natural Resource Management

CBO – Community Based Organizations

CCS – Comprehensive Community Strategy

CDF – Constituency Development Fund

CEC – County Executive Commissioner

CFA – Community Forest Association

CGL – County Government of Lamu

CGTR – County Government of Tana River

CIDP – County Integrated Development Plan

CIP – Capital Investment Plan

CSO – Civil Society Organization

CSP – County Spatial Plan

CURP – Center for Urban and Regional Planning

CWCC – County Wildlife & Conservation Committee

DNR – Dodori National Reserve

DPS – Development Partners

EEZ – Exclusive Economic Zone

EMCA – Environmental Management and Control Act

ESIA – Environmental and Social Impact Assessment

FBO – Faith Based Organization

FGD – Focused Group Discussion

FGM – Female Genital Mutilation

FPE – Free Primary Education

FSE – Free Secondary Education

FY – Financial Year

GASP – German Assisted Settlement Programmes

GIS – Geographical Information System

GoK – Government of Kenya

GTZ – German Organization for Technical Cooperation

HIMWA – Hindi Magongoni Water Association

IBA – Important Bird Areas

ICT – Information Communication and Technology

ISUDP – Integrated Strategic Urban Development Plan

JKUAT – Jomo Kenyatta University of Agriculture and Technology

K.D.F. – Kenya Defense Forces

K.P.R. – Kenya Police Reservists

KAA – Kenya Airports Authority

KENHA – Kenya National Highway Authority

KENTTEC - Kenya Tsetse fly and Trypanosomiasis Eradication Council

KeRRA – Kenya Rural Roads Authority

KETRACo - Kenya Electricity Transmission Company

KFS – Kenya Forest Service

KFS – Kenya Forest Service

KIP – Kenya Institute of Planners

KMA – Kenya Maritime Authority

KMNR – Kiunga National Marine Reserve

KNBS – Kenya National Bureau of Statistics

KPL Company

KPLC – Kenya Power and Lighting Company

KPR – Kenya Police Reservist

KU – Kenyatta University

KURA – Kenya Urban Roads Authority

KWS – Kenya Wildlife Service

LAKWA - Lake Kenyatta Water Association

LAPSSET – Lamu Southern Sudan Ethiopia Transport Corridor

LAWASCO - Lamu Water and Sewerage Company

MIPC – Manda Island Port City

MP – Member of Parliament

NCIC – National Cohesion and Integration Commission

NEM – Northeast Monsoon

NEMA- National Environmental Management Authority

NGO – Non-Governmental Organization

NLC – National Land Commission

NMK – National Museums of Kenya

NMT – Non-Motorized Transport

PPPS – Public Private Partnerships

RAP – Resettlement Action Plan

SEM - Southeast Monsoon

SEZ – Special Economic Zone

SoK – Survey of Kenya

TARDA – Tana Athi River Development Authority

TJRC – Truth Justice and Reconciliation Commission

UNESCO – United Nations Educational, Scientific and Cultural Organization

VCT – Voluntary Counseling and Testing

VIP – Ventilated Improved Pit

WFE – Witu Forest Ecosystem

WRM – Water Resource Management

WRUA – Water Resource Users Association

WWF – World Wildlife Fund

TABLE OF CONTENTS

THE ACTION PLANS

PROPOSED LAMU ISLAND ACTION PLAN ZONING AND PLANNING GUIDELINES

OVERVIEW

The relationship between physical space and communities is a definitive understanding of how to Plan and develop quality environments in such a way that they both maximize on space gain and minimize the negative effects on people's lives on the physical spaces they inhabit.

The concept behind this Action Plan is aimed at conserving the environmentally sensitive areas within the Island and to create infrastructure that intra-links settlements within the island and enhance better inter-linkage of the island and the mainland. Additionally, it was noted that there was need to control development on the outlying areas of the Gazetted UNESCO World Heritage site and as such, this action Plan aims at proposing guidelines that promotes sustainable growth of the peripheral areas as the heritage viability of the Old Town is maintained.

Furthermore, this action Plan recognizes the growing need to have major service commercial facilities within the island like supermarkets; hypermarkets; and shopping malls. As such, the Plan makes relevant proposals towards achieving this endeavor while still maintaining the environmental sensitivity and heritage factor of the island. To achieve all this, the Action Plan proposes the following zones:

ZONE 1: THE LAMU WORLD HERITAGE SITE (LAMU OLD TOWN)

Source: CURP, May 2016

Lamu Old Town is the oldest human settlement in Kenya located at about 350km north of Mombasa, and is the best-preserved example of Swahili settlement in East Africa. It occupies an area of about 16 ha. The old town has maintained its social and cultural integrity, as well as retaining its authentic building fabric up to the present day. The old Town was once the most important trade Centre in East Africa, as so, it has exercised an important influence in the entire region in religious, cultural as well as in technological expertise. A conservative and close-knit society, Lamu has retained its important status as a significant Centre for education in Islamic and Swahili culture as illustrated by the annual *Maulidi* and cultural festivals like the food festival.

Unlike other Swahili settlements which have been abandoned along the East African coast, Lamu Old Town has continuously been inhabited for over 700 years. The growth and decline of the seaports on the East African coast and interaction between the Bantu, Arabs, Persians, Indians, and Europeans represents a significant cultural and economic phase in the history of the region which finds its most outstanding expression in Lamu Old Town, its architecture and town Planning.

The town is characterized by narrow streets and magnificent stone buildings with impressive curved doors, influenced by unique fusion of Swahili, Arabic, Persian, Indian and European building styles. The buildings on the seafront with their arcades and open verandas provide a unified visual impression of the town when approaching it from the sea. The buildings are well preserved and carry a long history that represents the development of Swahili building technology, based on coral, lime and mangrove poles.

A narrow street in Lamu Old Town.

Source: CURP, May 2016

The architecture and urban structure of Lamu graphically demonstrate the cultural influences that have come together over 700 hundred years from Europe, Arabia, and India, utilizing traditional Swahili techniques that produced a distinct culture. The property is characterized by its unique Swahili architecture that is defined by spatial organization and narrow winding streets. This labyrinth street pattern has its origins in Arab traditions of land distribution and urban development.

The Old Town is such a valuable asset for the County as it offers it an opportunity to be globally recognized. Among other reasons, the Heritage site should continue being maintained and conserved for the following reasons:

Integrity

The Old Town adequately incorporates all the tangible and intangible attributes that convey its outstanding universal value as a Heritage Site. A high percentage (65%) of the physical structures are in a good condition with only 20 % being in need of minor

rehabilitation. The remaining 15 % may need total restoration. The majority of the town's buildings are still in use for either Commercial; Public Purpose; or Residential Use.

The town needs to maintain its relationship with the surrounding landscape. The setting of the Old Town is vulnerable to encroachment and illegal development like what is currently happening on the Shela dunes despite being a fundamental part of the Old Town's setting. Development is a threat to its visual integrity as an island town closely connected to the sea and sand-dunes, and to its ultimate survival in terms of the fresh water that the dunes supply. The setting extends to the surrounding islands, all of which need to be protected from informal settlements, and to the mangroves that shelter the settlement areas.

Authenticity

To date, the architecture of Lamu has employed locally available materials and techniques. The people of Lamu have managed to maintain age-old traditions reinforcing a sense of belonging and social unity. This is expressed by the layout of the town which includes social spaces such as the Town squares and sea front *barazas.* The town continues to be a significant Centre for education in Islamic and Swahili culture.

Lamu Old Town Square (*'Mkunguni'*)

Source: CURP, May 2016

The authenticity of the Old Town is vulnerable to development and to a lack of adequate infrastructure, that could overwhelm the sensitive and comparatively fragile buildings and urban spaces that together make up the distinctive urban grain of the town.

Protection and management requirements

Lamu Old Town is managed by the National Museums and Heritage Act 2006 (that replaced the 1983 National Museums Act CAP 216 and Antiquities and Monuments Act CAP 215) and the associated County Bylaws. Physical construction is also subjected to the EMCA Act and the Building code, which recognize that archaeology is material for consideration.

The Old Town has a gazetted buffer zone that includes the Manda and Ras Kitau mangrove skyline and the Shela sand dunes, also protected by the Forest Act and Water Act respectively (although the buffer zone has not been formally approved by the World Heritage Committee). All the components are legally protected.

The Lamu Stone Town Conservation Office, now renamed the Lamu World Heritage Site and Conservation Office, was established by the National Museums of Kenya and has been in operation since 1986. A conservation officer is seconded to Lamu County Government to advice on conservation matters. A Planning commission exists since 1991 to play a supervisory role and address emerging issues in the conservation area. Locally embedded institutions ensure the continued importance of Lamu as a Centre of Islamic and Swahili cultural learning and practices.

Lamu World Heritage Site and Conservation Office.

Source: CURP, May 2016

The economic significance of this World Heritage Site and the tremendous potential it holds for Tourism as a revenue generation source for the County cannot be overlooked. It is therefore important that the growth of the Town be controlled to avoid unmitigated urban sprawl and expansion that may corrode the value of the heritage. As such, the following Land Uses has been proposed for the Lamu World Heritage Site (Old Town):

PERMITTED USERS IN THE LAMU WORLD HERITAGE SITE

Generally, the following shall constitute the permitted conditional users within the Lamu Old Town Heritage Site:

- ***Commercial/Retail activities:*** The already established commercial activities on site are to be adopted but guided in their growth such that their expansion does not in any way result to the alteration of the heritage values of the site.
- ***Institutions; and Offices:*** Just as the commercial activities within the heritage site, all institutions and offices within the site should endeavour to promote the heritage significance of the Old Town as per the regulations and guidelines given by the National Museums of Kenya.

- ***Educational and Religious Uses:*** As one of the most densely populated settlements in the Island, it is recommended that educational facilities and other institutions of Islamic scholarly excellence be allowed in the zone. Most of these already exist and should only be checked to ensure that their continued existence do not corrode the values of the Heritage site as endeavoured by the NMK and the CGL
- ***Compact Residential and serviced apartments:*** The people living in the heritage site should continue living there on condition that they maintain and conserve the building forms; and architecture in their most original form.
- ***Hotels and public facilities:*** Any new hotel or public facility coming up within the Old Town should be constructed based on the regulations and guidelines given by the Heritage Conservation office. All existing ones should continue operating on condition that they maintain and conserve the building forms; and architecture in their most original form.
- ***Non-Motorized means of Transport (NMT):*** this is in exception of the specialized motor vehicle use attached to the Governor's office; the garbage collection tractor; and the tuk tuk ambulance(s). All other residents of the Old Town should be encouraged to walk; use the donkey; or cycle through the town

TENABLE PROJECTS; AND CONDITIONS TO SAFEGUARD THE HERITAGE VALUE OF THE OLD TOWN

- The National Museums of Kenya (NMK); and UNESCO in consultation with the County Government of Lamu (CGL) should adopt general policies to give the heritage a function in the life of the community
- The CGL should oversee that all comprehensive Planning programmes integrate heritage protection into their proposals; or recommendations by preparing a Planning Zoning Guide and Regulations for the Heritage site
- The NMK; UNESCO; and the CGL should foster the establishment or development of National or Regional Centres for training in the protection, conservation and presentation of the heritage and encourage scientific research in these fields
- The NMK; and UNESCO in consultation with the CGL should develop scientific and technical studies to identify actions that would counteract the dangers that threaten the heritage significance of the Old Town. This can be achieved by proposing appropriate legal, scientific, technical, administrative and financial measures to protect the heritage
- The NMK should submit to the World Heritage Committee an inventory of properties suitable for inscription on the World Heritage List within the Old Town of Lamu
- The NMK; UNESCO; and the CGL should consider and encourage the establishment of National; Public; and Private foundations or associations to facilitate donations for the protection of World Heritage
- The office responsible for the conservation of heritage should make regular contributions to the World Heritage Fund as agreed by the General Assembly of States Parties to the World Heritage *Convention*
- The NMK; and the CGL should organize Public sensitization programmes on the value of the World Heritage Site to the community to strengthen their view of the value of heritage in a bid to also create empowerment and employment as tourist guides

LAND DEMAND AND POPULATION PROJECTIONS

In order to understand the unforeseen land demand, a projection of the population had to be determined. The projections assumed a constant growth rate of the population for the period between 2009 and 2025. A generally accepted formula: $P_t = P_o (1+r)^n$ was used to determine the projections where P_t is the projected population, P_o is the original population, r is the rate of growth and n is the number of years being projected. The annual growth rate of Lamu County as per the 2009 National Housing and Census of Kenya was estimated at 2.47% and the population of Lamu Old Town was 7,040 (including the population of the now reclaimed settlement area of Wiyoni). The projections have been computed as follows:

Population (2009 National Census)	**Projected Population as at 2016**	**Projected Population as at 2020**	**Projected Population as at 2025**
7,040	8,351	9,435	12,242

Considering a computed estimate of the population density at 440 people per Ha with an available land size of 16 Ha, it is estimated that by 2020 when the population will be 9,435 there will be need for 22 Ha of land to sustain the population. By 2025, the population will have grown by about 4,000 more people and more land of about 28Ha will be required. This is almost double the size of the current land size. The County Government need to therefore strategize on how to provide land to meet this demand without diminishing the heritage value of the Old Town. This they will achieve in three ways:

- The County Government may either rezone the Old Town to increase the Plot Ratios of the land to ensure more verticle growth land space to cover the deficit; or,
- Prepare an ISUDP that provides land outside the demarcated boundary of the Old Town that enhances its suitability and interaction with the Town.
- Develop and promote growth of the adjoining settlement areas like Wiyoni, Shella, and Langoni as alternative growth nodes as will be discussed in Zone 2 of this Action Plan.

ZONE 2: PERI-URBAN ZONES (AREAS OUTSIDE THE GAZETTED WORLD HERITAGE SITE BOUNDARY FOR HUMAN SETTLEMENT IN THE ISLAND)

These are the areas surrounding the World Heritage Site. They include the informal settlements of Langoni; Shella; and the reclaimed land of Wiyoni Settlement. Also, discussed under this zone are the villages of Matondoni; and Kipungani. This is because they are all categorized as human settlement areas.

SHELLA

Source: Cessna, August 2010

Shela is a village about 3.2 km south of Lamu Old Town. The origin of the village is unknown, but according to tradition, it was settled by people from nearby Manda Island. In 1813, the elite of Pate Island, allied with the Mazrui clan from Oman, attempted to subjugate Lamu in the Battle of Shela. This attempt failed totally, and the defeat of Pate at Shela signaled the rise of Lamu as the leading power in the archipelago. Shela's golden age was from 1829 to 1857, when 5 of its 6 mosques were constructed.

Shela is now a Centre for tourism on the island, with several guest houses and hotel facilities. It is also home to the most spectacular beaches on Lamu island. It makes a sharp contrast to Lamu Old town which lacks a beach and functions as a relatively busy port and a source of tourism owing to the Old Town heritage site. It is linked to the old town through a stretch of cabro footpath along the sea wall. This linkage is very important and plays a key role as the only infrastructural linkage bearing in mind that Shela acts as the dormitory town for Lamu Old Town. It is on this premise that the linkage of all the other human settlements within the island has been emphasized and proposed through this Action Plan.

A view of Shela from the sea.

Source: CURP, May 2016

A beach in Shella

Source: CURP, May 2016

PERMITTED USERS IN SHELLA

Generally, the following shall constitute the permitted conditional users within Shella:

- ***Commercial/Retail activities:*** The already established commercial activities on site are to be adopted but guided in their growth. There is always a tendency of every business to expand with time and as so, considering the volatile and sensitive nature of Shella due to the proximity of the sand dune ecosystem, this expansion will have to be guided.

  To achieve this, strict zoning guidelines as proposed elsewhere in this CSP and other cross cutting zones of this Action Plan will have to be adopted as general guidelines. There is also a growing need to localize major economic activities like Shopping Malls; or Supermarkets in the Island. On this note, considering Shella is a tourists' dormitory town, and also very close to the Old Town which is heavily inhabited, it then automatically qualifies as a potential site where such facilities could be accommodated.
- ***Institutions; and Offices:*** Shella Town will automatically boom in the tourism industry given its white beaches and hotel facilities. It is no doubt that offices and other institutions need to be accommodated in this town to compliment other activities taking place in the Town.
- ***Compact Residential and serviced apartments:*** Lamu County Urban Centres within the archipelago have been developed in a rather unique way compared to Urban Developments in the Mainland. The settlements are nucleated and spaced on narrow streets that are utilized for pedestrian movement and service utilities. This Action Plan does not advocate for renewal or redevelopment of the Town and as such, the compact residential alignment of Shella Town will be adopted. The extension and growth of the Town towards Lamu Old Town along the sea wall will however need to be controlled and managed in a sustainable way.

- ***Hotels and public facilities:*** The existing Hotels and public facilities like open play fields and social halls in Shella should continue operation in their existing condition. Additionally, the building developers should always strive to ensure that they do not corrode the aesthetics of the place in the building designs other than the ones proposed in the building regulations of the County Government.

- ***Cemetery/Crematorium:*** These are public utilities that either currently exist or can be accommodated within the Town or immediate surroundings of the Town but away from the sand dunes or the beach.
- ***Non-Motorized means of Transport (NMT):*** Just like the Old Town, there is no use that warrant the use of Motor Vehicle apart from the ones earlier discussed and as so, residents of Shella Town will need transport infrastructure that promotes walking; or cycling.

LAND DEMAND AND POPULATION PROJECTIONS

As previously discussed under zone 1 of the Heritage site, the projections that follows were computed and determined in the same way:

Population (2009 National Census)	Projected Population as at 2016	Projected Population as at 2020	Projected Population as at 2025
2,182	2,588	2,924	3,304

Based on the projection above, with a current population density of 144 people per hectare, the demand for land is projected as 21 Ha by 2020 and 23 Ha by 2025. It is on this premise that the County Government of Lamu should prepare a Plan that allocates and provides land for the anticipated growth of Shella Town which should follow the green arrows as in the image below as opposed to the red arrows. This means that no development should be allowed towards the sand dunes (direction of red arrows) but all horizontal developments should grow in the North direction as indicated by the green arrows:

Proposed growth direction of Shella Town

GENERAL GUIDELINES AND STANDARDS FOR THE GROWTH OF SHELLA TOWN

- To promote the conservation of the sand dunes as water catchments, it is proposed that all buildings or properties allotted land to be revoked and the sand dunes protected as fragile ecosystems where no development should be allowed.
- As discussed in other sectors of this action Plan and in the main CSP report, a proposed buffer zone of 50 meters from the lowest point of the sand dune to any development is mandatory. This applies to the south-east side of the island where the sand dune formation starts.
- As development grows towards the Heritage Town (Old Town), it is proposed that vibrant economic activities be provided for including big wholesale and retail outlets to enhance and increase the trading and business areas of Lamu Island
- The zone delimited for the growth of the town should have its Plot Ratios increased and plot coverage(s) reduced to accommodate a higher population on less space while having wider streets to ease service provision like drainage and anticipated fibre optic connection

LANGONI

This is an informal settlement located about 1 kilometer south of Lamu Old Town. It is highly growing and developing as the immediate settlement and dormitory settlement for most residents working in the Old Town. It harbours a population of approximately 9,000 people and its growth needs to be controlled as it expands towards the Heritage Town of Lamu. It is however a very potential site for a vibrant commercial node given its population and proximity to the Lamu Old Town.

Additionally, Langoni is not constrained by the heritage aspects of the Old Town hence its development is not highly constrained. A good sustainable Plan to enhance its viability as a commercial node with some light industrial elements can compare and contrast well with the heritage values of the Old Town.

For better understanding of the settlement's growth over time, the illustrations below have been used to show growth of the settlement over a period of about 10years between 2003 and 2014:

The unbuilt area of Langoni Informal Settlement:

2003 Google Earth image

The built-up area of Langoni Informal Settlement:

2014 Google Earth image

The images above show that the settlement continues to grow over time and may not actualize on its most viable use given its proximity to the Old Town and Shella if not well mitigated. It is expected that by 2020, the settlement will have expanded sporadically if proper measures are not put in place on time. It is on this premise that this action Plan proposes to the County Government to expedite on the preparation of clear zoning guidelines and regulations to adopt in the growth of the Langoni settlement.

PERMITTED USERS IN LANGONI SETTLEMENT

Generally, the following shall constitute the permitted conditional users within Langoni:

- ***Residential:*** It is inevitable that human settlements sprung around established Urban Centres and Towns like Langoni developed around the Old Town. On this note, considering that the settlement is already habited, the Residential use is highly recommended as the Major Use of the settlement.

- ***Light Industrial:*** The residents of Lamu Old Town and adjoining areas have over time been known for various cultural crafts like wood carving and other related industries. This potential as a resource is not harnessed to its maximum potential, as so, the development of this CSP has proposed promoting economic viability of the archipelago as one of its strategies. To achieve this, the economic strengths of the Island including such industries as wood carving has to be explored.

  Considering that most residents of Lamu Island either reside in the Old Town; or Langoni, it is most viable to accommodate certain users like the Light industries near where the people are as future locations are explored. Since the Old Town is limited by the Heritage aspect, it would be convenient and viable to accommodate such user in the expansion Plan for Langoni settlement.

- ***Educational:*** There is no doubt that all residential areas need to be provided by the basic facilities including health and education facilities. On this note, areas for educational purposes will need to be identified in the expansion Plan of Langoni Settlement.

- ***Public Utilities:*** These include health facilities; religious facilities; and cemeteries to be allowed in Langoni settlement.

- ***Commercial/Retail activities/Hotel Facilities:*** The already established commercial activities on site are to be adopted but guided in their growth. As mentioned earlier, there is a growing need to localize major economic activities like Shopping Malls; or Supermarkets in the Island. On this note, Langoni Settlement and immediate surrounding area automatically qualifies as a potential site where such facilities could be accommodated.

  It is also expected that gradually, there may be an over spill of Hotel Facilities from the Shella side towards Langoni settlement and as so, certain users such as hotels will also be accepted in the settlement's immediate adjoining areas.

- ***Cemetery/Crematorium:*** These are public utilities that either currently exist or can be accommodated within the settlement or immediate surroundings of the village but away from the ocean front.

- ***Non-Motorized means of Transport (NMT):*** Just like the Old Town, there is no use that warrant the use of Motor Vehicle apart from the ones earlier discussed and as so, residents of Langoni settlement will need transport infrastructure that promotes walking; or cycling.

LAND DEMAND AND POPULATION PROJECTIONS

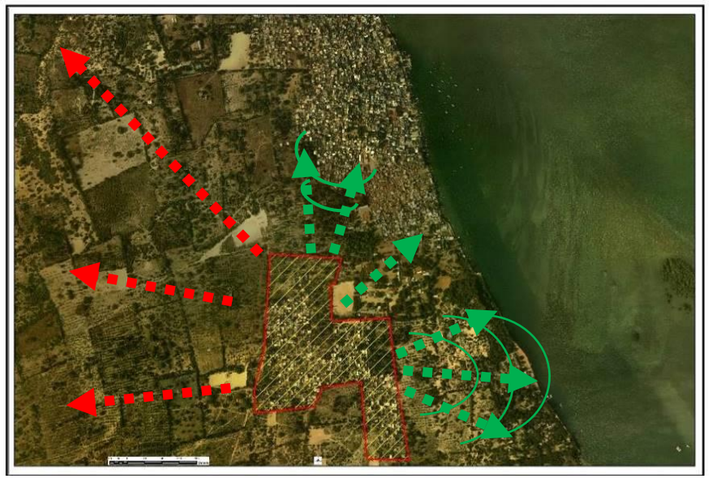
As previously discussed under zone 1 of the Heritage site, the projections below were computed and determined in the same way:

Population (2009 National Census)	Projected Population as at 2016	Projected Population as at 2020	Projected Population as at 2025
9,793	11,617	13,126	14,831

Based on the projections above, it is evident that the population of Langoni continues to grow over time. As earlier illustrated, the density of the settlement continues to increase commensurate to the population. With the projected population of 2016 at 11,617 and a population density of 528 people per hectare, it is expected that the demand of land for growth will continue to rise estimated at 25 Ha in 2020 and 29 Ha in 2025. This means that by 2020, an

extra 3 Ha will be required to accommodate the extra population. This area does not consider other proposed users such as the light industrial and commercial spaces that are to be accommodated in the growth of Langoni settlement.

This therefore means the total land demand anticipated in the growth of the settlement will be more that 5 Ha approximately by 2020. As a general guideline, it would be viable to channel development of the settlement towards the Old Town and the ocean. This aspect considers the value of Agricutural land which outlies next to the Centre and the Heritage Site (Old Town). This Action Plan propose the growth of the settlement in the following manner:



Proposed growth trajectory of the settlement

The proposed growth of the settlement is proposed to follow the green arrows and the direction of the curves as indicated above. The red arrows discourage the direction of development towards the rich agricultural zone. It is therefore proposed that all permitted users as discussed above be accommodated in the direction of the green arrows in the growth of the settlement over the next 10 years. This growth should be guided by set guidelines and zoning regulations by the County Government of Lamu.

MATONDONI

Source: Vincent Van Zeijst, May 2014

Matondoni village Known as the dhow making village lies at the NW coast of the island, 7.3 km (4.5 mi) west of Lamu Old Town and currently occupies an area of about 12 Ha. The village has a modern jetty that enhances its linkage via Water transport. It is however not linked on land to other major settlements in the Island like the Old Town and Shella. This Action Plan proposes this linkage as a way of boosting economic interaction between the settlements, enhancing the health; lifestyles of the people and to promote eco-tourism activities in a bid to boost revenue generation for the County Government.

PERMITTED USERS IN MATONDONI VILLAGE

Generally, the following shall constitute the permitted conditional users within Matondoni:

- ***Residential:*** Matondoni village is a well-established fishing village. The current dominant use is the residential function. This will be adopted as the major use of this settlement while still promoting other uses like boat making and other light industries.
- ***Educational:*** There is no doubt that all residential areas need to be provided by the basic facilities including health and education facilities. On this note, areas for educational purposes will need to be identified in the expansion Plan of Matondoni village.
- ***Public Utilities:*** These include health facilities; religious facilities; and cemeteries to be allowed in Matondoni Village.
- ***Light Industrial:*** The village is known for boat making and hence, the County Government of Lamu need to establish relevant infrastructure and sites where this resource can be tapped economically and in large scale.
- ***Commercial/Retail activities/Hotel Facilities:*** The residents cannot survive without access to basic commercial commodities and hence, various commercial entities including Shops; Guest Houses; Hotels will be encouraged to locate within and around the village in its growth.
- ***Non-Motorized means of Transport (NMT):*** As discussed above, residents of Matondoni Village will need transport infrastructure that promotes walking; or cycling.

LAND DEMAND AND POPULATION PROJECTIONS

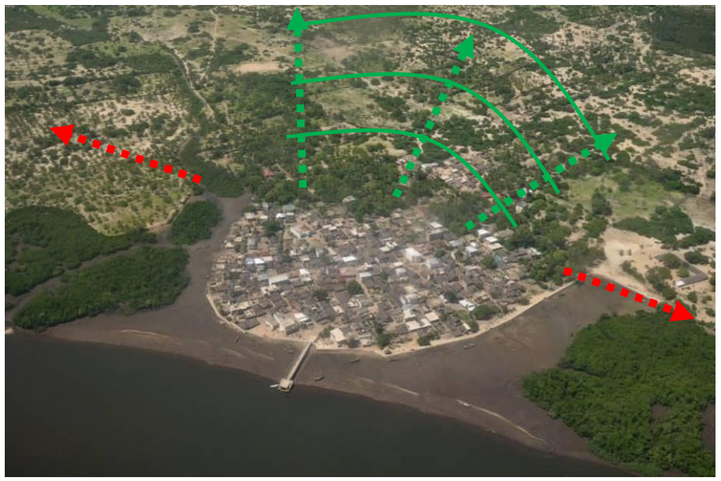
As previously discussed under zone 1 of the Heritage site, the projections that follows were computed and determined in the same way:

Population (2009 National Census)	Projected Population as at 2016	Projected Population as at 2020	Projected Population as at 2025
1,675	1,987	2,246	2,538

Based on the projections above, it is estimated that by 2020, the village will continue to grow and will need a land of about 14 Ha to sustain the growth. This means that an extra 2 Ha of land will need to be identified and Planned for in anticipation of this growth. It also means that an extra 4 Ha will be needed by 2025 since the total land demand based on the population projection will be 16 Ha. To accommodate all proposed permitted users within the extension Plan for Matondoni village, the County Government of Lamu need to be proactive to meet this future demand before it arrives and make prior Plans to acquire land estimated in this Plan.

It would be prudent that the expansion and growth of the village take a south direction towards the Agricultural land as shown

below (direction of green arrows). This would be to discourage linear growth of the village in either Easterly or Westerly direction (indicated by red arrow below) since this land borders the proposed zone for low density residential areas. The proposed growth direction is as shown below:



Growth of the settlement should be along the green lines as opposed to the red line direction.

KIPUNGANI

Source: Vincent Van Zeijst, May 2014

This is a small village on the West coast of the island past Matondoni on an area of about 4.8 Ha and a population of about 584 residents according to the National Population Census of Kenya, 2009. This population is however projected and estimated to be about 693 people in 2016. Just like other settlements within the Island, the population is projected to continue growing over time assuming the growth rate remains constant. It has very similar characteristics with Matondoni village apart from its vast beaches which are very viable for hotel investments. The permitted Users in the village are therefore quite similar as those of Matondoni discussed as follows:

PERMITTED USERS IN KIPUNGANI VILLAGE

Generally, the following shall constitute the permitted conditional users within Kipungani Village:

- ***Residential:*** Kipungani village is a well-established fishing village. The current dominant use is the residential function. This will be adopted as the major use of this settlement while still promoting commercial use ie. Hotel investments.
- ***Educational:*** There is no doubt that all residential areas need to be provided by the basic facilities including education facilities. On this note, areas for educational purposes will need to be identified in the expansion Plan of Kipungani village.
- ***Public Utilities:*** These include health facilities; religious facilities; and cemeteries to be allowed in Kipungani Village.
- ***Commercial/Retail activities/Hotel Facilities:*** The residents cannot survive without access to basic commercial commodities and hence, various commercial entities including Shops; Guest Houses; Hotels will be encouraged to locate within and around the village in its growth. More so, hotel investments will be highly encouraged in the neighbouring areas of the village especially along the open beaches in the zone proposed and discussed elsewhere in this Action Plan as Block A of the proposed Low Density Residential Mixed-Use zone.
- ***Non-Motorized means of Transport (NMT):*** As discussed above, residents of Kipungani Village will need transport infrastructure that promotes walking; or cycling.

LAND DEMAND AND POPULATION PROJECTIONS

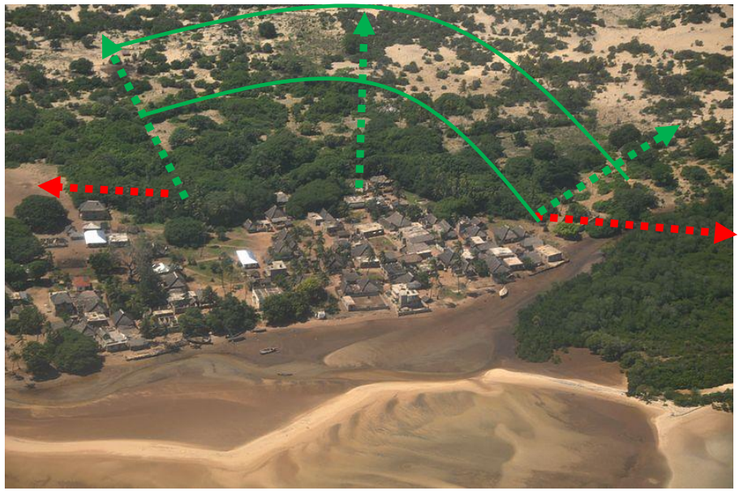
As previously discussed under zone 1 of the Heritage site, the projections that follows were computed and determined in the same way:

Population (2009 National Census)	Projected Population as at 2016	Projected Population as at 2020	Projected Population as at 2025
584	693	783	885

Based on the projections above, it is estimated that by 2020, the village will continue to grow and will need a land of about 5.5 Ha to sustain the growth. This means that an extra 1 Ha of land will need to be identified and Planned for in anticipation of this growth. Additionally, about 2 Ha will be needed by 2025 since the total land demand based on the population projection will be about 6.5 Ha. To accommodate all proposed permitted users within the extension Plan for Kipungani village, the County Government of Lamu need to be proactive to meet this future demand before it arrives and make prior Plans to acquire land estimated in this Plan.

It would be prudent that the expansion and growth of the village take a south direction towards the Agricultural land as shown below (direction of green arrows). This would be to discourage linear growth of the village in either Easterly or Westerly direction (indicated by red arrow below) since this land borders the proposed zone for low density residential areas.

The proposed growth direction is as shown below:



Growth of the settlement should be along the green lines as opposed to the red line direction.

ZONE 3: THE TRANSPORTATION LINKAGE

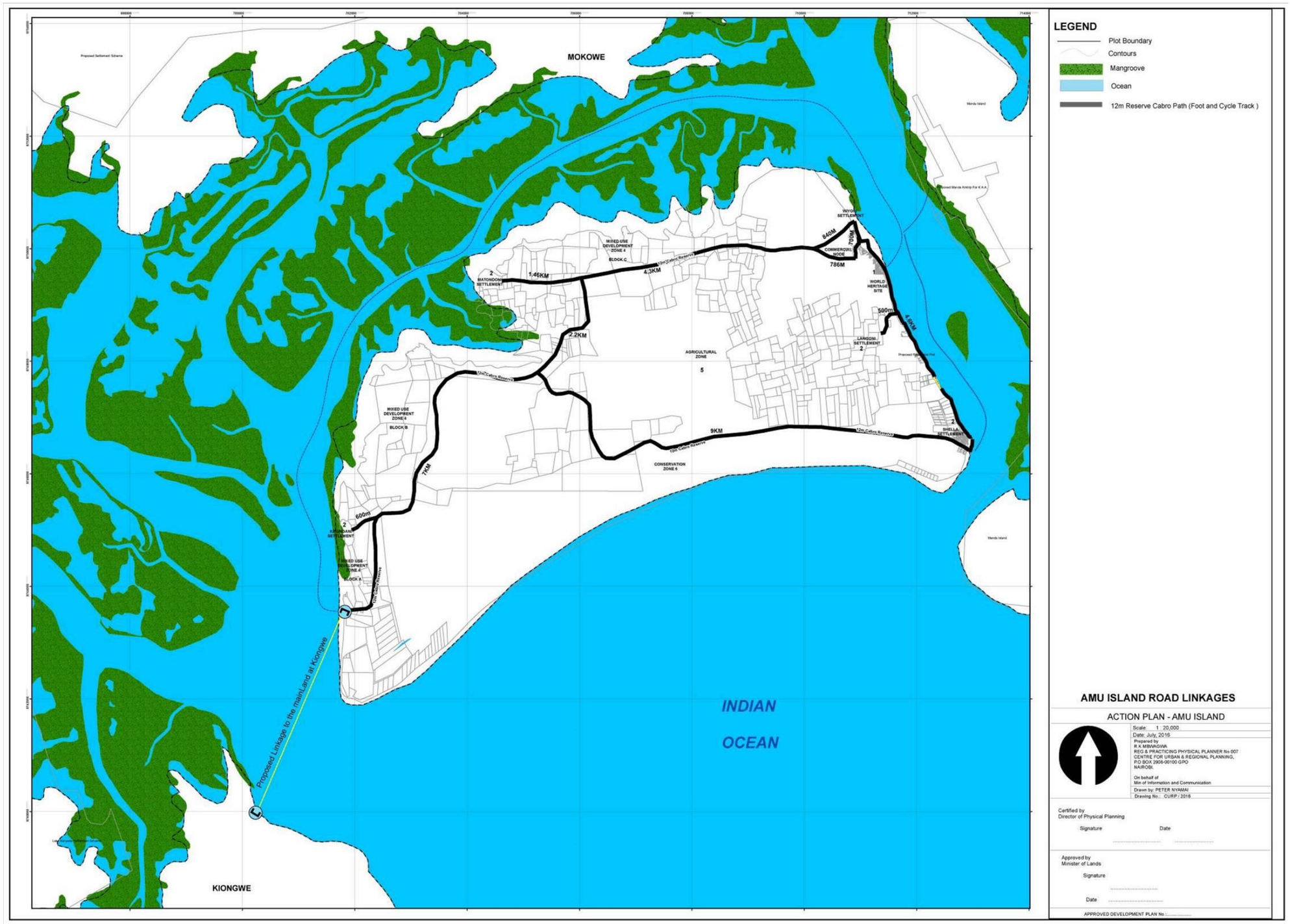
As stated earlier, there is a current deficit in the infrastructural linkage between the 6 human settlement areas within the Island. The existing connection to settlements further away from the Old Town to settlements like Matondoni; and Kipungani is not formally established. The only existing linkage is a cabro foot and cycle path that stretches from the reclaimed Wiyoni settlement through Lamu Old Town to Shela Town. This footpath is essential both as a public space and re-creative space for the residents and tourists. It promotes walkability of the settlement areas as a modern urban design principle aimed at enhancing healthy lifestyles of urban residents as they appreciate aesthetics of space.

It is on this premise that a similar 12 meters foot and cycle path is proposed on the island to link the Lamu Old Town to Matondoni village, and Kipungani village. Another similar path is proposed on the lower end of the Island which will form some sort of a ring within the Island when connected to the other one stretching from Lamu Old Town to Kipungani Village through Matondoni Village. From Kipungani Village, the road will continue in a westerly direction to an identified area on the ocean front where a jetty/bridge is proposed to connect the Island to the mainland at Kiongwe.

A tourist jogging on the footpath as local residents in the background enjoy the public space and aesthetic scenery of the surrounding.

Source: CURP, May 2016

The proposal is as follows:



The connection to the mainland at Kiongwe is very important as it reduces the time travel from the island to the agricultural rich areas and Urban Centres of vibrant economic activities in Bahari ward. It will also promote trade between the various Centres and offer options for travel routes to the residents of Lamu County especially the Archipelago residents. Consequently, trade will be boosted and the economic gains to the County will be expanded. This will improve the living standards of the people and promote sustained livelihoods. It is expected that the proposed footpath will only serve as cycle and walk infrastructure with limited motor use as earlier discussed. The cross section of various activities on the cycle/foot paths at any instance may look like the image below:

A cross section of the path on the upper part from Amu Town-Wiyoni to Matondoni village.

A cross section of the path on the lower part from Shella along the sand dune strip.

Source: CURP 2016

ZONE 4: PROPOSED MIXED USE ZONE

This will be a zone of low density residential area with a mix of other complementary land uses. It will be developed and promoted as a viable area for high value land within the County where development can be highly controlled. It location and proximity to the ocean will serve as means of restricted access to the rich mangrove forest rings in a bid to promote their conservation.

The main purposes of the zone are:

- To provide for residential use or development on larger lots where the infrastructure and environmental constraints limit development
- To provide for non-residential uses that are compatible with the proposed residential amenities
- To avoid land use conflict with adjacent Natural Resource (Mangrove Forest/beach fronts); or Agricultural zoned land by providing for adequate buffer areas.
- To provide for the non-existent low density residential areas in the Lamu Island

The desired future character relevant to the low density residential mixed use zone is contained in the land uses that are to be accepted and allowed in the zone. The proposed allowable uses are as follows:

Use	**Qualification**
Residential	Single Dwelling
Residential (Multi Dwelling)	To be allowed up to 4 floors including the ground floor
Educational including Child Care Facilities and Kindergatens	Child Care and Kindergaten is mandatory within the residential blocks. Other educational uses to be determined by catchment population
Hotel Use	A mix of hotel facilities to be allowed on all blocks on the front row from the mangrove rings of the proposed blocks. All hotel facilities should be multi-storey up to 5 floors to allow view of the ocean
Commercial	Low traffic commercial uses like convenient stores and shops
Natural and cultural values management institutions and offices	Only if intended for conservation purposes or management of the residential blocks
Passive recreation	Use that allow public access to the beach fronts like cycle tracks and footpaths or well-designed open spaces for public purpose on the proposed buffer zone
Visitor accommodation	Single dwelling with an extended guest house
Sports; recreation; and talent nurturing	Public facilities and open spaces
Religious Use	Only if mosque or other religious facility facility
Public Utilities	Land fill sites; fire assembly points and cemeteries
Prohibited	
All other uses	

The proposed users aim to serve as the basic anticipated land uses in the proposed zone for any ensuing Land Use or Block Plan. The status of any application is to be interpreted and determined by the Planning staff of the County Government of Lamu upon initial assessment of the application.

General guidelines and standards

These are the proposed standards set out to guide development within the zone. In particular, the standards provide guidance on matters relevant to the Low Density Residential zone and generally as follows:

Minimum lot size	Low Density Residential Area A – 2,000 sqm Low Density Residential Area B – 2,500 sqm Low Density Residential Area C – 1,000 sqm
Minimum lot frontage	50 meters from the highest point of the ocean front row properties bordering the mangrove ring
Front setbacks	Generally, 10 metres from the second row from the properties fronting the ocean
Side setbacks	To be contained within specified building schemes but generally anything above 6 metres is acceptable
Rear setbacks	10 metres at least
Height	Up to 5 storeys including the ground floor
Site coverage	25%

If your property is located within a land block defined by a Specific Block Plan, you should also refer to the standards contained within that Specific Block Plan as specified by the County Government. These standards apply generally as the basic guidelines and standards, however, they prevail over both the specific block Plan standards and code provisions where there is any conflict.

The proposed conservation area for the mangrove forest from the mixed-use zone will be as follows:

The proposed 50 meters buffer zone will accommodate certain users such as cycle tracks or foot paths which should not exceed 20 meters from the edge of the buffer bordering the proposed developments. The buffer zone may also accommodate users like well-designed public spaces to act as re-creative parks.

ZONE 5: AGRICULTURAL ZONE (AG)

The purpose of the AG zone is to support, protect, and maintain a viable, long-term agricultural sector in Lamu County specifically Lamu Island. Standards for the AG zone maintain the vitality of the agricultural sector by retaining parcel sizes necessary to sustain viable agricultural operations, protecting agricultural practices and activities by minimizing land-use conflicts, and protecting agricultural resources by regulating land uses and development intensities in agricultural areas. Permitted uses include crop cultivation, animal grazing, stock ponds, and agricultural processing.

The generally acceptable standards for the land sizes are as follows:

a) Small scale agriculture: Minimum land subdivision should be 0.75 Ha; and
b) Large scale agriculture: fruits and other cash crops - minimum subdivision shall be 2 Ha

This zone will be bounded by the proposed 12 meters cabro footpath on either side. Based on the agro potential of the area, the County Government through the Agricultural Extension offices will be expected to prepare relevant agricultural programmes to guide the farmers to ensure sustained agricultural production.

REZONING OF AGRICULTURAL LANDS

The rezoning of land zoned as agricultural land to a different zone shall be allowed only if all of the following criteria are met:

- The parcels for which rezoning is requested ("subject parcels") are adjacent to uses other than agriculture or agricultural support uses.
- The rezoning will not be detrimental to existing agricultural operations.
- The subject parcels are adjacent to existing development or infrastructure and conversion will constitute a logical contiguous extension of a designated user.
- No feasible development alternative exists that is less detrimental to agriculture.
- The rezoning will not otherwise interfere with the Lamu County Spatial Plan vision including the by-laws and set land use policies.

REZONING FROM LARGER TO SMALLER AGRICULTURE SUB-ZONES.

In order to preserve the viability of agricultural operations in Lamu Island, special criteria shall be met prior to the rezoning of parcels from one agricultural sub-zone to another agricultural sub-zone that allows a smaller minimum parcel size. The Planning board may approve an application for such a rezoning only in consultation with the County Director of Agriculture.

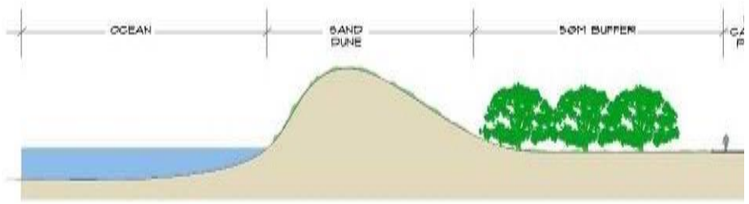
ZONE 6: CONSERVATION AREAS

These include the sand dune strip on the lower end of Shella and the Mangrove ring surrounding the Island on the shore line. These will be promoted as fragile ecosystems and strict guidelines towards conserving them proposed. They will be separated by compatible land uses that enhances their conservation.

The lower end of the Island where we have the sand dunes that are very vital as sources of fresh water to the Island will be separated by a buffer zone of 50 meters from the lowest point of the sand dune. A 12 meter cabro footpath is proposed at the edge of the

buffer zone to separate the sand dune conservation area including the buffer zone and the agricultural land. This separation by the footpath will prevent future encroachment through farming activities.

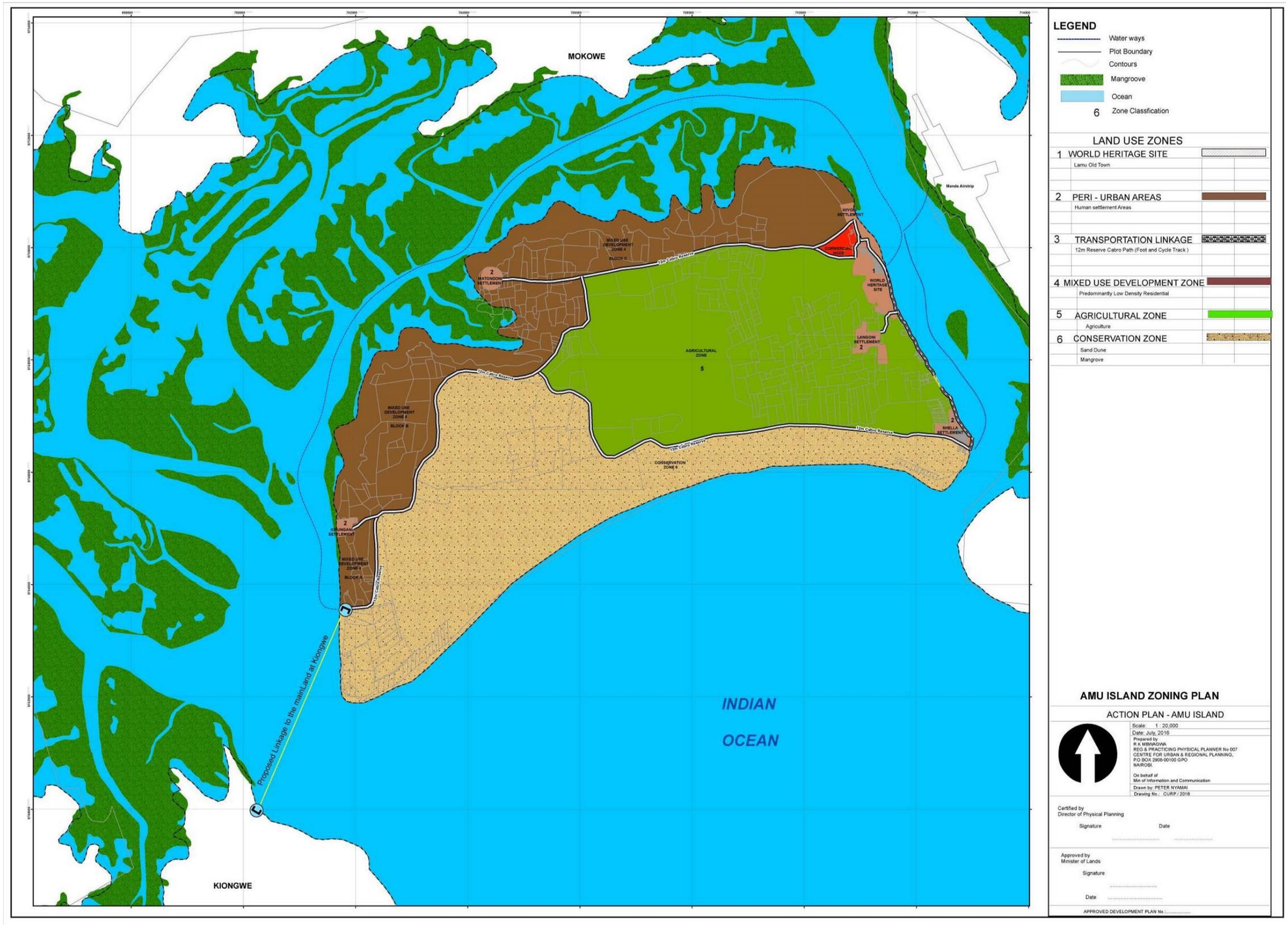
A cross sectional view of the anticipated protection area for the sand dunes in the lower end of the Island is as follows:



Source: CURP Consultants, 2016

The proposed mixed use zone where it is anticipated high level developments will take place is bordered by the mangrove forests on the ocean front side. The CGL is therefore tasked to leave a buffer zone of 50 meters from the highest water mark during demarcation of these blocks that are to be developed as high end residential areas with allowance for commercial activities including hotel facilities; educational purposes; public utilities and public purpose facilities and spaces. This is proposed as follows:

THE ZONING ACTION PLAN



MANDA ISLAND PORT CITY(MIPC) ACTION PLAN DESIGN GUIDELINES & STANDARDS (WORK IN PROGRESS)

OVERVIEW

The relationship between physical space and communities is a definitive understanding of how to Plan and develop quality environments in such a way that they both maximize on space gain and minimize the negative effects on people's lives on the physical spaces they inhabit.

CONCEPT BEHIND MIPC PLAN

The concept of this MIPC Plan is anchored on Urban Design Principles on land and land use. Urban design combines a concern with the visual form and function of development with its fit in its surroundings and wider context. The subject of the public realm, achieving a sense of place and the public significance of new development, is vital within the urban design perspective. Matters such as community safety, accessibility, sustainability, quality of life and protecting the heritage legacy, are key concerns and are significant elements within the urban design agenda anticipated by this Plan.

Urban design is about creating a 'place' in which every land use recognizes that it is part of a greater whole in which development either contributes to making the urban fabric coherent or undermines it. This is for example, low rise buildings proposed adjacent to higher neighbours should provide attractive roof patterns. Good places are what will make the MIPC so distinctive and recognizable. Where there will be no built context, or comprehensive development is proposed, a 'coherent' urban fabric which will be defined by certain characteristics (Urban Design Principles) as discussed below.

1. **Walkability**

Walkability as an urban design concept will be highly encouraged by the design of the MIPC Plan. This is the measure of ease in which pedestrians move through a space, rather, spaces designed as pedestrian friendly environments. It is aimed that this will be achieved through provisions of clear access network, a coherent spatial structure through appropriate building spacing and views to various land marks to help people to orientate themselves. Walkability has both health, environmental and economic benefits. The idea behind this is to make the MIPC a complete walking/cycling city that adopts a healthy living lifestyle and adapts to the outlying values of Lamu island which is a heritage Island with no motor vehicles.

2. **Frontages, Edges and Boundaries**

Building frontages will address or offer informal supervision to the streets, open spaces, walkways along canals, ocean front etc. The MIPC Plan proposes a variety of building types that will accommodate different uses, lifestyles and enhances a sense of community safety. This is because the pedestrians not only need to feel safe and comfortable, but they also need to be entertained.

3. **Attractive Spaces**

Successful urban space of the MIPC will be defined and enclosed by buildings, structures and landscape. The relationship between the buildings on the street, and between buildings and the street, are the key to this. This will be complemented by open spaces that will be an integral part of the design and not a left over. All these elements together will culminate as aesthetic and attractive urban spaces of the MIPC

4. **Sustainability**

The MIPC Plan has been made proposed in a manner that adopts sustainability as an urban design principle. Sustainability is the ability of communities to minimize their impact on the environment, in order to create neighborhoods that endure. This understanding will be enhanced in the MIPC Plan by incorporating the Island's natural resources as integral features of its design. The Plan will combine environmental resources and the people to enhance continuity, uniqueness and place making.

5. **Compatibility**

The proposed land use blocks in the MIPC has been proposed in a way such that they complement one another. The height, mass and location of buildings as well as the uses contained within them, will create patterns that define the neighborhood character. Buildings within a neighborhood should be compatible with the pattern of its surrounding context.

6. **Landmarks and meeting places**

A civic space, landmark buildings or public institutional facilities to mark the MIPC Plan Centre. This focal point will give activity and 'life', 'punctuation' in the built form to the wider context and convenient access to the public to strengthen and enhance the community's social fabric. The civic space will provide visual identity and a sense of uniqueness within the community.

7. **Lamu's cultural heritage**

The development of the MIPC Plan will be innovative and of high quality building designs influenced by Lamu's heritage without resorting to the ancient designs of existing buildings in the Old Town. Emphasis should be given to recognition of context, natural materials and craftsmanship within Lamu County.

CONCEPTUAL LAND USE BLOCKS

The development of the MIPC Plan will include regular blocks whose size and arrangement creates development patterns that support active transportation options and, in turn, community health and wellbeing. The purpose is to direct the design of blocks and large development footprints in a way that balances the conditions found in the existing community, the transportation requirements of the proposed uses, and the patterns necessary to support active pedestrian friendly environments.

Land use and density changes should transition in adjacent blocks, as opposed to facing blocks across streets, as much as practical to maintain consistent streetscapes. Land use mixes shall be arranged to maximize the function of all uses, taking into account impacts on, and interrelationships with, adjacent uses; priority sites; and transportation access. The integration of sidewalks, parks, and walkway connections through the park will enhance safety in the MIPC Plan since activities will be increased on the streetscapes providing natural surveillance opportunities.

The following components of land use were considered in the making of this Plan:

- Residential land use
- Commercial land use
- Industrial, trade & tourism related land use
- Government & public building related land use
- Green land use; open spaces, parks, sports & culture

These are discussed below in the following categories:

1. Special Areas

The following environmentally sensitive and conservation areas will be regulated by the MIPC authority appointed under the County Government of Lamu:

1. Mangrove Forests coast line
2. Sand dunes
3. Fish and Wildlife Habitat Areas
4. The open parks and leisure areas
5. The Airport land

If a site is located within or adjacent to any of the areas listed above, there may be additional development restrictions or requirements, such as special reports and studies, buffers, enhanced treatment, etc. Additionally, there are types of developments that will need a particular careful design approach at the strategic level including those developments that are:

- located at or along the Green Belt edge; around the proposed public jetty; and along the boulevard or another major linear feature;
- in areas of strategic change like the concentrations of industries and warehouses, large institutions, road junctions etc
- capable of contributing significantly to the city's public realm, particularly the civic/ green spaces

2. The City Streets

An underlying assumption of the urban design principles adopted is that comfortable, attractive public space evolves from an intentional development process rather than a result of accidental occurrences. The concept of the "street as a room" is central to this approach. Just as the layout of the interior of a home can create a pleasant and functional indoor living environment, the design of a neighborhood can create a functional, efficient, and pleasant outdoor living environment. Squares and street space act as rooms, while building facades form the walls of the room. The relationship of building placement and scale to the width of exterior space is critical to the creation of a comfortable, inviting public realm.

Since streets are the most common public spaces, one of the most important goals of urban design is the control of street space. The ratio of street space width to adjacent building height is a proportion whose manipulation generates places of different character. The sense of spatial enclosure is related to the physiology of the human eye. Basically, if the cone of vision encompasses less street wall than sky opening, the sense of enclosure will be minimal. If the street wall is greater than the amount of sky, a sense of enclosure will result.

Accordingly, the MIPC has adopted an interesting pattern of ending streets at the water's edge including a 60meters wide proposed ring road all-round the island along the coast line which provides both visual and physical access to the water. All streets have been designed in a grid pattern connecting to the main central 80meters wide boulevard to provide for both physical and visual access to the water and other proposed amenities.

The MIPC has proposed the interconnected street network to improve mobility by providing more options to reach a destination and the dispersal of traffic, as well as making it easier for pedestrians to access more direct routes between destinations. The features of the interconnected network of streets in the MIPC include a hierarchy of streets, connected through shorter walkable land use blocks, and more frequent intersections to calm traffic.

The highest street in the hierarchy being the proposed 80m wide central boulevard which is connected to the 60m wide Ring Road and the 30m wide circulation street networks. The widths of the roads have been proposed bearing in mind that room for interesting street furniture and other amenities need to be created in a bid to encourage walkability of the City as opposed to motor transport.

Pedestrian Circulation

The MIPC Plan requires specifically designed pedestrian areas adjacent to main entrances of developments. Pedestrian ways and connections shall be designed to be convenient, comfortable, safe and easily navigable, continuous and barrier-free. All pedestrian ways shall meet the following:

- Be unobstructed and without unnecessary meanders around built obstacles such as bollards and other signages. The use of bollards as protective devices in these locations shall:
    a. Include decorative bollard designs; and,
    b. Be combined with landscaped Planter beds or raised Planters.
- Appropriate accessibility components and design for persons with disabilities shall be integrated into the overall pedestrian circulation system including ramps and sight assistance strips and textured edges at grade transitions and street crossings for instance;
- Street furniture that is integrated into site design as pedestrian amenities along sidewalks and pedestrian ways. The type, location and design of chosen amenities shall contribute to a well-balanced mix of features along the pedestrian way based on the location, type of walkway, intended use and expected number of people; and shall be located to provide amenity while also ensuring a barrier free and uncluttered visual environment.

3. Commercial Areas

The MIPC Plan provisions that apply to Commercial Areas are intended to:

- Create active and highly useable business areas;
- Create sites that are compatible and connected to neighboring land uses;
- Achieve the desire for a Sustainable Community Plan by having more efficient development patterns and buildings;
- Improve access and safety with infrastructure and amenities that support people's activities; and,

- Support active street surveillance with appropriate amenities and options for street landscaping.

4. Residential Areas

The residential areas of the MIPC Plan have been proposed in such a way that both the high; medium; and low density residential neighborhoods will;

- Create highly livable residential developments with access to basic services, open space, recreation, and neighboring uses;
- Create aesthetically pleasing residential neighborhoods with streetscapes and buildings that are well suited to the community; and,
- Provide access to various high-quality private and public spaces associated with residences.

5. Water Courses

To preserve and enhance watercourses, and to maintain the habitat value and charm that the natural environment brings to residents and visitors, all water fronts including the beach front, proposed manmade canals shall remain open and uncovered for the public benefit. Streets, parks, and other public spaces adjacent to water courses and the waterfront shall provide lookouts for people to experience the natural features. These should be designed to provide undisturbed viewing areas away from vehicle, foot or bike traffic at locations that maximize the potential for users to comfortably experience these natural assets.

The water edge along the proposed public jetty shall always be maintained and developed with public access. Water access should include the development or continuation of a public walkway along the water's edge, and should also include:

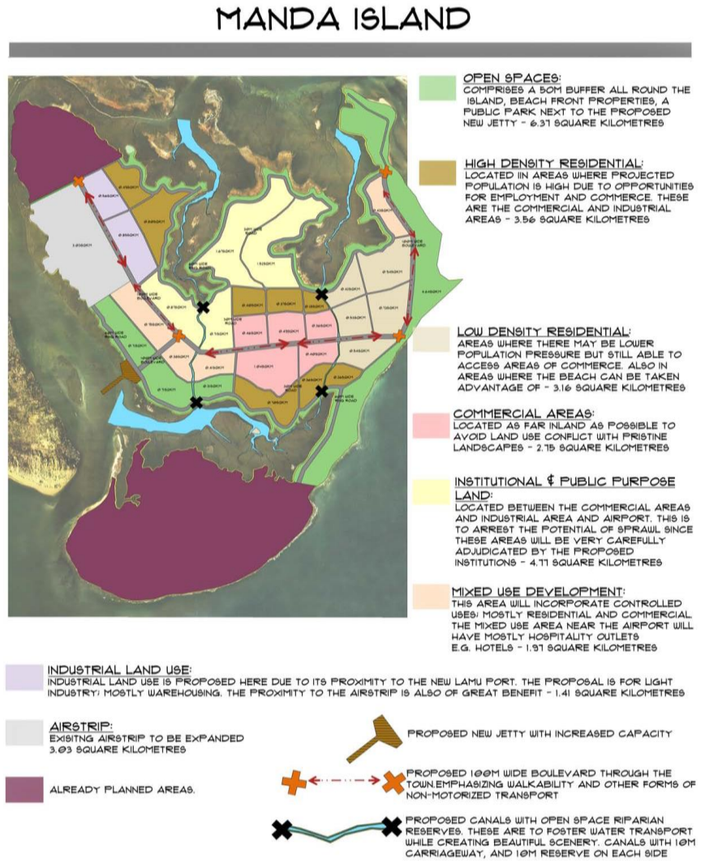
- Lookouts; and/or, Physical access to the water including boat launches;
- open shoreline access for pedestrians;
- fishing spots; docks;
- and other similar uses as most appropriate to the location, site proposal, and reasonably expected use.

Such natural water feature lookout and viewing points shall at a minimum contain the following features:

- Seating for at least three people;
- Shade tree or structure; and,
- Interpretive signage describing the natural feature being viewed or, public art.

THE MIPC PROPOSED LAND USE BLOCKS

The Planning of Manda Island is highly influenced by high value principles of Urban Design. This Plan has been proposed to contrast well with the Heritage Island of Lamu. It is aimed to raise the land values in Manda and convert it into an eco-touristic port city. The Plan has been proposed into land use blocks as follows:



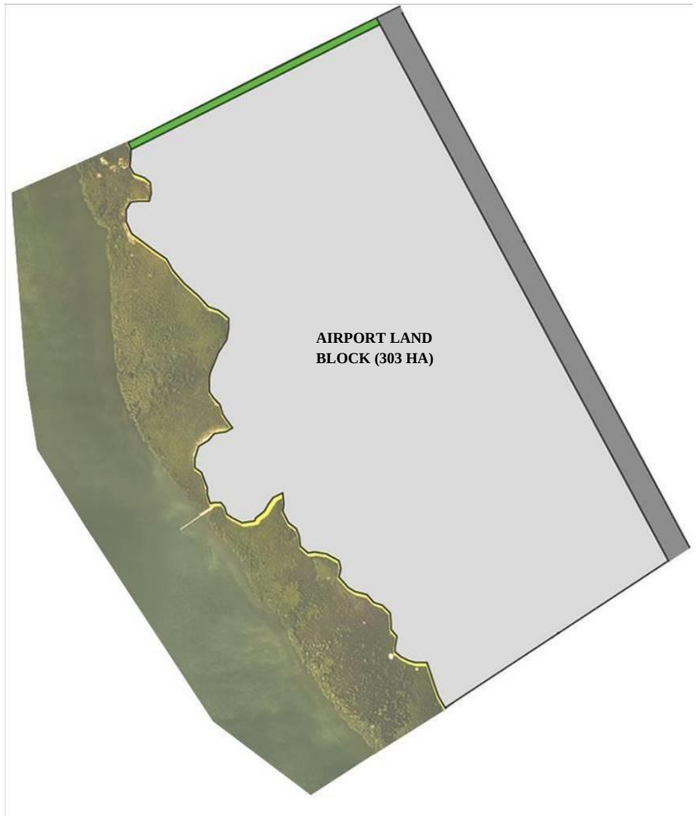
AMUSEMENT CENTRE

The proposed amusement Centre covers an area of 90Ha and it is located on public land in Manda Island. It will offer visitors and residents a wide variety of recreational and entertainment activities. It shall be an integrated amusement establishment having, inter alia, an aquarium with a wide range of marine life for educational purposes, a botanical garden, an opera house for cultural performances and family-oriented amusement facilities. A yacht harbor will also be built as a marine sport and amusement facility.

The amusement Centre has been proposed next to the airport land. It has been adopted as a component of the Lamu Port Resort City.

AIRPORT LAND

The airport land will be big enough approximated to about 303 Ha to accommodate any current and future expansion. The land uses around the airport land will be controlled such that encroachment will be highly discouraged. The adjacent proposed land uses have also been proposed such that they act as the main buffers to the land for both discouraging of encroachment and for security reasons.



INDUSTRIAL LAND

The Industrial land has been proposed due to its proximity to the airport and the anticipated Lamu Port through LAPPSET. The industrial area will comprise light industrial activities which may include light manufacturing, warehousing, wholesale and distribution, agricultural and fishing storage and processing, meat packaging. The County Government may take it upon itself to develop warehouse and storage facilities as a capital investment venture which will attract other industries to the space.

Warehouses and go-downs are designed to provide a proper environment for storage of goods that require protection from the elements of nature. These must be designed to accommodate the loads of the materials to be stored, handling equipment and receiving and shipping operations. These facilities need to be designed for minimum turnover time.

These storage facilities may come in 2 basic types:

- Heated and unheated general warehouses – These provide space for bulk rack and bin storage.
- Refrigerated warehouses – These are those designed to preserve the quality of perishable goods and general supply materials that require refrigeration. These facilities will be key in the proposed industrial area because they complement the agro processing and Fishing industries that are envisioned to be triggers of Lamu County's economy proposed elsewhere in this Planning report. The potential for improved fishing and beef yield, packaging and export is high and facilities like these will only serve to make these aspects key economic drivers of the County's economy.

One of the considerations for the industrial area are buffer zones especially from the adjacent Amusement centre and Institutional land use. A 50M industrial buffer yard will be located along the outer perimeter of a property line of these abutting land uses. Within these buffer yards, will be vegetated with a mix of deciduous and evergreen trees and shrubs of suitable type, size and spacing to ensure all year-round screening.

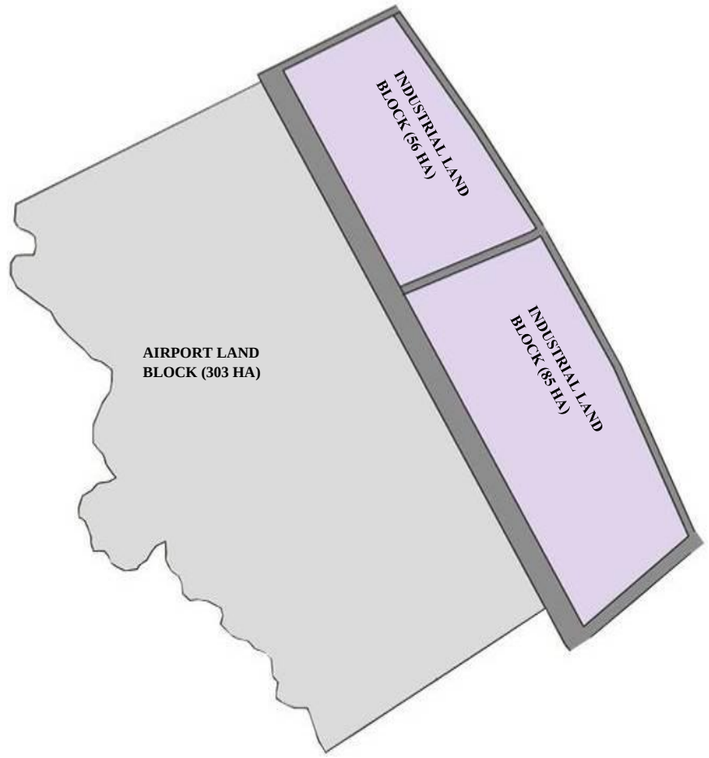
Industrial area buffer zones will not be used for driveways, parking lots, trash enclosures, paved or building areas. Due to the proximity of the Industrial zone to Manda Airport, considerations need to be made concerning the building heights that are acceptable. Building heights have a huge impact on airPlane flight paths and therefore on the safety of landing and take-off. For this reason, the building heights within the Industrial block will reach a maximum height of 10M. If the need to build beyond this height special permission will have to be sought, and impact assessment performed to understand the ramifications of higher building heights.

Another consideration to be made within this Industrial zone is how the land will be utilized as far as minimum plot sizes and floor area ratios. The ideal lot sizes for this land use will be 1 acre though half acre lot sizes may also be allowable. These will ensure the industries that will be located here are not congested. This specification in conjunction with a Floor area ratio of 0.5 will ensure a spacious industrial complex.

The Industrial precinct requires some complementary activities and land uses. The first and most important of these complementary uses is the function of circulation. Users of the industrial zone need to access the site and move around within it. For this purpose, 30% of the 141HA set aside for this use needs to be dedicated to movement. This function entails motorized (only attached to airport-cargo Planes or port shipping activities) and non-motorized transport and terminal facilities.

Apart from circulation there will also be consideration for other activities like a small commercial district and maybe some staff housing which will complement the adjacent high density residential areas. These complementary uses are meant to remain as such, complementary. And as such they will be capped at 20% of the industrial area. These may have slightly higher densities with the minimum lot size capped at a quarter of an acre and a floor area ratio of 0.75.

The position of these industries is complimentary to the use of the already proposed Lamu Port and the proximity to the Airport as shown below:



RESIDENTIAL AREAS

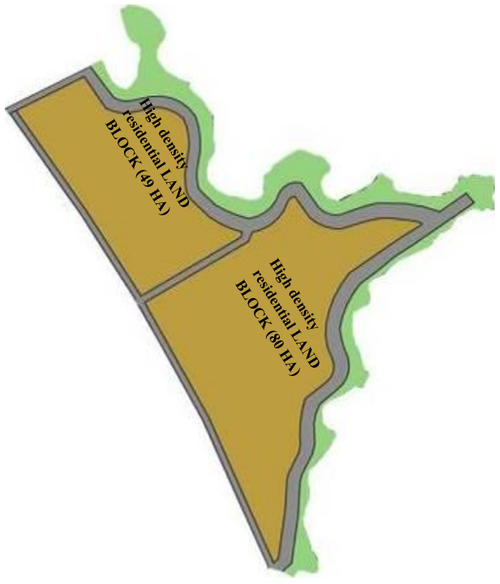
The arrangement of lots for different types of residential densities and/or uses should meet the following as much as practical:

Residential densities should be mixed throughout the development with denser residential uses located at the ends of blocks and/or adjacent to parks, community amenities, or civic uses and buildings, and collector or arterial streets;

Block R1

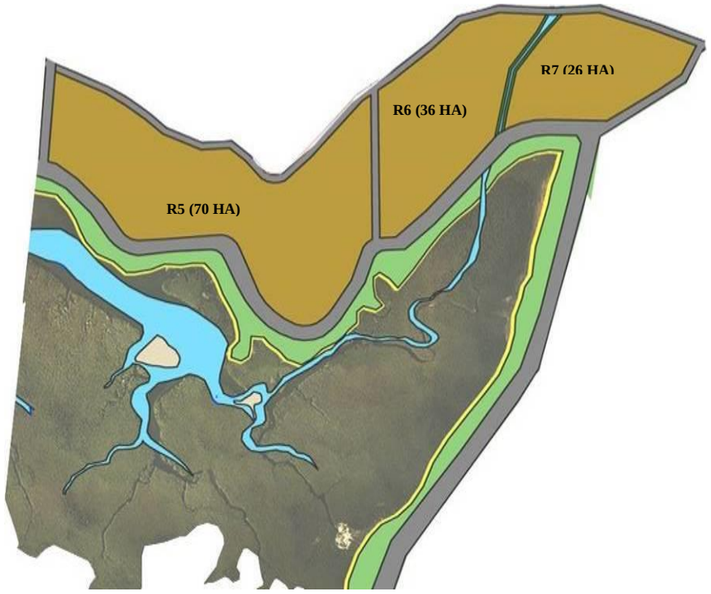
This has been proposed near the industrial zone as it is expected that people working there would need residence. It is proposed to be a high density residential block to accommodate as many people as possible who will be working not only on the industrial zone proposed but also on the adjacent main Lamu Port under the LAPSSET project.

The particular Block is as shown below:



Blocks R2; R3; R4; R5; R7; & R8

Just like block R1, these also will be high density residential blocks.



Standards for high density residential Blocks

Residential neighbourhoods within these blocks should be handled as comprehensive developments on minimum lot sizes of at least 5 acres. The developments encouraged on these comprehensive development lots will mostly be high rise residential structures of up to 4 floors. Expected plot coverage of these comprehensive developments will be 80% factoring in built up area and provisions for infrastructure and public utilities. The remaining 20% is reserved for open spaces and community facilities.

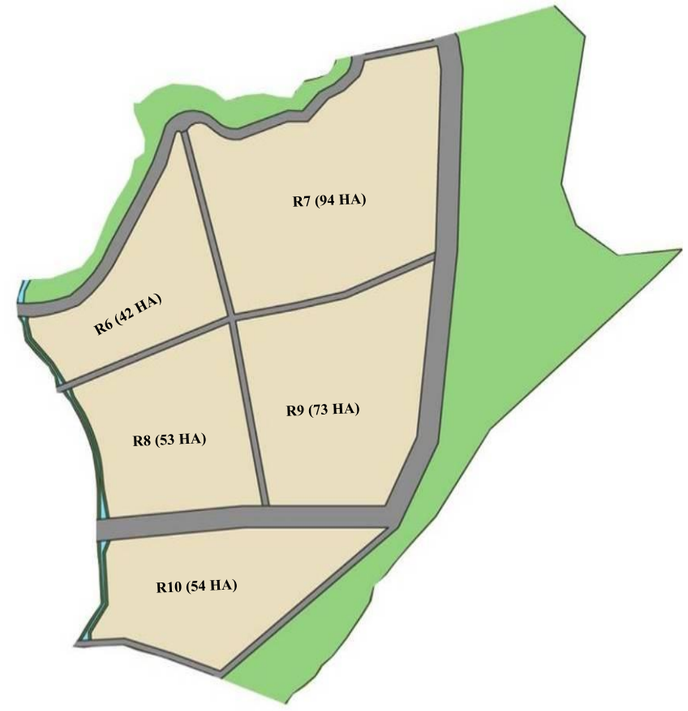
Apart from these standards of space utilization, concepts of sustainability and safety will need to be adhered to. These will include water and energy conservation, enhancement of community life, maximization of visibility and surveillance of public environment, reduced isolation of buildings and spaces and an aspiration to aesthetic appeal through implementation and maintenance of landscaped areas among others.

Blocks R6; R9; R10; R11; R12

These will be low density residential blocks. Their location has been encouraged by their close proximity to the open ocean front and the coastline. Land subdivision on these blocks will be allowed up to a quarter of an acre with maximum plot coverage of 60%.

Preference will be placed on single dwelling residential units unless otherwise permitted with proper justification. In case there are multiple dwelling residential units allowed in these zones, they must not exceed 8.5m in height above ground level (2 storeys). It should be a development standard that such larger developments must integrate with the neighbourhood and integrate with the local street network and explicit permission will be sought from the responsible Planning office within the County Government of Lamu.

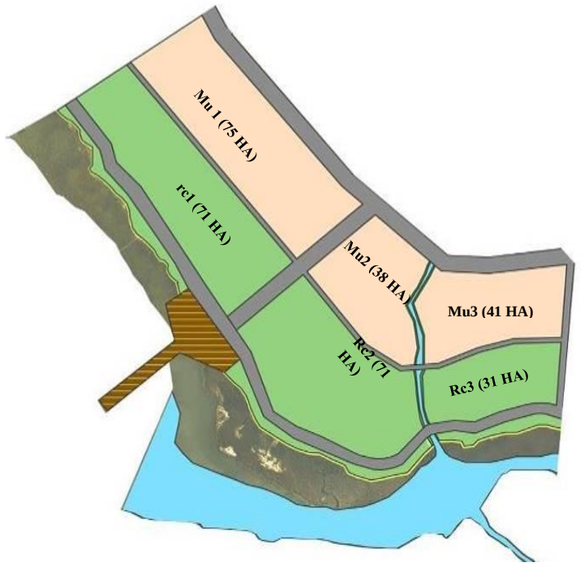
The land blocks to be utilized for these purposes are shown below:



An artistic impression of block R7 and R9 along the boulevard headed towards the commercial node on the horizon (White structures)

Blocks RC1; and RC2

This is a green belt proposed as an entry point to Manda Island from Lamu Island through the proposed public jetty. They act as the main open spaces and parks within the island accessible to the public. The two blocks also act as screening blocks for security reasons before you get to the mainland which is Manda. They front a stretch of hotel facilities that are proposed adjacent to the parks giving it a strong sense of aesthetic appeal.



Blocks MU1; and MU2

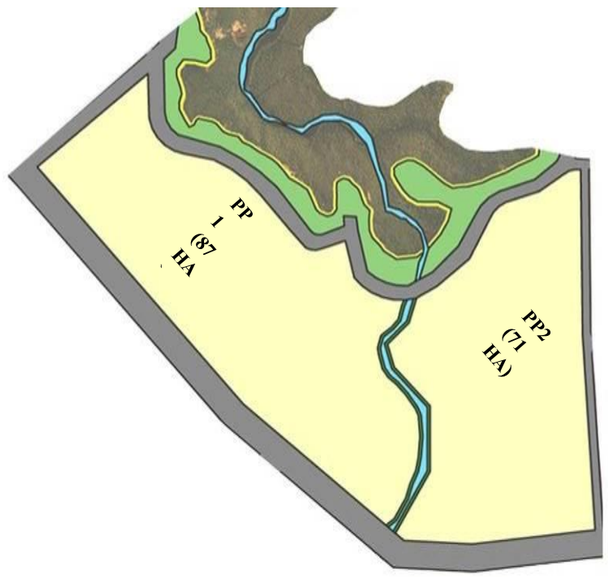
These blocks have been proposed for mixed use development. They will be controlled blocks where the only uses highly encouraged are institutional offices to boarder the main boulevard that will not be encouraged above 4floors.

On the lower side bordering the open space leisure parks, a stretch of hotel facilities will be encouraged. These could be allowed to go up to 8floors. The land blocks border the recreation blocks as shown above.

Block PP1; and PP2

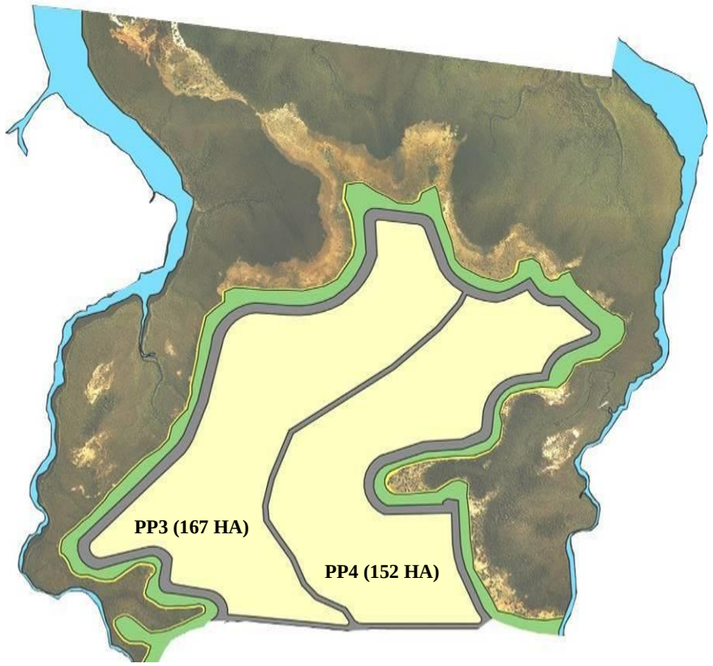
This block has been proposed at the Centre of the island. It has been proposed for public use and to act as the civic area of the island. It compliments well with the adjoining areas including the centric arterial boulevard and the canal channel. On it, the proposed uses will be very controlled.

A public square is being proposed on this block which can be in form of a Mosque; a Kadhi court also is being proposed here; offices such as those of KAM; or Maritime authority will fit in well within this block. The idea is that this block will be highly controlled and given an institutional reference where buildings will be encouraged to go upto about 4floors at most.



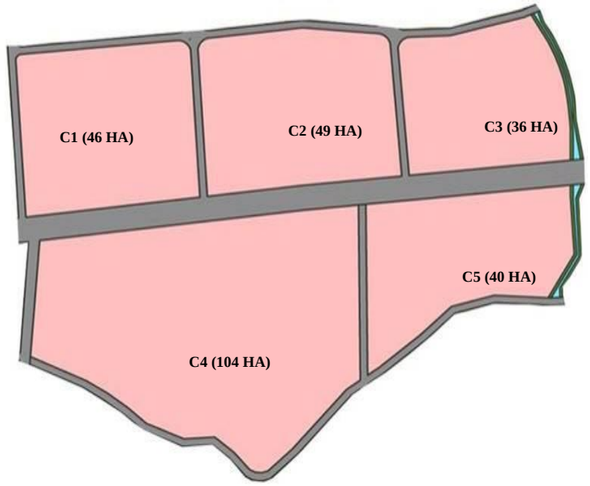
Block PP3; and PP4

These blocks are proposed for public purpose. Public institutions such as a research institution for marine technology and any other complimentary institutions involved with research for instance a University geared towards marine life and marine studies would be highly encouraged in these blocks. They are huge enough to accommodate the needs of such institutions and their proximity to the ocean and a huge area occupied by mangrove is an added advantage for their research advancements. These blocks also viewed as potential land banks in anticipation of the growth of the needs for the Island.



THE COMMERCIAL AREAS (C1; C2; C3; C4; AND C5)

These are land use blocks along the central boulevard that are being proposed as a commercial node for the Island. On these blocks, both wholesale and retail activities will be allowed within these blocks.



Source: CURP, 2016

An artistic impression of the commercial node:

Source: CURP, 2016

THE BOULEVARD

It is anticipated that the boulevard will be a highly walkable pedestrian highway with friendly amenities such as courtyards and seating areas, pedestrian plaza with benches, window shopping walkways, outdoor playground areas, kiosk areas, water features, clock towers, and other such focal features. Installation of public art in corporation with and controlled by the County Government is encouraged. These areas shall have direct access to the citywide bicycle and pedestrian circulation systems and transit stops.

An artistic impression of the boulevard will be as follows:

Source: CURP, 2016

GENERAL DESIGN GUIDELINES ON BUILDING SITING AND ORIENTATION

The designs of buildings in Manda will affect the overall character of the commercial district and each building must therefore be considered prior to design and construction so as to arrive at a harmonious urban form. Some of the proposed general building guidelines for all the buildings in the island are as follows:

- Primary building entries to those buildings along public streets shall be accessed from courtyards and not from direct access to these public streets
- Due to the coastal climate, considerations must be made for solar heat gain and loss. East West orientation of shorter edges of buildings will ensure minimal heat gain and reduce use of air conditioning.
- All buildings will have to be designed in a manner that allows natural ventilation to help manage on energy applied for air conditioning
- Buildings shall also be sited in such a way to enhance relationships between buildings, promote pedestrian circulation and creating pedestrian oriented gathering places like plazas and positioning entries of buildings so that they are easily identifiable from interior and exterior pedestrian circulation.

ARCHITECTURAL CHARACTER

To retain a sense of Lamu and specifically Manda as a unique place, buildings will be designed with consideration given to the climatic conditions and indigenous architecture. There will be installations like entrances, fences, ledges and arcades to take advantage of passive and active solar applications.

Pedestrian scale buildings, open spaces, natural materials and a coastal design of buildings to create a recognizable character of Manda that resonates with the history of Lamu must be adhered to in the building designs of all structures in the proposed City.

As an overall, the proposed design model for the MIPC will be as follows:

MANDA ISLAND

MANDA ISLAND PRESENTS AN OPPORTUNITY FOR THE DESIGN AND IMPLEMENTATION OF A SMART CITY, WITH DENSIFIED COMMERCIAL AREAS OF BUILDINGS UP TO 5 FLOORS, WELL ORGANIZED TRANSPORTATION, LIGHT INDUSTRIAL ACTIVITY, AND IDEAL RESIDENTIAL AREAS.

TRANSPORTATION WITHIN THE ISLAND WILL BE PRIMARILY NON MOTORIZED. BICYCLE AND WALKING PATHS WILL LINE ALL MAJOR ROADS. MOTORIZED TRANSPORT WILL MOSTLY BE THROUGH A REGULAR BUS SERVICE.

CANALS DESIGNED FOR WATER TRANSPORT AND FOR THEIR AESTHETIC VALUE

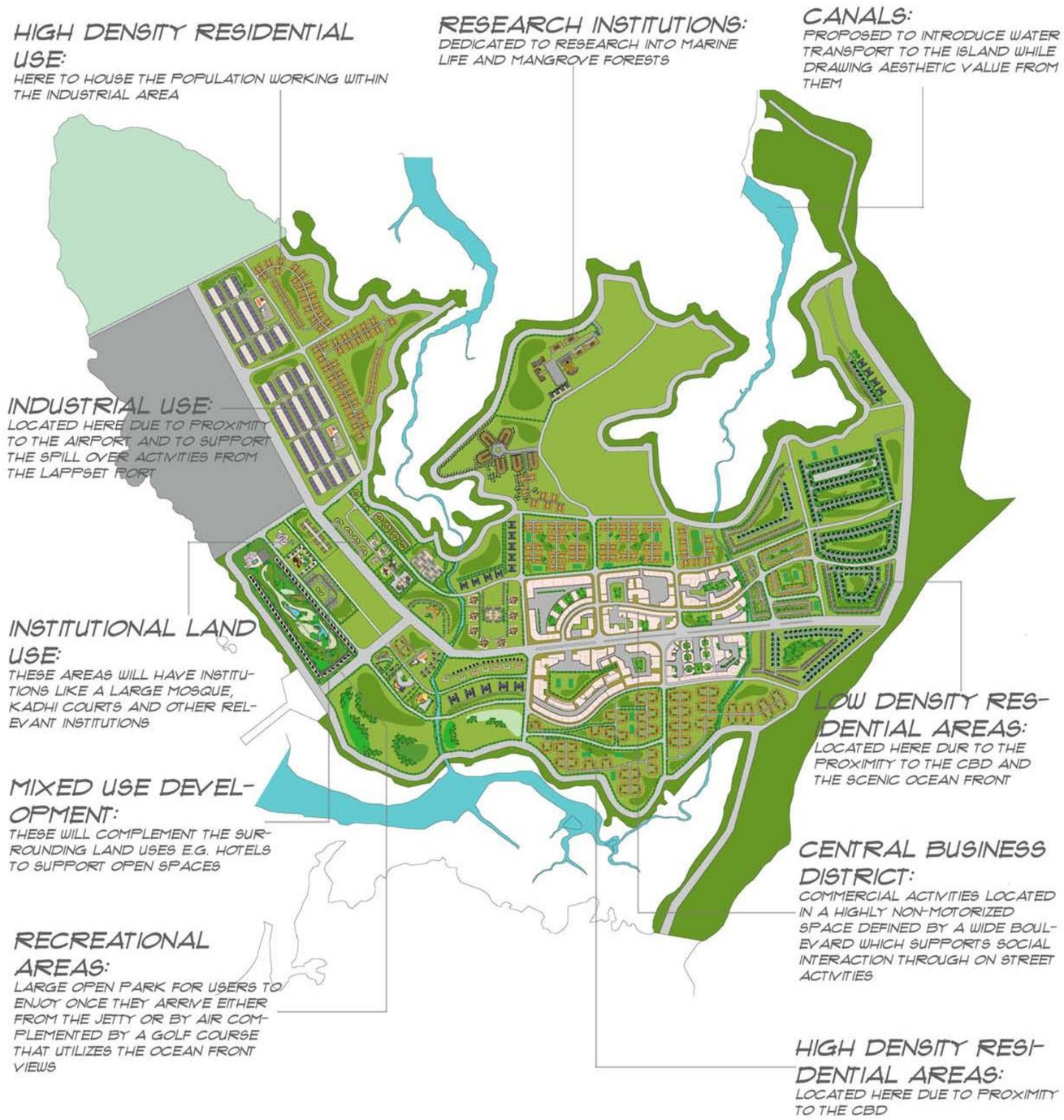
RESIDENTIAL AREAS LOCATED AROUND THE CENTRAL BUSINESS DISTRICT TO MINIMIZE THE NEED FOR MOTORIZED TRANSPORT. THESE AREAS ARE DESIGNED COMPLETE WITH PLAYING FIELDS, WALKING AND CYCLE TRACKS.

STREETS WITHIN THE CENTRAL BUSINESS DISTRICT WILL HAVE CAFES, COFFEE SHOPS, FRUIT VENDORS AND SIMILAR ACTIVITIES TO ALLOW PEDESTRIANS AND CYCLISTS TO INTERACT WITH THE SPACE THROUGHOUT THE DAY. THERE WILL ALSO BE PLAYGROUNDS AND OTHER OPEN SPACES

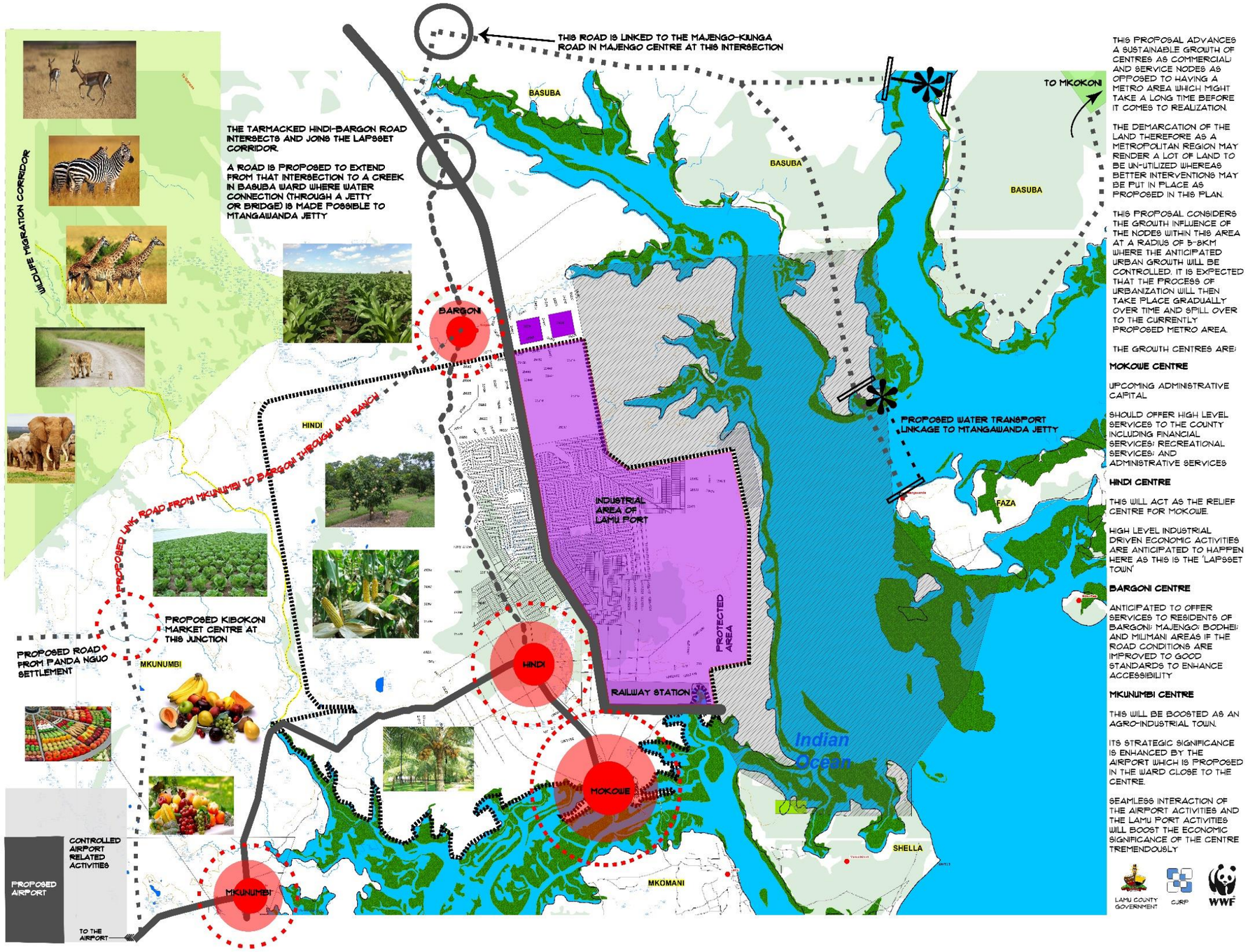
COUNTY GOVERNMENT OF LAMU

CURP

WWF


HIGH DENSITY RESIDENTIAL USE:
HERE TO HOUSE THE POPULATION WORKING WITHIN THE INDUSTRIAL AREA
RESEARCH INSTITUTIONS:
DEDICATED TO RESEARCH INTO MARINE LIFE AND MANGROVE FORESTS
CANALS:
PROPOSED TO INTRODUCE WATER TRANSPORT TO THE ISLAND WHILE DRAWING AESTHETIC VALUE FROM THEM
INDUSTRIAL USE:
LOCATED HERE DUE TO PROXIMITY TO THE AIRPORT AND TO SUPPORT THE SPILL OVER ACTIVITIES FROM THE LAPPSET PORT
INSTITUTIONAL LAND USE:
THESE AREAS WILL HAVE INSTITUTIONS LIKE A LARGE MOSQUE, KADHI COURTS AND OTHER RELEVANT INSTITUTIONS
LOW DENSITY RESIDENTIAL AREAS:
LOCATED HERE DUR TO THE PROXIMITY TO THE CBD AND THE SCENIC OCEAN FRONT
MIXED USE DEVELOPMENT:
THESE WILL COMPLEMENT THE SURROUNDING LAND USES E.G. HOTELS TO SUPPORT OPEN SPACES
CENTRAL BUSINESS DISTRICT:
COMMERCIAL ACTIVITIES LOCATED IN A HIGHLY NON-MOTORIZED SPACE DEFINED BY A WIDE BOULEVARD WHICH SUPPORTS SOCIAL INTERACTION THROUGH ON STREET ACTIVITIES
RECREATIONAL AREAS:
LARGE OPEN PARK FOR USERS TO ENJOY ONCE THEY ARRIVE EITHER FROM THE JETTY OR BY AIR COMPLEMENTED BY A GOLF COURSE THAT UTILIZES THE OCEAN FRONT VIEWS
HIGH DENSITY RESIDENTIAL AREAS:
LOCATED HERE DUE TO PROXIMITY TO THE CBD

THE PORT AREA ACTION PLAN



THIS PROPOSAL ADVANCES A SUSTAINABLE GROWTH OF CENTRES AS COMMERCIAL AND SERVICE NODES AS OPPOSED TO HAVING A METRO AREA WHICH MIGHT TAKE A LONG TIME BEFORE IT COMES TO REALIZATION.

THE DEMARCATION OF THE LAND THEREFORE AS A METROPOLITAN REGION MAY RENDER A LOT OF LAND TO BE UN-UTILIZED WHEREAS BETTER INTERVENTIONS MAY BE PUT IN PLACE AS PROPOSED IN THIS PLAN.

THIS PROPOSAL CONSIDERS THE GROWTH INFLUENCE OF THE NODES WITHIN THIS AREA AT A RADIUS OF 5-8KM WHERE THE ANTICIPATED URBAN GROWTH WILL BE CONTROLLED. IT IS EXPECTED THAT THE PROCESS OF URBANIZATION WILL THEN TAKE PLACE GRADUALLY OVER TIME AND SPILL OVER TO THE CURRENTLY PROPOSED METRO AREA.

THE GROWTH CENTRES ARE:

MOKOWE CENTRE

UPCOMING ADMINISTRATIVE CAPITAL

SHOULD OFFER HIGH LEVEL SERVICES TO THE COUNTY INCLUDING FINANCIAL SERVICES; RECREATIONAL SERVICES; AND ADMINISTRATIVE SERVICES

HINDI CENTRE

THIS WILL ACT AS THE RELIEF CENTRE FOR MOKOWE.

HIGH LEVEL INDUSTRIAL DRIVEN ECONOMIC ACTIVITIES ARE ANTICIPATED TO HAPPEN HERE AS THIS IS THE 'LAPSSET TOWN'

BARGONI CENTRE

ANTICIPATED TO OFFER SERVICES TO RESIDENTS OF BARGONI; MAJENGO; BODHEI; AND MILIMANI AREAS IF THE ROAD CONDITIONS ARE IMPROVED TO GOOD STANDARDS TO ENHANCE ACCESSIBILITY

MKUNUMBI CENTRE

THIS WILL BE BOOSTED AS AN AGRO-INDUSTRIAL TOWN.

ITS STRATEGIC SIGNIFICANCE IS ENHANCED BY THE AIRPORT WHICH IS PROPOSED IN THE WARD CLOSE TO THE CENTRE.

SEAMLESS INTERACTION OF THE AIRPORT ACTIVITIES AND THE LAMU PORT ACTIVITIES WILL BOOST THE ECONOMIC SIGNIFICANCE OF THE CENTRE TREMENDOUSLY

LAMU COUNTY GOVERNMENT CURP WWF

KIONGWE 'BAWAYA' LAKE KENYATTA WATER CATCHMENT ACTION AREA PLAN

This Action Area Plan becomes very important as a specific product for this CSP to emphasize on the conservation needs of the water catchment reserve area that is now highly endangered as a result of unmitigated human activities around the catchment systems. This includes the rampant farming activities happening on the 'Bawaya' sand dunes and the uncontrolled farming and pastoralism activities around Lake Kenyatta ecosystem which recently have been reported to be drying up. This Action Plan therefore details out some of the land use guidelines that the County Government, together with the National Government dockets like the National Land Commission, Survey of Kenya, and private institutions like the WWF may put in place to salvage and save the water catchment system.

Other factors leading to the same include:

- Degradation and encroachment on the water catchment system & wetlands in Pangani, Mukuru river, river banks, and the Lake itself
- Over abstraction of water for both human (consumption and irrigation Agriculture) and animal use
- Climate Change & Deforestation
- Lack of awareness on the part of the people on the effects of their actions on the water catchment system
- Poor Governance & Institutional framework
- Overgrazing
- Poor water infrastructure development in the area and the County as a whole
- Increased population around the catchment system
- Uncontrolled sand harvesting around the catchment system

The main objective of this Action Plan therefore is to protect and conserve the stretch of the water catchment system to ensure sustainable source of fresh water supply and sustained livelihoods to the more than 50,000 residents of the County who depend on the lake and the catchment system in general.

Some of the immediate actions advanced by this Plan will be action oriented and multi-institutional support required. They include:

- Revocation of titles that fall within the 100-meter radius proposed by this CSP from the highest watermark of any water point, wetland channels, swamp, lake, sand dune or any other highly ecologically sensitive ecosystem highlighted in this Plan
- Preparation of Resettlement Action Plans (RAPs) for the legally affected people within the demarcated buffer zones
- Survey and legally protect wetlands like Pangani, Majiglass, Witho, Lake Amu and Lake Kenyatta through gazettement.
- Enhance public education to intensify awareness on the proposed actions and to increase community participation as well as compliance to agreed restrictions.
- Conduct underground water survey to establish the actual level of extraction of water resource as well as the demand so as to inform development of a water allocation plan. The growing population requires equitable allocation and distribution of water. Therefore, an assessment of water resources; both surface water and groundwater to establish the potential of the entire catchment area.
- Updating of the Lake Kenyatta Sub Catchment Management Plan and subsequent implementation of the same to start as soon as possible. There should be political will and support. The rehabilitation efforts should not be politicized but rather upheld for the greater public good.
- Enactment of laws and land policies regulating the sinking of shallow wells to mitigate on the over abstraction of water as well as ensuring sustained water quality for the users
- Regulation of sand harvesting activities around the catchment system
- Routine monitoring of shallow wells and other water sources with a view to enforcing pollution control measures. The public should be educated to accept and own such regulations.
- Promote diversification of water harvesting techniques including the tapping of rain water for storage
- Enhancement of public awareness programmes on conservation and rehabilitation of riparian land and the catchment areas. This will enhance acceptance and cooperation of communities in rehabilitation efforts.
- Enhance adoption of new farming methods to reduce water wastage through overhead irrigation
- Alternative sources of energy like biogas, LPG, solar and Jatropha need to be explored to reduce pressure on the use of charcoal and firewood.

Overall, the following action Plan is being advanced by this CSP as a measure to some of the physical actions proposed. The Plan proposes a buffer of 100 meters from the highest water mark of all the wetland ecosystems deemed as part of the catchment system. Within the buffer zone, there are properties that fall within the zone to which the Plan propose for their revocation. Most of these properties were not legally allocated and hence their instant revocation is being advanced. The County Government however has the mandate to identify the land parcels that were legally acquired and consequently prepare RAPs for them. Additionally, the Action Plan proposes an outer buffer area with a setback of about 500 meters which the County Government may wish to adopt to enhance the long-term sustainability of the lake. Consequently, in the event that they wish to adopt the 500-meter buffer zone, then they will be required to prepare a RAP for all the PAP falling within that buffer area (area shaded in red in the second map below).

Reference is made to the map below:

KIONGWE 'BAWAYA' L. KENYATTA WATER CATCHMENT ACTION AREA PLAN

LAMU COUNTY SPATIAL PLAN (2016-2026)

LEGEND

- Centre
- County Boundary
- Ward Boundary
- Line of Highest Water Mark
- 50m Inner Buffer
- 500m Outer Buffer
- Roads
- River Main
- Plots
- Existing Wind Power
- Mangrove
- Sand Dune
- Indian Ocean

1:30,000

0 0.25 0.5 1 1.5 2 Km

THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES

Datum:

Projected Coordinate System:Arc_1960_UTM_Zone_37S
Projection:Transverse_Mercator
False_Easting:500000.00000000
False_Northing:10000000.00000000
Central_Meridian:39.00000000
Scale_Factor:0.99960000
Latitude_Of_Origin:0.00000000
Linear Unit: Meter

Geographic Coordinate System:GCS_Arc_1960
Datum: D_Arc_1960
Prime Meridian: Greenwich
Angular Unit: Degree

Prepared By:

Centre for Urban & Regional Planning
14th Floor, Bruce House, Standard Street,
P.O Box 2908-00200 G.P.O, Nairobi,
Tel +254 (0) 20 2244453
Email: info@curp.or.ke

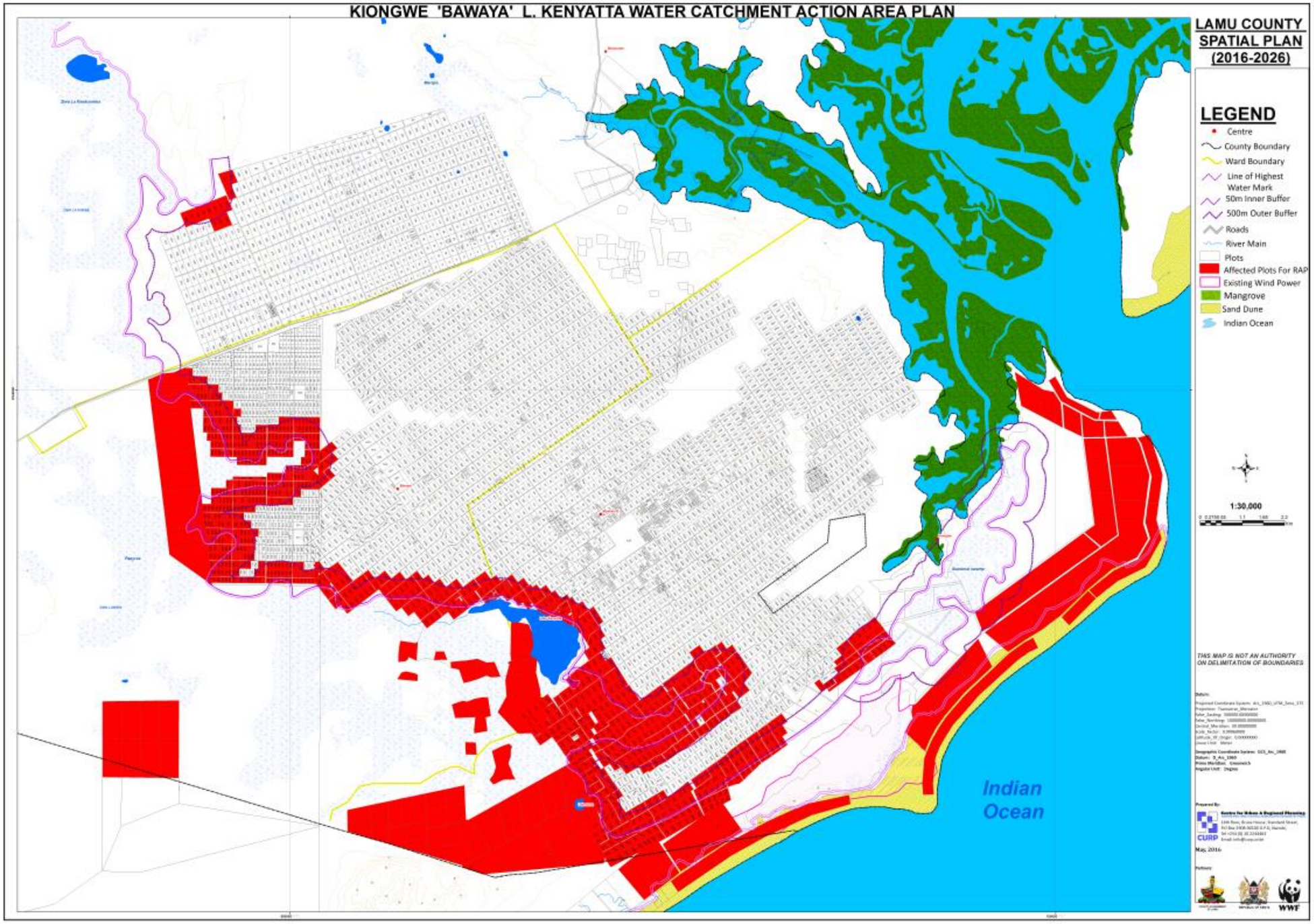
May, 2016

Partners:

REPUBLIC OF KENYA

WWF

Indian Ocean


KIONGWE 'BAWAYA' L. KENYATTA WATER CATCHMENT ACTION AREA PLAN
LAMU COUNTY SPATIAL PLAN (2016-2026)
LEGEND
Centre
County Boundary
Ward Boundary
Line of Highest Water Mark
50m Inner Buffer
500m Outer Buffer
Roads
River Main
Plots
Affected Plots For RAP
Existing Wind Power
Mangrove
Sand Dune
Indian Ocean
1:30,000
THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES
May, 2016
Indian Ocean

REFERENCES

1. CGL, 2013: First County Integrated Development Plan 2013-2017: Lamu County. County Government of Lamu, Lamu, Kenya.
2. Church, J. E. And Obura, D. O., 2004: Management Recommendations for The Kiunga Marine National Reserve, Based on Coral Reef and Fisheries Catch Surveys, 1998–2003. CORDIO/WWF KMNR, Lamu, Kenya, 1-57
3. Daniels M., Skillman B., A guide for Local Land Use Planning for Agricultural Operations.
4. Duineveld, G. C. A., P. A. W. J. De Wilde, E. M. Berghuis, A. Kok, T. Tahey, and J. Kromkamp. 1997: Benthic Respiration and Standing Stock on Two Contrasting Continental Margins in The Western Indian Ocean: The Yemen-Somali Upwelling Region and The Margin Off Kenya. Deep-Sea Research II 44: 1293-1317.
5. ERC, 2011: STUDY PERIOD 2011 – 2031: Updated Least Cost Power Development Plan. Energy Regulatory Commission, Nairoi, Kenya
6. Ghaidan U.,1976: Lamu, a study in Conservation, 1976, Nairobi.
7. Gok, 1985: Lamu District Environmental Assessment Report. National Environment Secretariat, Ministry of Environment and Natural Resources, Nairobi, Kenya.
8. Gok, 2013: Integrated Coastal Zone Management (Iczm) Policy: Draft. Ministry of Environment, Water and Natural Resources, Nairobi, Kenya
9. Jame A., 2009: Creating the Community you want, Municipal Options for Land Use Control, Albany, Newyork.
10. KFS, 2015: Witu Forest Ecosystem Management Plan 2015-2025. Kenya Forest Service, Nairobi, Kenya
11. Kuria, Z N., 2008: Groundwater Resources Assessment of Lamu Island along Coastal Kenya. 2008, Nairobi, Kenya.
12. KWS, 2013: Kiunga-Boni-Dodori Conservation Area Management Plan, 2013-2023. Kenya Wildlife Service, Nairobi, Kenya
13. Ministry of Environment and Mineral Resources, 2012: Master Plan for the Conservation and Sustainable Management of Water Catchment areas in Kenya, Nairobi, Kenya