2015

FISHERIES INVESTMENT PLAN 2015-2020
(Poverty-Environment Initiative)

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ABBREVIATIONS AND ACRONYMS

ASDP	Agricultural Sector Development Program
BMU	Beach Management Unit
CBO	Community-Based Organization
CC	Climate Change
CSO	Civil Society Organization
DED	District Executive Director
EFD	Environmental Defense Fund
EIA	Environmental Impact Assessment
FBO	Faith-Based Organization
IRR	Internal Rate of Return
M&E	Monitoring and Evaluation (M&E)
MAF	Millennium Development Goals Acceleration Framework
MDGs	Millennium Development Goals
MTR	Mid-Term Review
NEMC	National Environmental Management Council
NGO	Non-governmental Organization
NPV	Net Present Value
PMMP	Poverty Monitoring Master Plan
PMO-RALG	Prime Minister's Office Regional Administration and Local Government
POPC	President's Office Planning Commission
PPP	Public-Private Partnership
SME	Small and Medium Enterprises
UN	United Nations
UNDP	United Nations Development Programme

RDS	Routine Data System
RoI	Return on Investments
VEO	Village Executive Officer
VFDC	Village Fisheries Development Committee (VFDC)
WEO	Ward Executive Officer
WFDC	Ward Fisheries Development Committee

PREFACE

Bunda District is endowed with abundant marine and land resources for Fishery development. The utilization of these resources i.e. off-shore and in-shore fish farming however has not been to their potential maximum and has not been used with an explicit focus on poverty reduction. The level of investments in fisheries development has been equally low and has not been conceptualized through a Poverty-Environment-Gender nexus approach. It is with these realities in mind that this Fisheries Investment Plan for Bunda District is developed with the main objective of attracting investments in fisheries development guided by Poverty-Environment Initiative (PEI).

This Plan has been drawn in order to meet the aspirations of the Bunda District, in particular achieving twin objectives of both reducing poverty through employment and high incomes and environment conservation, to ensure that highest priorities that guide investment decisions are strategic and maximize on the entire value chain of fishery including environment sustainability. It is thus an Integrated Plan which ensures that investments and environment sustainability are both integrated and targeted.

Crafting of this Investment Plan was informed by best practices within the country, the African continent and beyond. Within Bunda District a wide and rich consultative process ensured that the interests of all stakeholders were included in order to enhance ownership.The Investment Plan in particular outlines the investment decisions detailing how projects will be designed, taking into consideration the guiding principles. As well the Plan points out the investment details in the District.

To complement the above, both an institutional framework and monitoring and evaluation have been outlined in order to enhance resource mobilization and implementation effectiveness.

It is my sincere hope that this Fisheries Investment Plan will not only provide guide to sustainable investment decisions but also serve as an important vehicle for socio-economic transformation. It is thus both an honour and privilege for me to present this Fisheries Investment Plan for Bunda.

Signed

Joshua Mirumbe

DC, Bunda District

Date

GLOSSARY OF TERMS

Bankable Project (also known as a Fundable Project): project or proposal that has sufficient collateral, future cash-flows, and highprobability of success, thus it is acceptable by institutional lenders for financing. Such a project details the resource mobilization plan for overall Investment Plan; marketing strategy for the Investment Plan, Investors profile, strategy on how the governance of the implementation of the Investment Plan is going to be organised, and Monitoring and Evaluation Plan.

Capital: All cash contribution, plant, machinery, equipment, buildings, spare parts and other business assets other than goodwill which are not consumed in the regular operations of the business and have a life of more than twelve months (Investment Act 1997).

Impact: A measure of the extent to which the intervention made a difference to the problem situation that was intended to be solved.

Incentives: Tax reliefs and concessional tax rates which may be accessed by an investor under the Income Tax Act, 1973, the Customs Tariff Act, 1976, the Sales Tax Act, 1976 and any other law for the time being in force, and includes additional benefits that may be accessed by an investor under sections 19 and 20.

Internal rate of return (**IRR**): is the interest rate that produces an NPV of 0 for a cash flow stream. Financiers view an investment with an IRR above cost of capital as a net gain. When proposals compete for funds, the higher IRR is preferred.

Investment: The creation or acquisition of new business assets and includes expansion, restructuring or rehabilitation of an existing business enterprise (Investment Act 1997).

Liquidity:A relative term to describe the speed at which an assetor assets can be converted into cash (liquidated) and vice versa.

Local investor: A natural person who is a citizen of Tanzania; a Company incorporated under the laws of Tanzania in which the majority of the shares are held by a person who is a citizen of Tanzania, or a partnership in which the partnership controlling interest is owned by a person who is a citizen of Tanzania.

Monitoring: Is the process of systematic collection and analysis of information as a project progresses. Monitoring is a continuing function that uses systematic collection of data on specific indicators to provide management and key stakeholders of an ongoing intervention with indications of the extent of achievement of objectives and progress.

Opportunity cost: The opportunities foregone when one decision is taken rather than the other. This basic economic concept considers the value of the benefits that could have been obtained had the inputs been used for another purpose.

Public Private Partnership: A contractual agreement between a public agency and a private sector entity. Through this agreement, the skills and assets of each are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares the risks and rewards realized in the delivery of the service and/or facility.

Profit:A financial gain, especially the difference between theamount earned and the amount spent in buying, operating,or producing something.

Projectan undertaking that involves use of resourcesand selected after decision to choose spending resources on the project rather than alternative way/s of usingsuch resources.

Project appraisal:is a process of assessing a project with a view to informing a rational choice and reach a decision whether to commit resources in the project or not.

Return on Investments (RoI): a measure of the extent to which resources are used in an efficient manner through comparing a magnitude and timing of investment gains directly with the magnitude and timing of investment costs.

Risk: the possibility of financial loss (*NODE*); the chance thatan investment's actual return will be different than expected.

I: INTRODUCTION AND BACKGROUND

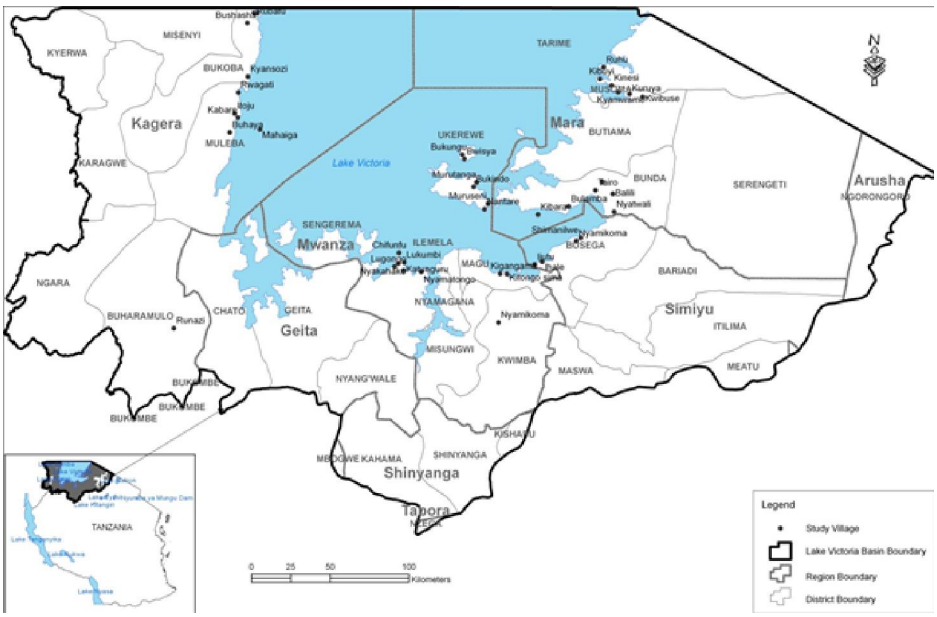
1.1 Introduction

This document articulates the resolve of Bunda District Council to promote investments in Fisheries sub sector for the period 2015-2020. The Fisheries Investment Plan is designed to articulate and operationalize investment decisions in Fisheries sub sector. It responds to the need for an Investment Plan and answers critical questions such as source of funds, what to invest in and how to take care of the environment. For more than a decade, the residents of Bunda District has been experience an acute shortage of fish supply because of overfishing and degradation of Lake Victoria eco-system – this needs to be reversed and contained.

1.2 Background

Bunda district is located in the North Eastern part of Tanzania and is one of the six districts of Mara region. Bunda has all the strategic locational advantages: close proximity to Kenya, the largest economy in East Africa; bordering the world heritage and famous Serengeti National park, bolstering with Lake Victoria waters, the second largest inland lake in the world. (Figure 1).

Figure 1.1: Location of Bunda District



The District has an area of about 3,088Km², of which water occupies an area of 200km² and land is 2,888 km². For the land resources, about 480km² is within the Serengeti national park and the rest is agricultural land, grazing land, settlements and forests. The population size in Bunda District is estimated at 335,061, of which 150,461 or 48.4% and 172,820 or 51.6% are male and female respectively (NBS, 2012).

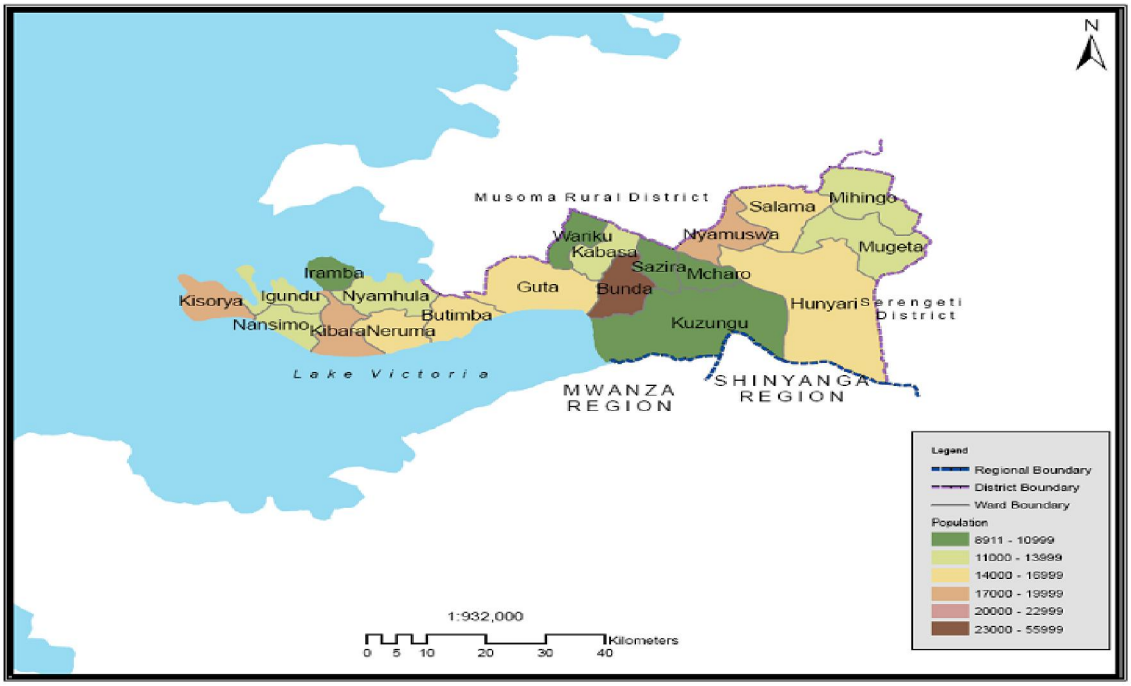
The economy of the Bunda district is mainly dependent on three sectors, agriculture, fishery and livestock. Other important sectors for the economy are business and tourism in small scale. Agriculture is one of the economic bases and provides food, employment and income. Agriculture, livestock and fisheries employ more than 81% of the total residents.

Results of Household Budget Survey 2000/2001 (URT 2002) revealed that Bunda District ranked 119/199 among the then Districts of Mainland Tanzania in terms of Basic Needs Poverty, with a poverty incidence of 67.7 per cent compared to the national average of 36 per cent (URT 2005a; Mbelle and Manyama 2015). This revelation led to a number of interventions being designed in order to reverse the situation against (URT and UNDP, 2012) against the paradox of seemingly abundant resources in the District.

Among the interventions identified for improving livelihoods in the District is development of Fishery resources (Bunda District Council 2014; ESRF 2015a and b). Fishery activities in Bunda district had traditionally taken place in Lake Victoria and rivers traversing the District. Waters of Lake Victoria, rivers and others cover about 200 square kilometers - in the recent past, aquaculture has gained importance mainly due to declining fish catch from Lake Victoria (Mirumbe 2015b). See also Chapter two.

1.3 Objective

The main objective of this Plan is to guide and provide critical information on existing and potential areas, in Fishery development in Bunda District – location of villages – Kisorya, Nansimo, Igundu, Iramba, Kibara, Bulamba, Guta, Nyatwali and Serengeti. A long lake-shore is readily available for fishery investment and environment conservation is critical.



1.4Lay out

The Fisheries Investment Plan is presented in eight Chapters. Following the introductory Chapter, is Chapter two which presents the context within which the Investment Plan is drawn. Chapter threedocuments the methodology and approach, followed by Chapter four which deals with the investment decisions. The detailed investment opportunities are described in Chapter five. This is followed by Institutional Framework for Implementation as Chapter six and Monitoring and Evaluation as Chapter seven. Concluding remarks given in Chapter eight, crown the Plan.

II: CONTEXT

2.0 Overview

This Chapterpresents the context within which Bunda Fisheries Investment Plan is drawn. Four sections form the Chapter.

2.1 Global context

At the global arena two influencing factors need to be taken account of: the Millennium Development Goals (MDGs) and Climate Change (CC). The MDGs, unveiled in 2000 (UN 2000), brought Poverty to the center stage of policy debate. MDG 1 "halving extreme poverty and hunger", is addressed by countries in a number of ways with Fishery development being promoted world- wide as a source of improving livelihoods in terms of both income and nutrition.

On the other hand, Climate Change has exerted formidable challenges on management of environmental resources including marine resources. Holmes *et al*(2014) point out that Fisheries provide an example of how food systems we can be successfully reshapedand made more productive whileenhancing their health and resilience.Further, that abundant and healthy fishstocks support greater social and economic benefits for society. One key constraint to recovering fisheries at the pace and scalerequired has been a lack of capital to finance the transition.

Countries in Asia, namely: China, Vietnam, Philippines and Thailand have invested significantly in aquaculture, which include: fish farming through fish cages in-shore and fish ponds – off shore. In Africa, countries like Nigeria and Uganda have been at the fore front.

2.2 National

In Tanzania poverty issues have been articulated in Tanzania Development Vision 2025 (URT 1999) and the National Strategy for Growth and Reduction of Poverty (NSGRP/MKUKUTA; URT 2005b and 2010). These frameworks target both high and sustainable growth and substantive poverty reduction. The *Tanzania Long Term Perspective Plan*in particular articulates the growth path towards achieving TDV 2025 goals (URT 2011).Fishery development has been pointed out in these frameworks as a source of both income and nutrition.

The *National Fisheries Policy 1997* (URT 1977) and *The Fisheries Regulations*, 2009 (URT 2009a) have been guiding development in this sub sector, though not comprehensively (see Box 2.1).

In addition is the Fisheries Sector Development Programme with the overall goal of developing a sustainable, competitive and moreefficient fisheries and aquaculture industry that contributes to the improvement ofthe livelihoods of stakeholders and the national economy while preserving theenvironment (URT 2010).

In the recent past concerns have been raised on dwindling fish resources attributed to many factors including climate change (leading to drying up of rivers which are important habitats for fish); pollution of water bodies, and unsustainable fishing practices (Juhudi Development, (2012;URT 2013).

It is against the threat to Fishery resources that investment in sustainable fishing practices is being promoted (URT 2009b) within the overall The National Investment Promotion Policy (URT 1966) and its Regulations (URT 1997). Some aquaculture activities have been initiated in districts of Igunga, Bukoba rural, Morogoro, Iringa, Temeke, etc.

Box 2.1: National Fisheries Policy 1997 Under Review to boost sector

The National Fisheries Sector Policy and Strategy are being reviewed to accommodate, among others, strategies on the development and promotion of aquaculture sub-sector. Another reason is to revamp the sector and boost its contribution in the economy. Fish farmers should strive to embrace new technologies governing the sector and mobilize resources for serious and active engagement and investment. Farmers are challenged to form groups for easy access of loans and other financial boosts. Getting financial services would be made simpler if farmers would indulge in commercial farming. Ministry has selected a number of centers countrywide that will be responsible for preparation and production of seeds, inputs and provision of extension services. As aquaculture gains momentum environmental certification (Environmental Impact Assessment – EIA- certification from National Environmental Management Council – NEMC - will be necessary.

Source: Ministry of Livestock and Fisheries Development (quoted in the Daily News January 9, 2015)

2.3 Bunda situation

The overall goal for the District fisheries policy is to promote fish sustainable harvesting, development and sustainable management of the fisheries resources (eco-system) for the benefits of presents and future generation. Other district priorities includes: putting into efficient use of available resources in order to increase fish production so as to improve fish availability as well as contribute to the growth economy, to enhance knowledge of the fisheries sector, improve fisheries product utilization and their marketability; improve availability, accessibility and exchange of fisheries information

and effective utilization of the exclusive Economic Zone.Both female and male participate, however, in fish processing and marketing women are the key actors and involved more than men.

Improvement of Fish farming i.e. Fish pond and Hatcheries, Seasonal and closed area i.e. Speke and Bowman gulf, Co-management with establishment of Beach Management Units (BMU's) at the fish landing sites away to protect and conserve fisheries resources in lake Victoria environment, Extension services, Control of water hyacinth, Control illegal fishing through MCS (Monitoring Control and Surveillance), Improvement of fish landing sites/ (fish receiving station).

Fishing is the third major economic activity after agriculture and livestock. Both large scale and small scale fishing are practiced (ESRF 2015a). The main fish species in Bunda District are Nile perch, Sardine and Tilapia.

Bunda District is facing stress in fishery resources, being manifested by reduced catch in Lake Victoria with consequent decline in revenue to District Council (Table 2.1). In addition fish habitats in rivers are equally threatened. All factors have come into play to threaten Fishery resources (environmental degradation – deforestation; Lake Victoria pollution, unsustainable fishing practices – fishing gear, use of poison, etc.).Illegal fishing is widely practiced at Kasuguti village (with a population of 7,085 inhabitants) (ESRF 2015a).

Population pressure is another factor that has caused stress on fishery resources due to increased number of fisherfolk (estimated at 7,014 in 2014) and fishing effort as well as increased demand for fish. Between 2002 and 2012 population of Bunda District increased by 2.6 per cent to 335,061 inhabitants (females 172,820;males 162,241) with a population density of 109per square meter (URT 2013), far above the national average.By 2014 the District population was estimated at 352,711 inhabitants(females 181,923; males 170,787) giving a population density of114people per square kilometer.

Table 2.1 Lake Victoria Fish Catch and Value 2008/2009-2013/2014

Year	Catch (Kilogrammes	Value (Tshs "000")
2008/2009	7,856,000	12,569,000
2009/2010	6,452,000	12,426,552
2010/2011	5,038,085	14,746,474.795
2011/2012	1,068,334	2,592,846.618
2012/2013	1,072,408	4,474,086.176
2013/2014	1,188,048	2,459,269.6

Source: Mirumbe 2015 (a)

In an effort to curb unsustainable fishing practices, Beach Management Units (BMUs) were established in the District. By 2014 there were 42 BMUs operating in 47 landing

sites compared to 34 BMUs and 30 landing sites in 2005 (Mirumbe 2015b). These Units are supported by two fiber glassspeed boats. As a result of stepped up patrols incidences of unsustainable fishing methods declined considerably mainly out of confiscating and subsequently torching banned fishing gear such as drag nets (1, 298; sardine nets under five inch mesh (12,100) and small mesh fish nets (12,100).

A total of 142 suspects were arraigned in the courts of law with 20 cases involving 52 suspects concluding in jail terms ranging between six months and three years. Nine cases involving 14 suspects had not yet been concluded by 2014 while 14 other cases involving 76 suspects concluded in suspects being set free for lack of incriminating evidence (Bunda District Fisheries Department).

Bunda District has responded to dwindling fish catch from Lake Victoria through promoting fish farming. Individuals and groups of individuals have responded positively by constructing fish ponds in areas such as Butakale, Kibara,Kisangwa,Kung'ombe and Mugeta.Cage fishing has been a new innovation. See Chapter five.

2.4 District Investments

The Central government has invested in extension services while the Local Government has invested two patrol boats for monitoring illegal fishing activities in Lake Victoria. These are both forms of Public Private Partnership in which the Government invests in service delivery. See also Chapter four.

Bunda District Council MTEF 2014/2015-2016-2017 does not show planned targets for fishery investments. In fact despite the potential of fishery sector, there is no significant investment to develop and sustain it. Under budget code 505D reference is only made to improving district fisheries office working environment by 80 per cent and increasing revenue collection by 75 per cent by June 2015 and budget of Tanzanian Shillings 43.9 million (page 107).

Fish ponds established at: Kangetutya-Akili Mali nambamoja, Kisangwa, Maliwanda, Nyatwali, Mugeta, Kibara, Serengeti- Green triangle, Ligamba- Kilimo naufugaji Kung'ombe and Miembesita. The established Beaches Management Units (BMUs) at community level, act as Coordination Bridge between the district and village in implementation of fisheries initiatives.There 42 BMU's which are established in all landing sites in Bunda District, they need training on financial management, project management and entrepreneurship which lead on establishment of various activities/projects for achieving big result while conserving environment. Technologies such as "cage" fishing should also be introduced.

Current investments in fishing gear

Table 2.2 shows fishing gear by type. Though there are no prescribed standards, overcrowding is evident given the area of fishing waters. Given the total area covered by Lake Victoria waters (89 square kilometers) it means that in the case of boats, for example, about 19 boats compete in one square kilometer.

Table 2.2 Type and Number of Fishing Gear in Bunda District, 2014

Type	Number
Vessels (fishing boats)	1,700
Gillnets	632
Hooks	294
Sardines nets	260

Source: Bunda District Fisheries Department

III: METHODOLOGY AND APPROACH

3.0 Preamble

This section describes the approach that was used in arriving at the Fisheries Investment Plan for Bunda District. This is outlined in two sections: review of literature and consultations.

3.1 Review of Literature

Crafting of the Fisheries Investment Plan for Bunda District was well informed by wealth of literary works at three levels.

At the level of Bunda District, information was obtained from many official publications such as Medium Term Expenditure Framework Plan and BudgetDistrict MDGR, DistrictBrochure,District Reports on Implementation of Programmes, etc. These documents delineated the priority of fisheries. Closely related are reports of various studies on Bunda. These included Baseline Studies, Assessment studies and Reviews of particular interventions (see References section). Most of these reports had engaged stakeholders in consultations. In all reports priority on fisheries was pointed out unambiguously.

The second level of literature covered national Policy Frameworks including Vision, Plans and Poverty Reduction strategies. The objective of such review was to delineate the country's priorities and thus enable strategically aligning Bunda Fishery Investment Plan with these national priorities. In particular, Population and Housing Census Report gave the situation of Bunda District.

At sector level Policies and programmes of Fishery sector were also reviewed in order to inform the critical issues in this sector and how these can be fitted in Bunda's Fishery Investment Plan. Such documents included Fisheries Development Policy, Fisheries Regulations and Guidelines for Fish farming and Fishing. These guided the Chapters on Investment Decisions and Investment Details in Bunda Fisheries Development Plan. Fisheries Annual Statistics Reports greatly informed Chapter two on Context.

Independent assessment reports on risks in Fishery sector were also consulted.

International best practices formed the third level of literature review. This was particularly useful in informing investment decisions given good success stories elsewhere, both within the African continent and beyond. Such literary works included "Financial services for small and medium-scale aquaculture and fisheries producers" and "Towards investment in sustainable fisheries: A framework for financing the transition".

3.2 Consultation process

Deep and wide consultative processes were held with various stakeholders at District, Division, and Ward and Village levels. In order to incorporate views of key stakeholders both fisher folk and current investors were also consulted. Their views informed crafting of chapters on investment decisions and investment details. Resolutions reached at the District's Economic Forum held on 20th February 2015 consolidated the consultative process.

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IV: INVESTMENT DECISIONS

4.0 Overview

This Chapter presents details of how a mix of investment decision is reached with the objective of ensuring soundness of investments made. Six sections form the Chapter.

4.1 Investment objective and guidance

The main purpose of investing is to achieve income growth that has significant impact on poverty reduction and conserving the environment. In fisheries investment, it is possible to apply market-based solutions because upfront costs of transitionare offset by the profits that are generated through more efficientand productive fisheries with higher harvests and lower costs (Holmes *et al*, 2014).It is in this regard that selection of fishery projects has to be done with utmost technical expertise in order to meet this objectiveand increasefisheries value.

Consideration of investment has to take the broader context of operating environment including policy and laws as well as markets. As such a related objective of investment is to unlock greater social, economic and environmental value in fisheries. Investment need also to be directed in specific areas of capacity development such as management of environment and eco-system for fishery, which include water and soil monitoring, disease management and ensuring that feeds of high quality are used.

4.2 Increased value in fisheries

Best practices in aquaculture investmentindicate three important enablersof sustainable and profitable fisheries that, together,provide the basis for increased value. These are:

a) Secure tenure: this serves to align incentives in such a way that they are able to empower and sustain the fishing industry;

b) Sustainable harvests:this relates to how much fish can be sustainably harvested taken from the water resources at present and in future;

c) Robust monitoring and enforcementof laws and regulations**.** This ensures that fishers comply with sustainable management and eliminate illegal activities that threaten long-term viabilityof their very investments.

Investments in fishery (aquaculture) must thus align themselves to these enablers. In this regard projects have to be channeled to three areas:

- Improving fish stock health: this ensures abundance of fish that can sustain high yields in the long term. In addition it reduces the cost of fishing effort (finding and catching fish);

- Increasing operational efficiency: this ensures improvement of profit marginsalong the entiresupply chain, and thus returns;

- Increasingmarket value: given the perishable nature of fish in the very short run market considerations are important. Thus prompt access to markets such as through use of ICT will ensure maximum returns. In addition, certification and branding is equally important in meeting both sanitary requirements and sophisticated market conditions.

4.3 Project development consideration

Project developers do desire to attract appropriate investment. There are requirements that have to be met for this to happen. The requirements include the following:

- ✓ Evidence of legal existence "investment entity": meeting requirements of law, business registration, etc.;
- ✓ Presentation of a Business Plan: this has, at minimum to include contextual analysis of the project, bio-economicdata, financing plan;
- ✓ Clear mechanism of apportioning profits/losses;
- ✓ Risk management(risk identification,articulation and mitigation plan).

Assessment of risks in Fisheries projects

Fishery projects face a number of risks at all levels of decision making.Risks cannot be avoided and in fact the higher the risk, the higher the returns. The scale of risk has to be estimated (large or small) and evaluated (how it matters to the project) and a contingent plan to minimise the risk of project outlined.If these evaluations are not performed a project may fail completely or will deliver sub-optimally (major gap between what was expected and what is delivered).

The following are common risks in fishery:

1. Global – international environment dictates how the fishery industry is regulated such as through banning catch of certain kinds of species, fishing moratorium, market requirements such as health standards, and sometimes country of origin (embargos, etc.).

2. Country risk: change of policy, political change (buy-in/disengagement), transparency and rule of law; macroeconomic conditions such as cost of credit,inflation, exchange rate fluctuations, etc.;
3. Market risk: price fluctuations, competition, changes in consumer behavior;
4. Environmental risk: environmentally unfriendly human activities in close proximity to project sites; fluctuations in fish stocks; natural disasters and impacts from climate change;
5. Project execution risk: inadequate management and supervision; low skills and expertise for managing fishery project, insufficient information, stakeholder dis-engagement (communities, fishers).

Aproject developer has to detail these risks and present a credible mitigation plan in case of their occurrence.

4.4Investment strategies and sources of capital

Investment strategies need to be aligned with sourcesof capital. The spectrum of possibilities and combinations is indeed very broad. With varying target returns, type of investmentand target terms. The spectrum of actors is equally broad and includes central and local governments, fishing industry, private sector, non-governmental organizations (NGOs).

Investment is always upfront. As such there are many important questions that have to be raised such as how to finance and who bears the burden as well as recovery of such investments.

Kleith et al Kleih *et al* (2012) made case studies of six countries Egypt, Ghana, Maldives, South Africa, Tanzania and Vietnam to assess sources of finance for small and medium scale aquaculture and fisheries enterprises, Mari-culture included. The authors examined the traditional banking sector and microfinance as well as the informal lending sector. In Tanzania the focus was on Nile perch capture fisheries and aquaculture.

The main finding of the comparative study is that traditional financial instruments did not meet the financial needs of small and medium-scale enterprises (SMEs). The authors thus recommend development of innovative financial models for SMEs. A combination of investment funds with business development funds is suggested.

In light of these findings Bunda District Fisheries Investment Plan has to emphasize sources of innovative funds and mobilize resources. Generally, the financial infrastructure in Bunda district is very limited i.e. the coverage and type of financial

services offered leave out the majority of the population. For example, since independence up to 2012, the only bank that operated in Bunda is NMB. In 2013, CRDB has come in, the Twiga Bancorp opened a sub-branch in the district, but these new banks are not well known to many of the people in Bunda. In addition, there are very few active and operational MFIs, which is an indication that people (investors) in Bunda are still heavily suffering from poverty related to financial exclusion.

It is recommended that a wake-up call be made to the members of these MFIs and their leaders through awareness of the available financial opportunities in both commercial banks and other MFIs (SACCOs/VICOBA). Second, promotion of the current financial services available and offered to customers in the district is critical and this can be done through local radios (Mazingira radio).

With improvement in financial accessibility and business environment over time, consideration of investment should focus in the three key areas: **improving fish stock health**, **increasing operational efficiency** and **increasingmarket value.**

What follows is an identification of investment strategies cum sources of capital.

a) Equity investment: key expectation is growth in value of the assets purchased;

b) Targeted lending: specific investment vehicles are identified (innovative vehicles);

c) Public-Private Partnerships(PPPs): mainly in financing management of assets, research, monitoringand enforcement, etc.;

d) Seed or anchor equity investments**: capital**is committed to a project at an early stage thus reducingthe financing risk. In addition other investors are encouraged to participate.

4.5 Project appraisal and project selection

Project appraisal is an important tool in investment decision making as it lays the foundation for delivery and evaluation. It is the process of assessing proposals by a developer before resources are committed.A good appraisal justifies spending resources money on a project.

The basic consideration in project selection is economic value which requires alternative chosen to be at least as good or as valuable as the alternatives foregone. Net Present Value is the guiding principle.**FINANCIAL + STAKEHOLDERS BENEFITS = TOTAL ECONOMIC NPV.**

Table 4.1: Financial-Economic Analysis of Project			
	Existing situation WITHOUT project	**Future situation WITH project**	**Impact of Project over present situation**
NPV (Financial Point of View	xx	xx	xx
NPV (Economic Point of View	xx	xx	xx

Source: adapted from literature

Note that assessment uses "with" and "without" in order to isolate the impact of the project. Use of "before" and "after" situations may fail to do this as the impact may have been coincidental or may come from other forces.

There are a number of methods used to evaluate projects. These are detailed in Annex 2.

4.6 Guiding Principles for Investments

Any investment undertaking has to adhere to principles that are upheld by community, country or globally. These principles include the following:

Diversification: this principle advocates diversifying investments in order to spread risk.

E***nvironmental sustainability:*** investments shall observe all environmental considerations in production and conservation of nature.

Ethics: in any investment undertaking ethics have to be upheld (as defined nationally or by community).

Liquidity:this principle requires ensuring that a reasonable liquidity position is maintained for meeting day to day financial obligations, while ensuring secure future liquidity.

Safety:Developers do not invest in high risk projects that do not guarantee safety of the resources committed.

Socio-economicdevelopment:developers shall invest in areas that support social and economic development in a sustainable manner; with gender equity in consideration.

Yield: resources are committed to the highest yield investments (positive return) in order to sustain income for meeting financial needs for the key functions. In principle the rate of inflation provides a benchmark of the yield rates and the rule of thumb is to set yield rates higher than inflation rate in order to protect real earning.

Eligibility of investments:Fisheries investments have to abide by laws of the land. Tanzania Investment Policy 1996, part 4.2.3 prescribes ineligible investments. These are investments producing goods and services restricted on grounds of health; armaments, any type of explosives and investments limited on environmental considerations.

V: INVESTMENT DETAILS

5.0 Overview

This Chapter identifies current investments in fishery and proposes future investments as well. The Chapter is made up of five sections.

Cultivation of Tilapia in cages has been introduced in Bunda, however, what is needed is scaling up and improvement in managing the investments. A study by ESRF (2015a) identified the overall investment avenues in fishery in Bunda District to be costeffective operations and information sharing.

The aim is to produce large quantities of fish on a limited surface area, in facilities less expensive and more manageable manner. The promotion of fish farming investment is intended to ensure increase in fish supply and reduce illegal fishing particularly within and around Lake Victoria.

5.1 Investments in Lake Victoria fishery

The main activities that require further investmentsrelate to appropriate fishing technologies, equipment and facilities. Specifically the avenues are,supporting facilities and services such as boat building, supply and maintenance of fishing gears and equipment, construction of quality landing sites and markets, transport, and cold storage.

5.2 Aquaculture

The main mode of aquaculture is use of ponds and tanks – as per pictures below.

Traditional Fish Pond	Modern Fish Pond
	

Investment in aquaculture has to support integrated fish farming, training in related best practices-e.g. design and construction of quality ponds, production of nutritious and quality fish feed, protection of ponds from birds of prey, prevention and treatment of diseases, water and environmental management as well as waste water treatment (ESRF 2015a).

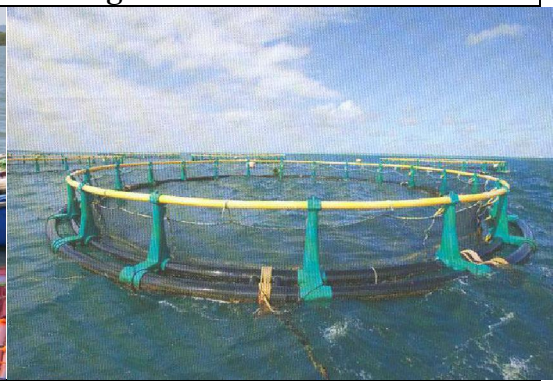
Current practices

Aquaculture is practiced by both farmer groups and private individuals. The scale of investments ranges from one to seven ponds. One pond: Green triangle, UmojawaWatumiajiMaji Kisangwa (UWAMAKI); two ponds: Kilimo na Ufugajigroup,Akilimaligroup, Miembesitagroup. Three ponds: Tumaini group, Kilimo-Kibara group. Seven ponds: Nyang'aranga.

Private investors are active in Butakale, Kibara, Kisangwa, Kung'ombe and Mugeta. The Government has been providing extension services to both fish farmer groups and private investors (another form of PPP).

5.3 Mari-culture

Example of Mari-culture, which involves mainly cage fish farming. Mari-culture is relatively new in practice in Bunda District. So far it is practiced only by JKT Bulamba National Service camp. Experiences of Bulamba can be scaled up at Karukekere and Kasuguti villages and others places. For example, Karukekere is an area that has the necessary conditions such as existence of wind barrier that reduces distress to fish, water depth of more than five meters deep and free from fishing navigation routes. Cage fishing skills are limited at this village and as such efforts are underway to train beneficiaries.To this end, capacity building in cage making is required in order to ensure that the cages are of the required standards.

Fish cage at Bulamba	Fish cage in Mauritius
	

The floating cages are the one preferred to be promoted because the cages does not involve pumping of water. The cages should be placed approximately 400-500 metres away from inshore and 5 metres depths. Stocking densities will depend on water quality (it is good practices to do water testing) on natural fertility of water body. Fish feed to be supplied in the cages depend on fish body weights, and on whether supplements food needed.

Investors will have to consider the type of Cage Culture rearing that is suitable for their investment. The culture methods based on the stocking density, availability of natural food in water and presence of artificial feed supply as follow as:

- Extensive cage culture rearing – stocking rate will be about 20 pcs (fish) per sq. m (no supplemental feeding given).
- Semi intensive cage culture rearing – stocking rate will be about 50 – 80 pcs per sq. m, with supplemental feeds given.
- Intensive cage culture rearing – stocking rate will be about 200-500 pcs per sq. m with supplemental feeds (pellets).

5.4 Investors and partnership strategy

Investments in fishery are undertaken mainly by residents of the District. There are few investors who reside outside the District (mainly Dar es Salaam and Mwanza) who have made such investments also. It is possible to establish partnership among stakeholders i.e. LGA (fishery office), private sector, Micro-Finance Institutions (SELF, Twiga, CRDB, NMB,), UNDP & UNEP, Women & Youth Groups, Training and Consultant Institutions, etc.

Prospective investors can be sourced from other areas outside Bunda, Dar es Salaam and Mwanza within the country. Potential investors are those residing outside Tanzania (true diaspora).

5.5 Future prospects and needs – fish farming (ponds & Cages)

Aquaculture can be practiced in all lowland areas of the District with relative ease. Key investment interventions include:

Investment interventions / activities:
1. Identifying and establishment of areas for placing fish cages
2. Selection of areas suitable and construction of fish ponds
3. Establishment of Hatcheries / procurement of fingerings (Tilapia, Trout and catfish)
4. Investment in fish feeds (pelletizer of pellet) production, storage and distribution
5. Investment in cold rooms facilities / chain
6. Establishment of transport (boats / vehicles) and logistics systems
7. Procurement of soil and water testing equipment
8. Training and imparting skills for staff / employees
9. Procurement and installation of aeration equipment / systems
10. Training and skills for Beach Management Unit (BMU)
11. Training and skills for LGA staff
12. Investment in expansion of markets (radio & TV airtime, websites, etc.)
13. Strengthening market infrastructure to cater for fish (i.e. market places);
14. Security systems (guards, CCTV, etc.)
15. Environmental management (training, skills & demonstration);
16. Selected Youth and women empowered to establish aquaculture business; Community support
17. Other complimentary investment include: Drying technology, horticulture, Poultry, etc.
18. Strengthen the storage capacity of the cold room at 822 JKT Bulamba.
19. Build and establish the 822 JKT Bulamba as a center for training and learning for fish farming, environment management and horticulture in Bunda District.
20. Revise Bunda Website to capture better information on fish farming business and related environmental issues.

VI: INSTITUTIONAL FRAMEWORK

6.0 Overview

Effective implementation of projects requires an institutional framework for overseeing processes. This Chapter presents the framework for implementation of Bunda Fisheries Investment Plan.

6.1 Committee

It is proposed that anInvestment be formed which will establish a Committee. The aim of the Committee should be to improve governance in access to the fishery resources and give due recognition all stakeholders in the fishery industry in Bunda district; to include among others, artisanal fishermen and financial service providers in order to promote the development and diversification of fishing operations and aquaculture.

The Committee can influence investment in fishing and other related activities; as well as develop projects and schemes for the empowerment and welfare of fishers. In this regard the Committee will encourage and provide assistance to prospective investors to set up businesses either as a private concern or in partnership.

6.2Coordination

It is proposed to utilize existing frameworks for coordination; comprising the relevant districtimplementing institutions and other members ofDistrict Management Team. Representatives will be selected by their relevant bodies from fisheries and aqua-farmers associations.

The District Commission will chair meetings.The main responsibilities of the committee will be identifying fisheriesmanagement and development problems at District, ward level, promoting activities/initiativesto develop fisheries management plans as well as preparing fisheries by-laws,mobilizing resources for implementing fisheries activities, coordinating and monitoringfisheries management and development activities in the ward and liaising with thedistrict authorities on fisheries management and development issues.

The members of the Committee will include: Bunda District Commissioner (DC), 822 KJ, DED Bunda, District Fisheries Officers, Representative of the Ministry, Financial Institutions, UNDP/UNEP, Relevant NGOs and representatives from BMUs, Aqua-farmers and processors.

6.3 Monitoring

This will involvecollecting, recording and reporting information concerning all aspects of the performance of investment plan.The main objective of introducing a monitoring system is to provide the necessary tools to keep track of critical variables in relation to to implementation of the investment plan.

Monitoring and Evaluation (M&E) will be coordinatedat the District level by joint team composed of two District Departments: Fisheries and Planning.Monitoring will be done on a regular and continuous basis the main focus being implementation progress and expenditure in the different interventions.

The M&E of projects will be done on a quarterly basis and will involve visits to project sites; to be undertaken jointly by the team set up for this purpose. This team will comprise of district, division, ward and village representatives as well as developers and beneficiaries.Quarterly reports on physical and financial progress as well as impacts will be produced.

6.4 Conclusion

Success of this Investment Plan hinges on a number of factors. First is the cooperation of all stakeholders with a unified goal. The second factor is the extent to which an investment friendly environment will have been created. This requires among other things removal of regulatory barriers to investment at the Council level. Third is extent of enabling environment such as good basic infrastructure and accessibility to financial services.

6.5 Financial requirements

Investment interventions / activities:	**Unit cost Tshs.**	**Total cost for 3 years 2015/16 – 2017/18**
1. Identifying and establishment of areas for placing fish cages	6,000,00	18,000,000
2. Selection of areas suitable and construction of fish ponds	5,000,000	5,000,000
3. Establishment of Hatcheries / procurement of fingerings (Tilapia, Trout and catfish)	30,000,000	45,000,000
4. Investment in fish feeds (pelletizer of pellet) production, storage and distribution	45,000,000	60,000,000
5. Investment in cold rooms facilities / chain	25,000,000	25,000,000
6. Establishment of transport (boats / vehicles) and logistics systems	30,000,000	45,000,000
7. Procurement of soil and water testing equipment	6,000,000	18,000,000
8. Training and imparting skills for staff / employees	8,000,000	24,000,000
9. Procurement and installation of aeration equipment / systems	11,000,000	11,000,000
10. Training and skills for Beach Management Unit (BMU)	4,000,000	12,000,000

11. Training and skills for LGA staff	14,000,000	14,000,000
12. Investment in expansion of markets (radio & TV airtime, websites, etc.)	16,000,000	16,000,000
13. Strengthening market infrastructure to cater for fish (i.e. market places);	25,000,000	25,000,000
14. Security systems (guards, CCTV, etc.)	3,000,000	9,000,000
15. Environmental management (training, skills & demonstration);	7,000,000	21,000,000
16. Selected Youth and women empowered to establish aquaculture business; Community support	16,000,000	32,000,000
17. Other complimentary investment include: Drying technology, horticulture, Poultry, etc.	18,000,000	40,000,000
18. Strengthen the storage capacity of the cold room at 822 JKT Bulamba.	5,000,000	10,000,000
19. Build and establish the 822 JKT Bulamba as a center for training and learning for fish farming, environment management and horticulture in Bunda District.	25,000,000	75,000,000
20. Revise Bunda Website to capture better information on fish farming business and related environmental issues.	3,000,000	9,000,000
TOTAL ESTIMATES:		514,000,000

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Annex 1: Terms of Reference TORs

(a) Identify existing and potential areas for entire value chain of fishery development (Government, community, and private) in Bunda District and the extent of current utilization rate of these areas for fishery development.

(b) Identify and analyse investment opportunities, both current and future in fishery development in Bunda District.

(c) Identify and analyse constraints/challenges that are currently facing fishery sector in Bunda District.

(d) Develop strategies to exploit the identified opportunities and overcome the challenges, clearly defining the roles of each key stakeholder.

(e) Analyse and prioritize the interventions/actions required over 5 years

(f) Analyse the geographical fit of the interventions/actions by specific areas in the District.

(g) Analyse the following requirements in a comprehensive manner:

(i) Financial requirements of such actions or interventions;

(ii) Human resource needs/requirements- capacity needed;

(iii) Infrastructure needs;

(iv) Environmental concerns including plan for mitigation of adverse impacts and their associated costs.

(h) Suggest resource mobilization plan for overall Investment Plan.

(i) Suggest a marketing strategy for the Investment Plan (who should be attracted to take action)

(j) Investors profile (private sector, public sector and other sectors)

(k) Provide how the governance of the implementation of the Investment Plan is going to be organised.

(l) Provide how Monitoring and Evaluation of the Plan will be carried out.

APPENDIX 2REFLECTIONS ON PROJECT APPRAISAL

Cost-Benefit Analysis (CBA) is a method for determining whether the value of a project is greater than the cost of resources it uses. The greater the excess of benefits over costs, the more worthwhile the project

Accept project if:

Benefits (B) > Costs (C)
or
Net Benefits (NB) = B - C > 0.

Net present value = sum of discounted benefits– sum of discounted costs
NPV > 0 (or Σ Cdisc> Σ Bdisc or B-C-ratio> 1), an activity is beneficial overall

Selection criteria

1. Net Present Value: NPV>0 accept project (project with highest NPV is selected)
2. Benefit – Cost Ratio: BCR > 1 : accept project (alternative with highest score selected)
3. Internal Rate of Return – discount rate (at which NPV=0) – present value of benefits equals present value of costs

A project has distinct characteristics in terms of time horizon, scale and coverage (sectoral, multi sectoral), location.

A project has specific activities which together form a cycle

- Project Concept (problem statement, objectives)
- Pre-feasibility screening
- Feasibility (technical, financial, legal etc.)
- Design
- Implementation
- Monitoring and Evaluation
- Decommissioning

Project appraisal is conducted during the "Feasibility" stage – assessing viability of the proposal with the aim of ensuring effective use of resources. Project appraisal is systematic and comprehensive.

Appraisal methods are many, depending on the nature of the project

- ❖ Technology/technical – processes and scale (whether technology works, type – old or new; appropriateness or suitability to the location; existence of (locality) capacity for installing, operating and maintenance)
- ❖ Economic: use of resources
- ❖ Sustainable impacts (long term benefits)
- Contribution to growth (GDP)
- Employment generation
- Balance of payments (exports, imports)
- Government revenue
- Incomes (direct, distribution of income)
- National savings and investments
- National goals (Vision: economic transformation, Self-sufficiency, political and Social order

- ❖ Financial – feasibility of the project to attract financing/investor

  Tools
- Payback period (years)
- Return on Investments (RoI)
- Debt servicing
- Internal Rate of return (IRR)
- Net Present Value (NPV)

- ❖ Environmental – impact on quantity and quality of environmental assets
- Land – mainly soil condition
- Air - stratospheric ozone layer depleting gases
- Marine – ocean, lakes, rivers
- Biodiversity (species and habitat conservation)

Environmental Impact Analysis is mandatory (for projects with significant impacts such as power plants, irrigation schemes, some types of industries) EIA has to be conducted at all stages of the project – before commencement of project, during life span of project and decommissioning or (after) closure of project.

EIASteps:

1. Identification of impact
2. Examining alternatives
3. Evaluating impact (externalities)
4. Development of mitigation measures
5. M&E
6. Audit

A project may be rejected purely on EIA considerations

- **Social – other impacts on society**
- Livelihood of the poor (including poverty alleviation, distributional equity, and access to essential services)
- Human development – education, health, empowerment, gender)
- Management
- Physical infrastructure
- Proximity to markets
- Fiscal regime
- Supply of raw materials
- Supply of infrastructural inputs: power, water

A decision has to be reached whether to finance the project or not

Each method has strengths and weaknesses

Appendix 3: Logical Monitoring and Evaluation (M&E) Framework

Project Name	**Cage Fishing (Kasuguti Village - Kasuguti Ward))**			
	Indicators	**Means of Verification**	**Baseline Data (2014)**	**Targets (2017)**
Overall Goal Is to introduce a Cage Fishing Culture in Kasuguti Fishing Community in Bunda District	(a) Cage fish farmingat Kasuguti Village in Bunda District	Cage Fishing culture introduce	0 (None)	1
Objective 1: To restock the lake from Bunda District and improve both productivity in terms of fish catch and management	(a) Number of Cage Fishing Farms (spots) (b) Increased fish catch (productivity) compared to open lake productivity	(a)Introduction of cage fishing farms (b) Cage fish production or harvesting (c)Reduced marine environmental stress	0 (None) 0 (None) Deterioratin g marine environment	4 Higher fish catch Improved marinenaturalenvironmen t

Project Name	Cage Fishing (Kasuguti Village - Kasuguti Ward))			
	Indicators	**Means of Verification**	**Baseline Data (2014)**	**Targets (2017)**
of the natural resources (environment) in Lake Victoria	(a) Improved Management of the natural environment			
Output: Bunda District with a widespread cage fishing culture	(a)Number of Cage Fish Farms	(d) Introduction of cage fishing farms	0 (None)	4
The Activities: Identify cage fish farming project sites; Making of the fish cages; preparation of the cage fish farms (spots for cages); Cage Fish Farming	(a) 4 fish farming sites; (b) Number of fish cages;	Availability and implementation of the following: (a)Fish farming sites; (b) Fish cages;	(a) 0 (b) 0	(a) 4 (b) 80

List of Recommended Projects in Bunda District

Sn	Project Name	Project Site

Sn	Project Name	Project Site
1	Bunda FM Community Radio	Bunda District
2	Mazingira FM Community Radio	Bunda District
3	4 Ward Agricultural Resource Centers (WARCs)	Mgeta, Kisorya, Kibara and Bunda Town
4	Mobile Kilimo Platform: • Agriculture • Forestry • Fishing	Bunda District
5	ICT4RD	Guta, Kibara, and Kisorya
6	Irrigation Scheme (Horticultural Crops)	Serengeti Village (Serengeti Ward)
7	Cage Fishing	Kasuguti Village (Kasuguti Ward);
8	Irrigation agriculture for paddy and horticultural farming	Kiroreli Village (Nyamang'uta Ward)
9	2 Training or Capacity Building Programmes and Awareness Creation. These will include: • Training on development of Bankable Projects • Training on Group formation and group dynamics • Training of the Communities on PEI • Training of Bunda District Council on Resource Mobilization, and Financial management	Kibara and Nyamuswa (e.g. Bankable Projects and Loan Application and management); Bunda Town (Cage Fishing))

Source ESRF 2015(b)