



**ECONOMIC AND SOCIAL RESEARCH
FOUNDATION**

POVERTY AND ENVIRONMENT INITIATIVE (PEI)

**A Study to Assess Institutional Capacity and Mapping of
Best Practices and Development Opportunities in
Sengerema District**



2015

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A Study to Assess Institutional Capacity and Mapping of Best Practices and Development Opportunities in Sengerema District

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Published by:

ECONOMIC AND SOCIAL RESEARCH FOUNDATION

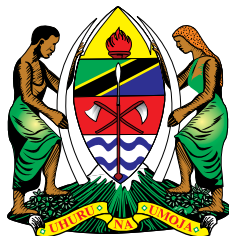


Supported by:

United Nations
Development Programme



Government of the
United Republic of Tanzania



United Nations
Environment Programme



ISBN: 978-9987-770-06-9

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List of Abbreviations

ACT	Agricultural Council of Tanzania
AFSP	Accelerated Food Security Project
AGRA	Alliance for a Green Revolution in Africa
AIRF	Agricultural Innovation Research Foundation
ASDP	Agricultural Sector Development Programme
ASDS	Agricultural Sector Development Strategy
ASLMs	Agricultural Sector Lead Ministries
CBO	Community Based Organization
COMESA	Common Market for Eastern and Southern Africa
CTI	Confederation of Tanzania Industries
DADP	District Agricultural Development Plan
DPG	Development Partners Group
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FY	Fiscal Year
GDP	Gross Domestic Product
GoT	Government of Tanzania
IIDS	Integrated Industrial Development Strategy
LGA	Local Government Area
M&E	Monitoring and Evaluation
MAFC	Ministry of Agriculture, Food Security and Cooperatives
MCDGC	Ministry of Community Development, Gender and Children
MDAs	Ministries, Departments and Agencies
MDGs	Millennium Development Goals
MITM	Ministry of Industry, Trade and Marketing
MIVARF	Marketing, Infrastructure, Value Addition and Rural Finance Programme
MLFD	Ministry of Livestock and Fisheries Development
MLHHSD	Ministry of Lands, Housing and Human Settlement Development
MoW	Ministry of Water
MTEF	Medium Term Expenditure Framework
NAIP	National Agricultural Investment Plan
NBS	National Bureau of Statistics
NEEC	National Economic Empowerment Council
NEMC	National Environment Management Council
NFRA	National Food Reserve Agency
NGO	Non-Governmental Organization

NSGRP	National Strategy for Growth and Reduction of Poverty (MKUKUTA)
PADEP	Participatory Agricultural Empowerment Project
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
P-E	Poverty and Environment (initiatives/interventions)
PEG	Poverty, Environment and Gender (initiatives/interventions)
PEG-CC	Poverty, Environment, Gender and Climate Change (initiatives/interventions)
POPC	President's Office Planning Commission
PPP	Public-Private Partnership
PMO-RALG	Prime Minister's Office – Regional Administration and Local Government
R & D	Research and Development
RDS	Rural Development Strategy
RECs	Regional Economic Communities
TAFSIP	Tanzania Agricultural and Food Security Investment Plan
TACAIDS	Tanzania Commission of Aids
TAMISEMI	Tawala za Mikoa na Serikali za Mitaa (PMO-RALG)
TANESCO	Tanzania Electric Supply Company Limited
TCIIA	Tanzania Chamber of Commerce Industry and Agriculture
TSPF	Tanzania Private Sector Foundation
UNDP	United Nations Development Program
URT	United Republic of Tanzania

Acknowledgement

This report was prepared by a team of experts organized by the Economic and Social Research Foundation (ESRF) under the financial support provided by the United Nations Development Programme (UNDP) Poverty and Environment Initiative programme in collaboration with the President's Office – Planning Commission. The team included Dr. Oswald Mashindano, Dr. Margreth Gratian Bamwenda, Mr. Luwaga Rashid Kizoka, Mr. Hamza Mkai, together with Mrs. Nzuki and Mr. Abdallah Hassan from the Economic and Social Research Foundation (ESRF). Mrs. Nzuki served as a project leader. Special thanks go to ESRF, as secretariat to the team, for coordinating the field work and drafting of the report.

The team also extends its appreciation to the Sengerema District Commissioner, Hon. Karen Yunus and Sengerema Acting District Executive Director, Mr. Vincent Bushaija for their utmost support and guidance during the field work and making available data for the analysis in this report. The team gratefully acknowledges the invaluable support of many Sengerema District Council staff members, who generously offered their insights during the field work and in the preparation of this report. Special thanks are due to the District Agricultural and Livestock Development Officer, Mr. Simon Butera for his guidance and support in site selections and visitations, together with his assistants Mr. Maxmillian Mkungu and Mr. Salim Ally. Special mention is also extended to our report reviewers, Prof. Godius Kahyarara, Prof. Abiud Kaswamila, and Mr. Geoffrey Lufumbi for their unfailing engagement, advice, and wise counselling in their review of the report.

While those acknowledged here have inputs in the report, the opinions stated in this report and any errors of fact are solely the responsibility of the authors.

1. Introduction

1.1 Background and rationale

Environment and poverty in Tanzania are inextricably interlinked to the extent that people who depend directly on natural resources for their livelihoods tend to be poorer in material terms (Mascarenhas 2000; Yanda *et al*, 2003). Consequently, the rural people disproportionately depend on the access and exploitation of natural resources for their subsistence and livelihoods. For instance, it is estimated that over 74 percent of the population is engaged in agriculture as a source of their daily income (URT 2014). Whether working in agriculture, forestry or fisheries or relying on small scale extraction to make out a living, the returns from their labour are subject to environmental factors. Even relatively small weather variability can make a difference between a high crop yield and crop failure. Whether in rural or urban Tanzania, poverty tends to force people to exploit the natural resources they depend upon. Forests are to provide fuel or building materials and other homestead activities, thus contributing to widespread deforestation that leads to loss of biodiversity. In addition, deforestation (particularly in watersheds and water sources), has knock-on effects due to reduced water flows and subsequent interrupted power generation in hydroelectric schemes.

Therefore, the sustainable management of these resources and the best use of revenues that is generated from these resources are paramount. Through initiatives of wanting to establish structures and programmes that successfully integrate poverty, environmental and gender concerns, the Government of Tanzania has taken a number of policy and programme initiatives to ensure the country's improved management of the environment and natural resources (ENR) sector.

Since 2003, The Government of Tanzania in collaboration with UNDP and UNEP has been implementing the Pro-poor Economic Growth and Environmentally Sustainable Development Programme, PEI programme. The programme aims at increasing the contribution of the environment and natural resources to national development goals, including poverty reduction, sustainable economic growth and the broader achievement of MDGs at both national and local levels.

The aim of this study is to identify and understand institutional, legal, budgetary bottlenecks on implementation of PEI initiatives, local best practices, and potential value adding projects in Sengerema District, that may facilitate mainstreaming (and implementing) environmental sustainability, poverty reduction, gender and climate change issues into development plans and develop better architecture for financing the interventions.

1.2 Objectives of the study

The main objective of this study was to Identify Institutional Capacity Bottlenecks, Challenges, and to map innovative best practices and opportunities for supporting the implementation of the development agenda in Sengerema District.

The specific objectives are:

- (a) To assess institutional, legal, budgetary as well as coordination bottlenecks which inflict the implementation of PEI initiatives that are mainstreamed in the District Development Plans (DDPs) of Sengerema District's (SD).
- (b) To identify local best practices and potential value adding projects in Sengerema District.
- (c) To propose recommendations for addressing the institutional capacity bottlenecks and propose projects that can be scaled-up to catalyze incremental progress of the PEI agenda, environmental and gender responsiveness and mainstreaming, and sustainable economic growth in Sengerema District.

1.3 The Methodology

1.3.1 Desk Study/Literature Reviews:

Secondary data was gathered through review of documents from various sources including Government publications, donor agencies and non-governmental organization reports, and reviews and studies that have been carried out previously, major national and sectoral policies.

1.3.2 Field Survey:

Primary data was collected through field visits and interviews conducted with relevant, selected stakeholders from Sengerema District. This includes District Council's Management, members of civil society, private sector organizations, individuals, and producer organizations.

The data at District level was collected through review of the relevant documentation (collected from the District Council and other sources), interviews with individual stakeholders and Focus Group Discussions (FGDs) at the District Council headquarters as well as FGDs in selected community leaderships and groups in Wards and Villages. The sample of the villages and interviews was based on the inclusion concept, and community development data supplied by the District Council.

While participants of the district FGD and community leaders were selected purposively, community FGD members were sampled to ensure equal representation and gender balance.

1.3.3 Structure of the Report

The report is structured as follows. Chapter one provides the Background, and a brief Overview of the Sengerema District. Chapter two presents and discusses the findings related to Institutional Capacity Challenges, best practices and development funding opportunities. The last Chapter gives the conclusions and recommendations essential for future District development.

1.4 The geographic, social and economic profile of Sengerema District (SD)

1.4.1 Geography

The District is found between 2° to 3° latitudes south of the equator and between 32° to 32° 45" East of Greenwich meridian. From North to East, the District borders with Nyamagana

and Ilemela Districts. From South to East, the District shares borders with Misungwi District. The Geita District makes the borders on the Western part. Sengerema District is divided into 5 divisions, 25 Wards, 123 registered villages and 758 hamlets (*Vitongoji*) as administrative areas.

The administrative structures of the Sengerema District Council are shown in Table 1.1 below:-

Table 1.1: Administrative structure of Sengerema District Council

LEVEL	No.
Vitongoji (hamlets)	758
Registered villages	123
Wards	25
Divisions	5

Source: Sengerema District Council, 2014

Population

According to the National Population and Housing Census of August 2012, the District had a population of 663,034 of which 330,018 were males and 333,016 were females. To date, the District has an estimated population of 711,632 where 354,393 are males and 357,239 are females (Sengerema District Council, 2014). Annual population growth rate is high and estimated to be 3.6 percent. Sengerema District had a total of 118,605 households with an average household size of six persons per household and a population density of 81 people per square kilometre.

The major people's occupations are agriculture, livestock keeping and fishing. However, the big share of District's income (about 80%) is contributed by the agricultural sector which employs more than 90% of the total residents of the District.

1.4.2 Climatic conditions

Sengerema District has a bimodal rainfall pattern which consists of a short and long rain. The short rains start in October and reach the peak in December and ends in January. The long rain starts in February and ends in May. The annual rainfall ranges from 800mm – 1200mm.

The District mean temperature is between 21°C - 23°C, with August being the hottest month. This climatic condition favours the production of various agricultural crops. Basing on the climatic condition explained above, the District has two main agro-ecological zones which are Northern and Southern Zones.

Northern Zone

The Northern zone receives a reliable amount of rainfall between 900mm -1200mm per annum. Areas covered by this zone include Kahunda and Buchosa Divisions, Nyamatongo and Buzilasoga Wards (within Katunguru and Sengerema divisions respectively). This zone is important for the production of maize, rice (paddy), cassava, sweet potatoes, pulses, cotton fruits, and coffee which is early stages of production.

Southern Zone

The Southern Zone comprises of Nyanchenche and Katunguru Divisions. However, part of Sengerema Division (Tabaruka and Busisi Wards) is also included in this zone. This zone receives unreliable rainfall normally less than 1000mm per annum (on average 800mm – 900mm). The zone is important in livestock keeping and cultivation of drought resistant crops, particularly cotton, cassava and sweet potatoes.

1.4.3 Natural resources

The total area of the District is 8,817 square kilometres. Out of these 3,335 square kilometres is covered by dry land while the remaining 5,482 square kilometres are covered by water of the Lake Victoria. The area which is covered by vegetation is 677.41 square kilometres of which 638.21 square kilometres being manmade vegetations. About 62% of the District area is covered by Lake Victoria water.

On the West to North Western part of the District, there are a number of small hills and seasonal streams. In the Eastern part of the District, the land is flat but it is associated with few hills as well as seasonal streams. Physical features of the District include a number of manmade water bodies mainly charcoal dams located in Sengerema, Buzilasoga, Sima, Nyamizeze, Nyakasungwa, Nyampande, and Sotta villages.

Forestry

Sengerema District has natural forest reserves and manmade forests. The main indigenous trees are the *Mitundu* and the main planted trees are the *Pinus Cariberia*. There are two types of natural forest reserves: those under Central Government, and those under Local Government, i.e. District Council, Village Councils, and Community Forests, *Ngitiri*. Those under Central Government are the largest, e.g. the Maisome, Sima, and Kome Forest Reserves. The *Ngitiri* are traditional Sukuma land forests. Every family or clan has a *Ngitiri*; they plant trees and later harvest them for firewood, construction, and fodder for livestock. Entrance is strictly under control for preservation purposes, to prevent over exploitation, and to ensure sustainable consumption of *Ngitiri* forest products. In most cases the *Ngitiri* are established near water catchment areas to protect them from degradation.

On the other hand the forestry sector plays an indirect role as a productive sector through planting and on delivering trees. These trees function also as a cover against all forms of soil erosion. Apart from preventing soil erosion (a land degradation agent) but also forests are the good sources of humus that adds soil fertility constantly, the condition which makes the soil fertile for cropfarming. The area of forest reserves and woodlands is shown on Tables 1.2a and b.

Table 1.2 (a): Forest Reserves

No.	Name of forest Resource	Area in Hectares (Ha)
1.	Sima	1,820
2.	Kome	2,100
3.	Maisome	12,000
	Total	15,920

Source: Sengerema District Council

Table 1.2 (b): Woodland

No	Type	Area in Hectares (Ha)
1.	Ngitiri and woodland planted	1,999
2.	Nyamahona Plantation	156
3.	Buhindi Plantation	3,200
	TOTAL	5,355

Source: Sengerema District Council, Natural Resource Department 2007

The contribution of forests and its allied products to local livelihoods, ecosystem services and the District economy as a whole is significant. The forests and forest resources play an important role in supplementing and diversifying farm incomes. The main issue facing forestry sector and forest management and protection in the District are:

- a) Pressure on forests has progressively escalated, and ecological degradation is evident, including forest destruction, poor management, and environmental degradation continue and, with it, negative impacts on marginal communities that depend on forests and forest products. Land clearance for small-scale subsistence farming is one of the major causes of forest cover loss, largely due to increasing populations and low-intensity agricultural practices, such as shifting cultivation;
- b) Dependence by resource-poor households on cash income from the sale of forest products, such as charcoal, honey, wild fruits, and firewood appears to be another major driver of deforestation;
- c) Commercial production of firewood and charcoal as an alternative source of income to meet urban energy demands contributes significantly to deforestation. The demand for firewood for brick making and curing tobacco is also high. With few exceptions, most of the fuel wood used in the District is collected freely from indigenous woodlands or farmlands;
- d) The recent influx of people into areas near forest reserves and water catchment areas is having severe environmental consequences, such as rapid depletion of forests and wildlife, destruction of water resources, and damage. In addition to causing losses to timber and biodiversity, the catchment values are seriously reduced, resulting in hydrological imbalance, which is reflected in reduced water in rivers and streams during the dry seasons and floods during the rainy seasons;
- e) Fires for clearance of land for agricultural expansion and increasing nutrients to the soil is a serious problem to grassland and vegetation conservation;
- f) Limited or uncertain land tenure rights in much of the District woodlands and forests are resulting in extractive use for short-term gain; and
- g) Values of forest goods and services are often underestimated, these include non-marketed timber, non-timber forest products, forest products harvested illegally (the respondents were of the view that up to 80 percent of all forest harvesting), tourism and recreational services, and ecosystem services such as positive influences of forests on agricultural production, water quantity and quality, energy sources, carbon storage, and biodiversity protection.



Figure 1.1: Deforestation Motivated by Biomass Trade in Sengerema

Interventions:

Some of the measures being or that may be applied to address the above issues and enhance the contribution of the forestry sector to poverty reduction efforts and mainstreaming it in environmental management issues include:

- i) Supporting and enhancing the SD and village Councils' capacity and capabilities to play an important role in managing land at the local level;
- ii) Initiating reviews of and updating legal instruments and regulations with changing circumstances;
- iii) Enhancing recognition of forests as an asset for rural livelihoods and subsistence and its inclusion at policy level by mainstreaming forestry into broader poverty reduction strategies and processes, e.g. in DDPs;
- iv) The introduction of community-based forest management to enable communities to have the rights to manage, protect, and use these areas for sustainable forest management and economic development;
- v) The promotion and significant enhancement of the forest products contribution in poverty reduction and improvement of livelihoods and to the District's economy, GDP and national export earnings. The main targeted products are timber, carvings, tree seeds, bee products, and ecotourism;
- vi) Programs for Engaging community to participate in identifying, planning, and implementing steps to protect natural resources and the environment, or effective enforcement of existing regulations and bylaws; and

- vii) Fostering long-term investment and partnership commitment with development partners and other natural resources management stakeholders in forest restoration, conservation, preservation and taking of a long-term, empowering approach.

Other future planned measures include:

- (i) To accelerate the design and implementation of Regional Development Plan and Village Land Use Plans in areas where they do not have them. During the implementation of these plans, the Village Councils and Village assemblies will be given more power to manage land matters. The Village Councils will divide village land into three additional categories: communal land, which is shared by a large number of individuals within the village, such as grazing areas, pastures, forests, or other areas with natural resources; occupied land, which is used for housing, cultivation, and businesses that are managed by individuals in single families; and future land, which is set aside for future use by individuals of the community at large;
- (ii) To enhance revenue collection from forest operations and harvesting, issue licenses and permits and, use the proceeds to regulate harvesting of forest products promote forest development;
- (iii) To promote and support the development of the local authority forest reserves, the gazetted forests managed at the level of District Councils under local governments as production and protection forests, village land forest reserves (VLFR) that occur on village land and managed by the Village Council on behalf of village residents, community forest reserves found on village land and are similar in all respects to VLFRs, apart from the fact that their management is delegated by the Village Council to a group of persons within the community (such as a women's group or a group of charcoal producers), private forests (PFs), those forests owned by individuals or companies that have acquired land title deeds from the government; and
- (iv) v) transfer of use and management rights to the village, *Kitongoji*, clan and family levels of SD to reverse forest decline, provide incentives for sustainable forest management, and contribute to local economic development

The current and future plans by the District Council in the forest sector are to ensure ecosystem stability through conservation of forest biodiversity, water catchments, and soil fertility. The Council plans to ensure sustainable supply of forest products and services by maintaining a network of forest reserves, ensuring sustainable management of forests on public land, and promote private and community forests. The Council plans call for incorporation of beekeeping in the management plans of forest reserves. To ensure conservation of forest biodiversity, the Council plans to establish new forest reserves in areas of high biodiversity. For conservation of catchments, the Council plans to establish new catchment forest reserves for watershed management and soil conservation. In addition, in order to ensure the effective implementation and oversight in the current fast changing social economic environment, the Council is reviewing and enacting appropriate additional by-laws.

Furthermore, efforts are being made by the Central Government (CG) in collaboration with District Council in making sure that citizens plant trees. Individuals, schools, public and private

institutions are required to plant trees around their areas; at the same time the SD Council is planting trees in water catchments areas, in barren lands, along the gullies, etc. The trees include fruit trees, soft wood and rarely hard wood trees. In addition, efforts are being made to conserve more forests. This is being done through involving local people, example the Kome and Maisome forest reserves. People participates by making sure that there is no encroachment in the forest and no bush fires take place. There is also a very important deliberate step that has been taken by SD to allow individuals to have more *Ngitiri* forests in their plots/farms (small forests which range from ½ Ha to 10 Ha). The increased numbers of *Ngitiri* are expected to alleviate the burden (especially among women) of going long distances in search of firewood and also thatching grass.

Beekeeping

The beekeeping subsector is not well developed as a productive sector in the District. Efforts have been made to develop it and a number of initiatives under the support of TANZAKESHO programme, a UNDP funded programme, which facilitated bee keepers to purchase 48 modern beehives, 11 overalls, 11 bee smokers, 11 honey processing tools and 11 pairs of boots which are used in Nyehunge, Tabaruka, Sima and Nyanzenda Wards. There are 106 beehives bell used in Tabaruka, 104 Sima, 41 in Nyanzenda and 23 in Nyehunge.

Under the same programme, the sector was facilitated to conduct training to 22 villages on improved beekeeping. This training involved 92 participants (21 females and 62 males) from Tabauka, Sima, Nyanzenda and Nyehunge Wards. Currently the District has 56 beekeepers who own 618 bee hives, These Bee keepers are from Nyasenga, Sima, Kanyebele, Kasungamile, Ileanilo, Kayenze, Nyamizeze, Nyantakubwa, Kanoni, Kisaba and Kasungamile Prison. The produce of beekeeping has not yet reached a high level and is expected to improve later on.

Fisheries

Fishing on the fresh waters of Lake Victoria is one of the most important undertakings by the people of SD especially those living along or close to the lakeshore and those living in the numerous islands of Lake Victoria. The fishermen use fishing boats/canoes, fishnets, special finest for sardine (*dagaa*)(*restrineobola argentius*) and fish hooks.

The District is estimated to have 2,080 fishermen who use modern fishing gears. Fishes (tilapia, *sangara*, and *dagaa- restrineobola argentius*) produced are not only consumed domestically but are also sold in markets outside Sengerema District including fish processing industries based in Mwanza, other parts of Tanzania, and others are exported as fish fillets and fish maws to Europe, Japan, Australia, Hong-Kong, China, Israel and Dubai.

According to the interviewees, the challenges facing fishing industry in the District include:

- (i) Illegal fishing – i.e. use of un authorized methods/means of fishing e.g. use of smaller sizes of fish net which catches the younger fish not intended /or not allowed;
- (ii) Environmental destruction by pollution, extensive agricultural methods resulting to siltation of the lake, deforestation along lake shores etc.;
- (iii) Presence of lake/sea weeds – aeration in the lake waters becomes poor;
- (iv) Inadequate modern fishing infrastructure, there are only few industry/workshops which

- (v) are in place for making fishing boats and canoes;
- (v) Lack of industries manufacturing or making fishing equipment such as fishnets, fishing hooks, life jackets, floating buoyant, navigation equipment etc.;
- (vi) Lack of fisheries experts to man the industry effectively, ranging from those who would educate fishermen on how to do/perform modern fishing to bring about sustainable development within fishing industry; and
- (vii) The monitoring and supervision of fishing activities is minimal due to resources constraints, few personnel, lack of transport and poor communication; and blast fishing - a technique using explosives that some fishermen use to maximise their catch.

According to the interviewees, the priority strategies to address the challenges are:

- (i) The Council has put in place by-laws to prevent illegal fishing and lake ecosystem destruction;
- (ii) The Beach Management Units (BMUs) are being established in local communities (villages) bordering the lake or in the islands. These BMUs are charged with the duty watch out that fishing activities are done as stipulated by regulations/laws;
- (iii) Improving the fishing villages by establishing clean fishing markets and making sure the villages also are resettled and are clean;
- (iv) Introducing other fisheries development methods such as inland fish farms so as to reduce pressure on Lake Victoria fisheries ecosystem and to fulfill growing domestic and industrial/ fish export demands;
- (v) Improving fish processing or adding value in fishing; villages are encouraged to introduce modern fish drying methods, cold rooms where possible if there is electricity or solar energy to preserve the fishing products.
- (vi) Others include future establishment of fish canning industries that will ensure not only external market to earn foreign exchange but will provide opportunities for additional employment as well as increased income and therefore poverty reduction.

In addition, the East Africa countries have established supporting organizations such as the Lake Victoria Basin Commission, Lake Victoria Fisheries Organization, and and Lake Victoria Environment Management Program (LVEMP II) with the aim of effectively manages fishing activities particularly by use of BMUs.

Overall, the SD's natural resources sector is facing a number of notable challenges that also pose threats to development of the District. Currently, key challenges facing the District include loss of biodiversity and wildlife habitats; deterioration of aquatic ecosystem; climate change; land degradation and declining soil fertility; water scarcity; lack of good quality water for both urban and rural population; environmental pollution; and increased deforestation and forest degradation.

The loss of habitats for wildlife is threatening the District's heritage, while the productivity of lake and river waters is threatened by frequent long dry seasons, pollution and poor management. These challenges facing SD have evolved over time and are dispersed throughout the District. Although the costs relating to these problems cannot be quantified because of lack of data, the economic and social costs may be high. The respondents felt that these challenges have had, and continue to have, adverse impacts on the quality of human life, development and health of ecosystems. In this regard, adequate and appropriate attention to natural resource

protection issues is of paramount importance. These issues must be addressed to ensure a sustainable achievement of PEI objectives.

Soil Conditions

Soil condition in Sengerema District favours production of various crops such as Maize, Rice, Cassava, Legumes Species, Cotton, and Sweet potatoes etc. These soils can be classified into four distinguished soil types that is sand, clay, sandy loam and clay loams. However, the soil fertility has been deteriorating due to continuous cultivation. Fortunately, farmers have been made aware of this situation and a number of measures are being taken including the use of farmyard manure by farmers and industrial fertilizers which are subsidized by the Central Government by up to 40%-60%.

Reliable rainfall and fertile soils have attracted people from other Districts. This has resulted into high population increase. There is also internal migration of people mainly from Southern zone which receives unreliable rainfall to the Northern zone which receives reliable rainfall and having fertile soils. In addition to that, migration of people from rural areas to urban areas is taking place due to people seeking employment opportunities and running businesses.

1.4.4 Economic Activities

The key productive sectors include agriculture, livestock, Forestry, Fisheries, Beekeeping, and to a small extent, small industries as in the case of Sengerema. Mining is still at the initial stage at Sota in Igalula Ward.

The District's economy mainly depends on the agriculture sector because more than 90% of the population depends on crop cultivation and livestock keeping (Sengerema District Council, 2014). Recently, the agricultural sector has been negatively affected by a number of factors such as climatic conditions (rainfall variability) and poor physical infrastructure, roads in particular. This to a large extent has negatively affected the income of the people and the District as a whole. The agricultural sector contributes 80% of the District's income. Table 1.3 shows the land use in the District suitable for Agriculture (i.e., cultivation and irrigation).

Table 1.3: Land Use in Sengerema District

S/N	LAND USE	AREA (Ha)
1.	Available land	265,673
2.	Land under cultivation	155,000
3.	Land suitable for irrigation	8,130
4.	Land for pasture and grazing	68,963
5.	Forest land	41,710
6.	Land for settlement	67,827

Source: Sengerema District Council, 2014

Crops development

The area under cultivation in SD is used for the production of a number of crops like maize,

rice, sorghum, cassava, cotton, sweet potatoes, pulses, legumes spices and fruits. Farmers are facing some problems which constrain them from producing at a maximum level or to get a sustainable profit from agricultural activities. To mention few of these problems are rainfall unreliability and variability, high cost of agricultural inputs, unreliable market prices especially for cash crops and poor infrastructures like feeder roads. These have direct effect on the development of agricultural sector in the District. Despite the above mentioned problems, this sector is still employing more than 80% of the population in the District.

Livestock development

Sengerema District Council has a total area of 68,963 ha suitable for pasture and grazing (Table 1.3). There are 164,045 cattle, 64360 goats and 8,274 sheep in the District. However, the sector is faced by a number of problems which prevent it from giving its maximum contribution to the economic growth of the District. Some of these problems include lack of extension service delivery coverage, shortage of water for livestock especially during the dry season, poor livestock infrastructure such as cattle dips and livestock development centres; the inadequacy of such infrastructure has led to the existence of livestock diseases which cause serious economic losses to livestock keepers due to decreased livestock productivity and/or livestock mortalities.

There are four abattoirs owned by Sengerema District Council at Nyakaliro, Sima, Sengerema mission and Nyehunge. One abattoir is in Sengerema urban. There are also 11 privately owned slaughter slabs located at Kamanga, Katunguru, Kijiweni, Busisi, Nyakasungwa, Buyagu, Kalebezo, Nyehunge, Bupandwa, Kome and Isenyi.

As for the hides and skins, there are four hides and skins sheds owned by Sengerema District Council at Sengerema, Katunguru, Kalebezo and Buyagu. In the District, there are three primary livestock markets at Sengerema, Ngoma A, and Bukokwa. However, only Sengerema livestock market is operating. The District has a plan to open a livestock market at Nyitundu. There are also four minor livestock markets mainly for small animals (sheep and goats) and chickens at Iseni, Sima, Lusikwi and Nyehunge.

Regarding water services, there are 16 manmade water dams for livestock and domestic consumption. These are located at Sima, Buzilasoga, Nyamizeze, Ibondo, Sotta, Sengerema, Nyakasungwa, Nyampande, Lwenge, Ngoma A, Kasungamile, Kishinda, Kalebezo, Tabaruka, Migukulama and Bitoto. Many of these dams do not offer the required services due to heavy silting and or collapsed embankments.

The main challenges in the livestock industry are inadequate feed and overgrazing resulting into land degradation. Others include the livestock diseases that are responsible for the low livestock productivity and/or livestock mortality resulting into serious economic losses for livestock keepers in particular as well as the nation as a whole. There are six important diseases which the District has a tentative disease control programme, these diseases include Anaplasmosis (tick borne), Helminthiasis, Borine pleuroneimonia (CBPP), Black quarter, Rabbits, and fowl typhoid. The programme activities include rehabilitation of cattle dips, livestock vaccination, control of livestock movement, livestock dipping and hand spraying, rehabilitation and construction of water dams to minimize agro-pastoralists migration and agro-Pastoralist education on the formation of livestock keepers association for purchasing livestock inputs.

Energy sources

Sengerema District like many other Districts in the country suffer from energy shortages of many sorts. The District has no sustainable energy sources. The main energy sources are biomass, charcoal, kerosene, disposable batteries, petrol and diesel powered generators and photovoltaic solar panels. Only a minority of the households are connected to the national grid. The recent rural electrifications under REA covered few areas of the District in Buyagu Division along the Kamanga – Sengerema road. The population mainly depends upon biomass – firewood, charcoal and crop residues (e.g. rice husks) to meet their basic daily energy needs for domestic use e.g. cooking and heating water). Wood is also used as fuel for industries like brick and brew making and other processing activities such as drying of fish. Other energy sources include kerosene/paraffin for cooking and lighting, electricity for lighting and other economic activities such as value addition and processing.

The recent rise in the price of kerosene due to the increase in the world price of oil and the country's decision to level the kerosene and petrol prices to prevent profiteering by mixing of the two for use in automobiles has resulted in escalation of the price of kerosene. At the same time, people need kerosene for lighting because of regular power cuts in part due to drought that has lowered water levels in Lake Victoria and reduced hydropower output and the escalating unit price of electricity in early 2014. This has led to households to face increased economic difficulties. Even those households that moved up the energy ladder, for cooking have turned back to charcoal and firewood.

1.4.4 Gender issues

Gender roles in household and communities are divided along traditional cultural lines with women involved in all household issues, including looking after family welfare and utility, upbringing of children, fetching water, preparing food and farming of annual crops or horticultural crops. Men are involved in activities such as farming, fetching firewood for energy, cultivation of perennial crops and trees, livestock keeping, hunting, house construction and maintenance, sale and trade of produce and allocation of resources, and other activities.

The central role of the woman in the SD household and community well-being and economy is fundamental. Lately, the society is witnessing a slow transformation of gender authority and productivity to women. This includes women engaging in off farm income generating activities and new economic opportunities such as various agricultural and natural resources activities



(Fig. 1.2), processing of oil seeds to produce vegetable oil, trading in different merchandise, and formation of women groups aimed at helping each other in terms of advice, developing right ideas and planning, organizational development, cooperation in execution of the jointly planned activities, enhancing perseverance in hard times, and raising capital.

Figure 1.2: Women Marketing of Agricultural Products

The interviewed women groups were of the view that to accelerate the progress of women, there is need to empower women through education and training in entrepreneurship, group and association development, business orientation and training, enterprise development, and processing, packaging and marketing, and availing low cost start-up and operational capital.

Of interest was a complaint by husbands about wives, who abandon families and go to do business in Lake Victoria islands, e.g. Kome. They were of the view that this is culturally unacceptable and authorities should address this issue. In view of the above, continuing gender education and mainstreaming in DPPs is important.

1.4.5 Poverty

The determinants of household welfare and poverty in the District are numerous and complex, ranging from individual and household to community and the social characteristics and the relative importance of these factors varies across the District. It emerged from interviews that declining households' living standards the District is linked to:

- i. Lack of access to training opportunities for post-primary and secondary school leavers;
- ii. Plummeting farm gate prices of the main cash crops such as cotton and spiralling costs of inputs and farming activities;
- iii. Increasing population density;
- iv. Increasing degradation of environment; overexploitation of natural resources to get income for living;
- v. Rainfall variability is having detrimental effects on farming activities and household welfare and has much stronger effects on livelihoods, consistent with a higher engagement in agriculture, livestock, and natural resources sectors by households and very little diversification outside of agriculture;
- vi. Declining fisheries stocks in Lake Victoria;
- vii. Declining forest resources making it difficult to access fuel wood for cooking and other household activities;
- viii. Proliferation of human, plant and livestock diseases;
- ix. Inability to fully use Lake Victoria water for production purposes;
- x. Increasing rural-urban migration of youth to small towns and the rising unemployment due to the drop in value obtained from cotton pushing the youth into petty business e.g. marching guys (*umachinga*); and
- xi. Decline in motivation among certain segments of the District's population.

1.4.6 Climate change issues

The following emerged from discussions with communities and SDC management. The current and potential climate change issues in the District include:

- i. Inadequate understanding of climate change, how it may impact the communities, and how to prepare and respond to its impacts;
- ii. Increase in rainfall variability and prolonged droughts may cause serious pressure in the available water resources. Severe and recurrent droughts may trigger a decrease in water flows in rivers, hence shrinkage of receiving lakes, particularly Lake Victoria, and decline of water levels in wells. Furthermore, some of the perennial rivers may change to seasonal rivers and some wetlands may dry up, which may affect the expanding rice farming in the District;

- iii. Changes in temperature and precipitation may lead to proliferation of disease vectors, pathogens and hosts leading to increased incidences of infectious diseases and outbreaks such as dysentery, diarrhea, cholera and typhoid fever, and increase in crop pests such as cotton bollworms and aphids;
- iv. Changes in temperature may impact fish migration patterns thereby affect fish nursery grounds, breeding and feeding areas and stocks in fishing grounds in Lake Victoria which is surrounding the District, thus affecting nutrition and the large fishing industry on the District shores and nearby islands;
- v. Heavy rainfall may lead to frequent flooding in rural and town settlements, causing damage to irrigation schemes for rice, infrastructure and property and disrupting economic activities; and
- vi. Climate change may lead to failure to expand agricultural, livestock, fisheries, and industrial investments in the District due to increased uncertainty, decrease in command over resources, hence, low revenue collection and inability to offer quality services, and increase in unemployment rate due to decreased viability of agricultural, livestock, and forest produce investments, and related productivity and production levels.

In view of the foregoing, there is a need to establish an effective institutional framework and collaborative arrangements among stakeholders from the District Council to Ward and Village authorities for addressing climate change challenges, taking advantage of opportunities, and implementing adaptation and other disaster and risk management measures that are in line with local context and realities. The District varies substantially among the Northern and Southern Zones in terms of biodiversity, environmental risks, population density, and climate change vulnerabilities. The Government is contemplating to divide it into two Districts to bring the socio-economic services close to the communities.

2. Findings and Discussion

The sections below present and discuss key findings on the institutional, legal, budgetary, and institutional processes and mechanisms for coordination of issues related to PEI and gender initiatives in the SD. Findings on best practices and opportunities for fostering the PEI development agenda are also presented and discussed.

2.1 Institutional, Legal, Budgetary and Coordination Issues and Challenges Related to the Implementation of PEI Initiatives

The SD governance system is holistic, i.e. multi-sectoral, government units with a legal status (body corporate) operating on the basis of discretionary, but general powers under the legal framework constituted by the national legislation, i.e. the Local Government Authority Act of 1982. The SD local government has the responsibility for social development and public provision within its jurisdiction, facilitation of maintenance of law and order, and for issues of importance for the local development, such as public governance, education, health, utilities, physical infrastructure, natural resources and environmental management, agriculture, livestock, and fisheries. The SD local government has a constituted unitary governance system based on elected counsellors, committees and a professional administration.

The overall aim of this section is to identify and understand the institutional and legal issues that hinder or enable implementation of PEI and gender objectives at district level including Wards and Village level.

2.1.1 The Institutional Issues

(a) Sengerema District Position

The legal basis on existence of Sengerema District is based on the Government (Urban Authorities) Act 1982; Local Government Finance Act 1982; Urban Authorities (Rating) Act 1983; Regional Administration Act 1997; and Local Government Laws (Miscellaneous Amendments) Act 1999.

Currently, there are ongoing preparations to reform the institutional arrangement of the local government authorities to: a) address the governance challenges that were raised and noted since the year 2002; b) address growing stakeholder demands for further reforms, and c) improve the performance of the local governments in line with changing citizen needs, and ongoing policy, social and economic changes taking place in the communities, Districts, country, region, and globally. For example, the shift of the cotton production technology to Bt-cotton in other cotton producing countries has made the cotton from Sengerema to be less competitive (price and quality wise) and its price has been falling over years. The Sengerema interviewees reported abandoning cotton production but have no alternative cash crop, which is affecting their employment and security of livelihoods

and poverty levels (see Tanzania Human Development Report, 2014).

(b) Sengerema District Organisation Structure

The Sengerema District Council is divided into divisions, which are then further sub-divided into Wards, Villages Council Authorities, and Hamlet (the smallest government administrative unit). The District Council have autonomy in its geographic area. The District Council co-ordinates the activities of the township authorities and village councils, which are accountable to the District for all revenues received for day-to-day administration. The village and township councils have the responsibility for formulating plans for their areas.

In the District Council there are a number of democratic bodies to debate local development needs. The leadership in the Ward, Village, and Hamlet is composed of an elected chairperson (Villages and hamlet), and Executive Officer (Wards and Villages), and further members all of whom serve on an advisory committee.

(c) Staff in Sengerema District Council

SD Council management is a multi-sectoral and cross-sectoral. The day-to-day activities are run by the Council Management Team (CMT). The SD Council management is headed and led by a District Executive Director who is assisted by the following Heads of Departments: District Planning Officer (DPLO), District Agricultural, Irrigation and Cooperatives Officer (DAICO), District Livestock and Fisheries Officers (DLFO), District Land and Natural Resources Officer (DLNRO), and District Environmental and Sanitation Officer (DESO). Other Departments are the District Community Development Officer (DCDO), District Human Resources Officer (DHRO), District Legal Officer (DLO), and District Reforms Officer (DRO). Ward Executive Officers (WEOs), Village Executive Officers (VEOs) and Village Chairperson also do assist the CMT. The other supporting functions include: Procurement, Legal, Audit, Information and Communication Technology, and Supplies sections. The DED and Heads of Departments are appointed by the Minister after a recruitment process. The responsibility to recruit and dismiss senior officers is devolved to the SD Council and Permanent Service Recruitment Secretariat (PSRS).

(d) Public Service Delivery

The basic functions of the SD Council are: (i) Maintenance of law, order and good governance; (ii) Promotion of economic and social welfare of the people within its area of jurisdiction; and (iii) ensuring effective and equitable delivery of qualitative and quantitative services to the people within its area of jurisdiction.

In addition to the basic functions, the SD Council is charged with seven other functions and duties, as follows:

- (i) Formulation, coordination and supervision of the implementation of all plans for economic, industrial and social development in its area of jurisdiction;
- (ii) Monitoring and controlling the performance of duties and functions of the Council and its staff;
- (iii) Ensuring the collection and proper utilization of the revenues of the Council;
- (iv) Making by-laws applicable throughout their areas of jurisdiction, and considering and

- improving by-laws made by Village Councils within its area of jurisdiction;
- (v) Ensuring, regulating and coordinating development plans, projects and programmes of villages and township authorities;
- (vi) Regulating and monitoring the collection and utilization of revenue of village councils and township authorities; and
- (vii) Subject to the laws in force, doing all such acts and things as may be done by a people's government.

Although in the current legislation the above functions have been assigned to the District Council, this study found that some of the services and infrastructure are still being provided by the Central Government or its executive agencies. Also, most of the funding still come from the Central Government.

(e) *Revenue*

Most of the SD Council income comes from the Central government allocations (through TAMISEMI - PORALG), which account for more than 90% of the entire SD Council approved budget. The SD Council also raises revenue locally. The main sources of local income come from: produce cess, business registration, forestry products, valuation, scaffolding, inoculation and ambulance services; licences including road, property taxes and rents; markets; fines; and others including sale of assets and recovery of public funds. Generally speaking, the revenue base of SD Council is weak (less than 10% of approved budget) and is getting weaker as some of the revenue is shifted to the Central Government through Tanzania Revenue Authority; as farmers and traders and producers change their production and marketing behaviour with changing business demands; and due to the ongoing depreciation of the Tanzanian shilling, as the entrepreneurs and business entities experience smaller net margins. In addition, the recent requirement by the Parliamentary Committee that 60% of the internal revenue should be directed to development projects is constraining even further the effective implementation of other District Council operations and service delivery functions.

2.1.2 Legal Issues

The Sengerema District Council fulfils its basic function of service delivery and support of economic and social welfare of the Sengerema people through the LGA Act of 1982. Article 146 (2) (a) – (c) gives LGAs mandate to play three main basic functions. One, maintenance of law, order and good governance. Two, promotion of economic and social welfare of the people in their jurisdiction and lastly, ensuring effective and equitable delivery of qualitative and quantitative services to the people within their areas of jurisdiction.

The existing legal framework allows for two levels; the national law (Parliamentary Act –*sheria mama*) and the by-laws. The by-Laws are set at the Districts and the Village levels. The important thing to note here is that, the Districts level by-laws are supposed to be consistent with the National Laws under the Parliamentary Act and the Village By-laws are supposed to be consistent with the District council by-laws and are approved by the Counsellors through the Full Council Meeting.

According to the respondents, the following are the legal challenges facing the LGAs in implementing PEI initiatives: i) For the District Council By-laws to work it needs an approval

from the Ministry PORALG. The interviews had a perception that it takes a long time for the by-laws to be approved; ii) Citizens ward and village do not have capacity to formulate and implement functional by-laws and do not have financial resources for oversight.

2.1.3 Budgetary Issues and Challenges

2.1.3.1 Budgetary Process

The SD Council to large extent depends on public budgetary resources and taxes for its operations. The budget preparation process uses the guidelines from the Central Government (Ministry of Finance) (Sengerema District Council, 2014) and follow the normal agreed national budget cycle. As per budget guidelines, the budget processes are supposed to start from the lower level through the O and OD principles (Opportunities and Obstacles for Development). This approach requires all the processes to start from the grass roots (hamlet or street), through the Village, Ward, District Council, Regional Council and finally to the national level. The exercise of prioritizing development projects starts at hamlet level which comprises of a number of households. The agreed priority projects are then submitted to the village level to form village priority projects for that period. The village general meeting is the level where agreed development priority projects are approved. Village plans are then submitted and analysed at the Ward level to form the Ward plans which are approved by the Ward Development Committee (WDC¹). Some of the priorities however, are conceptualized and agreed at the Ward level.

Priority development projects and plans approved at the WDC are then submitted to the District Council level. These development priorities are then discussed through the respective departments at the District level and the synthesized report (*majumuisho*) is discussed and approved by the Council Management Team (CMT²). At the level of District Council the planning process goes through various stages before the approval by Full Council. These levels include, Department level where Ward plans are received and analysed and synthesized into District plans. These plans are analyzed and discussed in Various Departments in the SD Council and then Departmental plans are harmonized to form District plans. The latter are then discussed in the Workers' Council to see whether all matters pertaining to workers' affairs are adequately addressed. Then the Stakeholders³ meeting is called upon by the District Council to discuss the District plans and include issues from non-state actors and then the plan is eventually reviewed by various district committees are chaired by the Councillors. The Committees are: Financial, Administration and Planning; Economic, Infrastructure, and Environment (this includes Gender issues); Education, Health, and Water; Coordination, Control, and HIV/AIDS; and Ethics. Finally the plan is discussed, voted upon by the Full Council. Full Council is the highest Governance organ at the District level for the approving plans and the budgets. It is worth mentioning here that, like in Committees, the Full Council is also chaired by the Mayor and that both in the four committees and the Full Council, the decisions are made by the Councillors only and the technical cadre/District subject matter specialists are not allowed to vote.

¹ The WDC is chaired by the Councilor and the Ward Executive Officer (WEO) is the Secretary of WDC.

² This committee is formed by technical staffs of the council from different departments

³ This includes non-state actors

The plan is then submitted to the Regional Council, where all District plans are consolidated into a regional plan, and finally submitted to the Ministry of Finance through PMO RALG. The Ministry of Finance then submits the Ceilings (maximum budget levels per District) to Districts and the Districts review and scale down the budget levels so that they are in line with the Ceilings (some priorities and projects are normally abandoned at this stage). The District planning specialists mentioned that one of the major challenges in the budget preparation cycle is that the budget ceiling usually comes very late from the Ministry of Finance, which makes repackaging of the budget extremely difficult.

Budgetary gaps

It was found during the interviews that the Sengerema District Council is face with budgetary gaps. The major gap is that between budget allocation and the amount of funds released by the Central Government. Table 2.1 below shows the budget allocation and amount of fund released specifically for Environment, gender and climate change related activities in the last two years. Of the approved budget only 34 % and 65% were disbursed for the years 2011/12 and 2012/13, respectively. This, however, show an improvement in budget release. On the other hand the amount approved has declined from 58.8 Million in 2011/12 to 43.07 Million in 2012/13 (a decline of 26.8 %).

Table 2.1: Budget allocated and amount released for environment, gender and climate change-

Year	Approved budget (TZS)	Amount Disbursed(TZS)	Actual Expenditure (TZS)	Deficit	Deficit as a % of Total Allocation
2011/12	58,838,000	20,000,000	20,000,000	38,838,000	66
2012/13	43,066,000	27,995,000	27,995,000	15,071,000	35

Source: Sengerema District Council - Planning Department. 2014

2.1.4 Gender Responsiveness

This study found that gender related issues are well integrated in the development plans and budget documents. Gender is considered as a cross cutting issue and is mainstreamed in District development strategies, plans, and activities. This has also been acknowledged during the interview with various stakeholders at District, Ward and Village level. There is anecdotal evidence that this may be due to fact that the Wasukuma women and other women living in the District are traditionally known to be among the strong women in Tanzania.

As earlier noted, the main challenge in the implementation of gender related projects is mainly due to insufficient funding. The data show that although the deficit exists there has been an improvement for the past two years (Table 2.2). The deficit has declined from TZS32.3 Million (61.7) in 2011/12 to 3.8 million (12%) in 2012/13. Other issues to note are that the approved budget has declined from TShs 52.2 million in 2011/12 to TZS31.9 millions in 2012/13, and amount disbursed has increased from TZS20 million in 2011/12 to 27.99 million in 2012/13. The possible explanation for this trend is that there has been improvement in budget estimation toward the actual budget.

Table 2.2: Approved and disbursed fund for Gender related activities in Sengerema District

Year	Approved budget (TZS)	Amount Disbursed (TZS)	Actual Expenditure (TZS)	Deficit	% of Total Allocation
2011/12	52,213,000	20,000,000	20,000,000	32,213,000	61.7
2012/13	31,851,000	27,995,000	27,995,000	3,856,000	12.1

Source: Sengerema District Council - Planning Department, 2014

2.1.5 Capacity Issues

For a successful implementation of P-E, gender, and climate change initiatives there is a need to have in place the necessary capacity. This includes human resources (HR), skills, information, and financial resources. The biggest challenge is that most Departments in the SDC do not have adequate human resources. For instance, the key Departments that are supposed to have workers at all levels from District, Ward to Village, have serious human resources gaps. The major HR gaps are in the following areas: Agriculture, Irrigation and Cooperatives; Livestock and Fisheries; Land and Natural Resources; Environment management and Sanitation; and Community Development.

The problem is exacerbated further by the fact that recruitment and placement is conducted by the Permanent Service Recruitment Secretariat (PSRS) but HR management is done by the District Council. For instance, some of the Departments are supposed to have staff at all levels from District, Ward to the Village level. This includes among others administration, agriculture, forestry, and environment officers. In some areas a Village and Ward extension officers is either acting or serves more than one Village or Ward. In Kituntu, Ward for example, only one VEO out of five has the required qualifications and is officially employed as a Village Executive Officer (VEO), the remaining four villages have none.

Table 2.3 below shows the number of staff and gaps to be filled. These data shows that the District has a total of 144 available staff. The total required number of staff is 405 giving a staff gap of 261 people (64 %). The Community Development Assistants, Assistant Welfare Officers, Agriculture Field Officers, Agriculture Technicians, Livestock Field Officers and Assistant Fisheries Officers form the cadre with certificate and diploma as their maximum level of education. The other cadres call for one to have a minimum of university education (a degree).

Severe gaps/deficiency of human resources exists among the Agriculture Field Officers (55), Community Development Assistants (47), Assistant Welfare Officers (34), Livestock Field Officers (34), Assistant Fisheries Officers (24) and Environment Officer (only one available out of 6 required). These occupations are the ones that are supposed to play a key role in the pro-poor growth interventions. The respondents noted that these high vacancy rates and other HR inadequacies are causing underperformance and inefficiencies in the planning and implementation of PEI interventions.

Table 2.3: Staff available and vacancy gaps

S/N	Portfolio Capacity	Available staff	Total No Required	Gap
1.	Human Resources Officers	4	10	6
2.	Forestry Officers	7	14	7
3.	Planning Officer	5	7	2
4.	Environmental Officer	1	7	6
5.	Community Development Officer	9	26	17
6.	Community Development Assistants	11	58	47
7.	Welfare Officers	8	20	12
8.	Assistant Welfare Officers	1	35	34
9.	Agricultural Officers	2	6	4
10.	Agricultural Field Officers	40	95	55
11.	Agricultural Technicians	7	15	8
12.	Agricultural Engineers	0	2	2
13.	Livestock Officers	1	2	1
14.	Livestock Field Officers	34	68	34
15.	Fisheries Officers	2	4	2
16.	Assistant Fisheries Officers	12	36	24
	TOTAL	144	405	261

Source: Sengerema District Council - HR Department, 2014

To ensure smooth operations, the Districts officials are supposed to be equipped with working tools. It was found out that the SD Council has insufficient working tools; these include transportation, ICT facilities, software, and physical and technical infrastructure. This results into inefficiencies and underperformance in various operations. The major reason for inadequate working tools are untimely and low funding levels from the Central Government and low and declining internal revenue sources, shortfall of approved vs. released fund, and sometimes the heavy bureaucracy in the procurement process; for instance the procurement of goods worth more than TZS100 million, such as a vehicle or a machine for a project, involves several local and national committees and may take up to two years. The other reason is that monitoring and evaluation (M&E) of development projects and readjustment is not fully implemented due to insufficient financial recourses for conducting M&E, inadequate transportation, communication, and reporting.

2.1.6 Assessment of the Compliance to the National Frameworks for P-E-objectives

The review of three year District Development Plans and discussion with the Council's management showed that the planning, implementation, operations, monitoring, and reporting systems of PEI initiatives to a large extent comply with National Frameworks for PEI objectives, i.e. are consistent with national policies, laws and strategies. High compliance was noted with the National Strategy for Growth and Reduction of Poverty (NSGRP), National Agriculture Policy, 2013, National Livestock Policy, 2006; Fisheries Sector Policy and Strategy Statement, 1997.

But challenges remain with compliance with National Land Policy, 1995; and National Human Settlements Development Policy, 2000, National Environment Policy 1997, Land Act No. 4 of 1999, and Village Land Act No. 5 of 1999, National Irrigation Policy, 2010, National Forest Policy, 1998, National Water Policy, 2002; National Population Policy, 2006, Environmental Management Act 2004, Forest Act No. 7 of 2002, and Fisheries Act No. 22 of 2003.

It is expected that further challenges may emerge with the compliance and implementation of Big Results Now Framework, National Strategy for Growth and Reduction of Poverty 2016/17-2020/21(MKUKUTA III), Five Year Development Plan II.

2.1.5 The Main Bottlenecks in achievement of PEI Objectives

A number of constraints were identified on the implementation of PEI initiatives from discussions with SDC management, communities, and business persons. The identified major bottlenecks are:

Institutional, Legal, Human Resources and Budgetary Bottlenecks

- (i) Low administrative and organizational capacity from SD Council to Village Council;
- (ii) Inadequate budgetary allocations for programs and projects, and inadequate operational budget and other resources (technical capacity, and working tools) to efficiently and cost-effectively implement PEI related policies, by-laws, regulations, and development projects;
- (iii) Lack of qualified professional staff in some subject areas;
- (iv) Limited human capacity to effectively execute identified investment projects and mobilization of resources for implementation of the investment opportunities;
- (v) Challenges in the budget cycle processes including the constraining budget ceiling that is sometimes sent late to the District Council, and the unreliable and untimely disbursement of funds from the Central Government;
- (vi) Insufficient knowledge, skills and inadequate coping mechanisms by the Councillors and some technical staff to the ongoing quantities and fast pace of reforms and social, legal, and economic changes at national and global levels, which is causing overload, confusion, adaptation burden, and resistance to change;
- (vii) Insufficient skills to formulate and implement by-laws at Division, Ward and Village and Hamlet levels; and
- (viii) Much potential cess revenue goes uncollected due to limited human capacity and technical capabilities for cess administration at Ward and Village levels.

Environmental and Climate Change Bottlenecks

- (i) Severe land degradation linked to loss of soil fertility caused by population pressure, unsustainable farming methods, slash and burn practices to clear land for farming and increase soil fertility, and overgrazing;
- (ii) Illegal fishing practices in some areas degrading the river and lake Victoria ecosystem;
- (iii) Increased nutrient load in Lake Victoria, leading to severe problems of water hyacinth and eutrophication;
- (iv) Expansion of farms and brick making activities into water catchment areas or near rivers affecting water flow;

- (v) Wetlands are suffering from non-sustainable uses due to encroachment (e.g. for rice farming, grazing livestock, brick making, etc.), irrigation, silting, invasion by noxious weeds and plants as well as the lack of clearly defined property rights/tenure. In order to effectively conserve and manage these aquatic wetlands there is a need for adoption of a common national strategy on wetlands.
- (vi) Inadequate understanding of climate change, how it may impact the communities, and how to prepare and manage the risks;
- (vii) Increase in rainfall variability and prolonged droughts may cause serious pressure in the available water resources. Severe and recurrent droughts may trigger a decrease in water flows, which may affect the expanding farming, livestock and fisheries development in the District;
- (viii) Changes in temperature and precipitation may lead to proliferation of disease vectors, pathogens and hosts leading to increased incidences of infectious diseases and proliferation of human and crop diseases;
- (ix) Changes in temperature may impact fish migration and breeding patterns and fishing in Lake Victoria which is surrounding the District, thus affecting nutrition and the large fishing industry on the District shores and nearby islands; and
- (x) Climate change may lead to failure to expand agricultural, livestock, fisheries, and industrial investments in the Sengerema District due to increased uncertainty.

Bottlenecks in the Agricultural, Livestock, Fisheries and Natural Resources Sectors

- (i) Declining profit margins obtained from crop and livestock products sales due to inflation and plummeting value of the Tanzania shilling with time and relative to the cost of imported input factors such as fertilizers and plant health substances;
- (ii) Inadequate production technical skills and farm business management and organization capacity;
- (iii) Inadequate low interest rate credit and innovative financial products and services for crop and livestock production;
- (iv) Limited use of modern agricultural technologies, especially improved seed varieties, fertilisers, agrochemicals and mechanization;
- (v) Low quality of pastures, limited availability and inadequate knowledge of supplementary feeds;
- (vi) Poor access to financial services by farmers and reluctance of banks to extend their outreach to distant rural areas because of perceived risks;.
- (vii) Economic vulnerability: the volatile prices of cash crops e.g. cotton, rice, and fish;
- (viii) Declining acreage of the farm land with increasing population density and increasing acreage of tree plantations, and uneconomical scale of cultivation;
- (ix) Declining quality and quantity of fish stocks and desire to make a quick income is causing illegal fishing practices such as use of homemade small diameter ring nets, *kokoro*, using chemicals, and blast fishing that destroy the fish habitats and countless marine species, cause decline in fish species diversity and quantity and difficulties in the long-term recovery of the ecosystem. This is having a big impact on fisheries development, including dwindling of fish stocks, particularly in Lake Victoria; and
- (x) Underfunding causing underutilization of Agricultural Research Institute, Ukiriguru (ARI) and research outputs, e.g. on the socio-economic dynamics in SD and to generate adequate quality, low-input, climate and pest resilient, and high yielding seed varieties and practices.

Gender constraints

- (i) Low awareness on gender equality balance in the society due to traditional beliefs. For instance, men find it normal for women walking several kilometres to fetch firewood. Although some men said that wives enjoy it because it is their responsibility and they get a time out and an outing from household issues and offers them an opportunity to exchange ideas and experiences with another women;
- (ii) Despite the Sengerema women being strong, gender gaps remain in certain sectors of the society such as command of resources at family and community level and sharing of benefits from productive activities;
- (iii) The need to empower women through education and training in entrepreneurship, group and association development, business orientation and training, enterprise development, and processing and marketing of food and cash crops and livestock produce. For instance, this study found that women were almost absent in the valuable rice value chain upstream processes; and
- (iv) Women spending a lot of time and effort on household work and to fetch resources for household use, e.g. firewood for fuel, sometimes walking more than 10 km, and the distances are expected to increase with increasing deforestation, population growth, and adverse climate change effects.

Food and nutrition constraints

Declining fish quantities and increasing export of fish and sardines to neighbouring countries and global markets is raising the price of fish beyond the access levels of average citizens in Sengerema and may result in protein deficiency in the future.

2.2 Potential Opportunities, Projects and Best Practices

This section presents findings on best practices and opportunities for development from the mapping study. The study was carried out by conducting a desk review as well as a series of interviews with all heads of departments at the District Council, leadership at both the Ward and Village levels with a few selected respondents including farmers, agro-pastoralists, processors, beekeepers, natural resources management groups, and traders. The sections below summarize the study findings:

2.2.1 Potential Opportunities and Projects

A number of sites have been identified for interventions under the PEI initiatives by Sengerema District Council. A total of ten projects have been identified for implementation in Sengerema District (See Table 2.4). These are one Community Radio; two Ward Agricultural Resource Centres (at Nyampande village in Sengerema constituency and Nyakasungwa village at Buchosa constituency); Mobile Kilimo; A number of training programmes (to be organized at a later stage for champions in Sengerema and Buchosa constituencies); Irrigation agriculture for paddy farming; Irrigation agriculture for horticultural farming (at Chamabanda, Nyalwambo and Irunda villages on the shores of Lake Victoria and

Nyampande village); Sunflower, maize and rice processing (at Nyampande village and Sengerema town); Fish farming; and lastly onebeekeeping project (at Nyakaliro village). These sites were identified by the research team in collaboration and agreement with the Sengerema District Council. A set of criteria for project selection and identification of sites were proposed and discussed for each identified project. These criteria and the type of project are presented below:

(a) Sengerema Community Radio

The project site has been confirmed as to be housed at Radio Sengerema FM who will be the implementing partner (IP). The choice of Radio Sengerema FM has been agreed with Sengerema District Council simply because it is a suitable site in terms of frequencies and radio signals which allows clear broadcasting.

Figure 2.1: Sengerema Tele Center



First established as a tele-centre back in 2001, Radio Sengerema FM is an established institution in Sengerema. An IP must be a Non State Actor (NSA) with the required expertise which not only operates in the District, but also collaborates with the District Council. Radio Sengerema FM has been identified and recommended following the fact that it is heard by residents throughout Sengerema District and even as far as the neighbouring communities of Geita, Biharamulo, Bunda, Shinyanga, Tarime, Mwanza, Kigoma and Kagera.

Sengerema Community radio is expected to facilitate economic activities in the District for example in terms of dissemination, education, knowledge and information sharing. Extension officers for example will use this radio to disseminate new agricultural technology (and therefore promoting technological uptake) and action alert etc.

(b) Ward Agricultural Resource Centres(WARCs)

The site criteria for the establishment of these resource centres include the availability of a building that will be easily accessible by the majority of farmers. The centres should also be established where electricity is available, where possible, or other alternative energy sources can be installed. They should also be in areas where farmers can access markets for their agricultural and fishing products. With this in mind, Nyampande resource centre at Nyampande village has been identified as meeting these criteria. In fact, Nyampande has been chosen as the District's resource centre. Nyakasungwa village has also been identified as meeting these requirements but, in addition, it has also been selected to represent the other electoral constituency of Buchosa.

Like Sengerema Community radio, the WARCs are expected to facilitate implementation of economic activities in the District such as information sharing, market information, education, knowledge. Extension officers for example will use the WARCs to disseminate

agricultural related information, action alert etc. Foresters and Fisheries Officers can also will make use of WARCs to disseminate information related to forest and fishing, respectively.

(c) Mobile Kilimo

This is an interactive mobile platform which will be used for multiple purposes such as financial services, networking, information sharing (communication), awareness creation, public and community sensitization, and early warning system etc. This will be availed throughout Sengerema District as it is estimated that 70 to 80 percent of people have mobile phones and are used mainly for communication, but also business facilitation. While E-Agriculture will mainly be used in sites suitable for production of crops, poultry, bee-keeping etc., E-Fishing will be used in sites located along the lake and river shores and E-Forestry in sites with community or village forests. This facility can also be used to curb illegal activities such as illegal fishing or harvesting of forest products in the community.

(d) Irrigation for paddy and horticultural farming

Sites for paddy have been identified due to their strategic and potential location for irrigation agriculture but also because of their potential to scale-up because there are initial developed infrastructure like rubble lining parts of the main canals and division boxes. In these selected sites, PEI project will scale-up or make a contribution by taking a project a step forward or completing it. The project aim will be to upgrade paddy farming from being too dependent on rain-fed cultivation to be able to harvest throughout the year.

(e) Sunflower, maize and paddy processing

Nyampande sunflower processing site has been identified due to the success and best practice of UMIKU group who already manage their own processing machine and is serving the whole community of Sengerema District. Maize and paddy processing has also been identified as potential poverty reduction interventions in Sengerema District.

(f) Fish farming

This project has been identified in order to reduce the pressure being exerted on Lake Victoria due to over fishing but also illegal fishing. This project will also generate incomes to the communities as well as help to meet nutritional requirements. Projects sites are yet to be confirmed.

(g) Beekeeping

This project has been identified and a site in Nyakaliro village has been confirmed. It has been acknowledged that there is an alarming rate of deforestation in the District where an estimated 80 to 90 percent of the population depends on biomass as the major and only source of energy.

Much of the surface surrounding village communities in the District is bare (Fig. 2.2). All the trees (forests) have been depleted. Due to this environmental stress from deforestation, unsustainable farming, unsustainable harvesting of forest products etc., a number of beekeeping groups have been identified in the effort to support them to protect forests and plant trees.

Figure 2.2: Bare Landscape in Mbugani Village, Bulyaheke Ward along the Shores of Lake Victoria



2.2.1.1 Specific details on the projects

Crop Farming

(a) Irrigation agriculture for paddy farming

Focus should be placed on assisting irrigation schemes to be fully operational as they have the biggest immediate impact on agricultural productivity and mitigation of climate change. The potential for irrigation is very high as there are numerous valleys and wetlands. Lake Victoria could also be used as a source of water for irrigation to some of the communities along the shores of the lake. Irrigation schemes should therefore be encouraged and supported. The government through DADPs has started with three irrigation projects and hopes to finalize at least one of them this year e.g. Sukuma Irrigation Scheme at Buchosa Division.

(b) Irrigation agriculture for horticultural farming

The shores of Lake Victoria and other major perennial rivers have been identified as potential areas for irrigated horticultural farming (Fig. 2.3) as well as many other valleys present along the shores of Lake Victoria that are conducive. The Sengerema District Council is planning to create a horticulture centre that will have demonstration plots.

Farmers in the District are mainly situated along the shores of Lake Victoria starting from Chamabanda village (Katunguru ward) and Nyalwambo village (Nyamatongo ward) up to Irunda village. The main horticulture products are tomatoes, onions and cabbage which are sold in Mwanza city through Kamanga ferry. There is also Nyampande Green Horticulture farmers group who are heavily engaged in horticultural farming where their main market is also Mwanza city and Sengerema town.

Figure 2.3: Farmers Irrigating using Water Canes at Mbugani Village, Bulyaheke Ward along the Shores of Lake Victoria



(c) *Sunflower, maize and paddy processing*

As pointed out earlier, in years gone by, cotton used to be the main cash crop and mainstay of the economy of Sengerema District. Unfortunately, this is no longer the case due to the nosedive fall of global prices, where a kilogram is now selling at TZS 750 per kg, down from TZS 1,100 per kg in 2011. Many of the communities interviewed, for example at Kamumulo village, preferred prices to be at least TZS 1,500 per kg in order to meet their production costs. Banana was also popular but has dropped down due to the persistent outbreak of Bacterial Wilt (*Mnyauko*) in the District. As a result of these developments, the main cash crop has now become maize, rice, sunflower and coffee.

Sunflower, in particular, is a relatively new crop which was first introduced in the District through a women's farmers group called UMIKU located at Nyampande village in the 2009/10 season. UMIKU started with 25 members. The group was then able to purchase a processing machine under the DADPs where farmers contributed 20 percent of the cost (TZS 848,000) that was used for buying a motor and construction of the building. Sengerema District Council assisted in installing electricity. The machine is now being managed by UMIKU and operates almost every day and now serves farmers living as far as 85 km away at Kanada and Kome Islands.

At Sengerema District, DADPs has placed emphasis on sunflower due to its high market value. A 5 litregallon of sunflower oil is sold at TZS 15,000. It was further reported that, under DADPs two machines will be purchased this season and will be installed at Katwe and Irenza villages. The DDP is to buy a double refinery machine that can crush up to 5,000kg as in some seasons the District production outnumbers the capacity of available machines.

Due to the huge success of UMIKU, more farmers are now engaged in the cultivation of sunflower though it was still established that less farmers are engaged in cultivating the crop as compared to cotton although the former crop has higher income returns and is a quick-win crop. One of the main reasons for this discrepancy can be attributed to the fact that there is limited huge-scale sunflower cultivation as the majority of farms are not more than three acres.

Fish Farming and Beekeeping

Sengerema District Council is yet to identify appropriate sites to promote fish farming. Currently, Cage fishing is non-existent and a totally new fishing method to the majority of fishermen in the District. There exists limited knowledge on fish farming. The majority of fishermen in the District are still heavily dependent on fishing in the Lake Victoria, the second largest fresh water lake in the world and the largest in Africa. It is rich in biodiversity and fisheries are the major resource for the livelihoods of the riparian communities of Sengerema District and also for export. Unfortunately, the lake is now experiencing many problems associated with extensive resource exploitation, which is now threatening productivity and the ability of the lake to sustain a whole range of economic opportunities. Lake Victoria is under growing threat and the problems are profound and cannot be ignored.

Due to limited fishing equipments being deployed, many fishermen in Sengerema District conduct this activity in the evening/night and use *Kasia* famously known as *Bugabuga*. As a result, pressure lamp (*Karabai*) is being used to illuminate the night while fishing. Women are largely involved at the market place as middle people in selling the family's catch. According to the Tanzania Fisheries Act, permitted fishing nets should be six inches but unfortunately there is rampant use of Beach Seine nets famously known as *kokoro* that are 10mm. Another fishing net related problem is the use of nylon nets commonly known as *uvuviwatimba* that do not decompose at all. Many of these fishermen do not own motor boats. To a large extent, fishing in Sengerema District is mainly done at Kome Island where over 60 percent of the population is involved.

However, there exists the prevalence of illegal fishing, especially at Nyamatongo and Nyakaliro Wards, where poison mainly from coffee and tomatoes chemicals from horticulture is heavily used by fishermen from Mwanza city. BMU and local police (*Sungusungu*) exist but they are struggling to contain this problem as fishermen involved in this illegal fishing are heavily armed and have motor boats. A young fisherman was drowned this year Nyakaliro because of illegal fishing. In view of the above challenges in the fishing sector in Lake Victoria, the Sengerema District Council has placed great emphasis in supporting fish farming projects that will be able to reduce and manage the pressure being exerted on the lake. With this in mind, fish pond farming is being encouraged and will be supported as an inland fishing alternative for the livelihoods of many communities in the District.

Livestock Keeping

Livestock keeping in Sengerema District is mainly cattle, especially Tanzania short horns or commonly known as *Zebu* and *Ankole* or Tanzania long horns (Fig. 2.4 and 2.5). Then there are goats and sheep. These are the threemain categories of livestock although to a lesser extent there is poultry and other livestock. Livestock keeping is mainly for milk production but also for commercial purposes and fattening (*kunenepesha*) as well as ploughing. Cattles are mainly sold to cater for the market outside the district.

Figure 2.4: Cattle – Ankole in Sengerema



At the market place, an Ankole weighing between 200-300kg can be sold between TZS 600,000 to TZS 1,000,000. On the other hand, Zebu tends to be sold for much less and weigh between 150-200kg. Livestock keeping and the limited areas for grazing and water has led to conflicts between pastoralists and agriculturalists in the District.

Figure 2.5: Cattle – Zebu



For example, there exists a conflict at Chamabanda village where pastoralists from Nanchenche ward with huge cattle stock have invaded farmers' land, causing environmental degradation and ruining agricultural crops. Nanchenche ward is an extremely arid area near Geita region and tends to force herders to look for pasture and water elsewhere.

Because of these challenges, the village government at Chamabanda through its Opportunities and Obstacles for Development (O&OD) decided to embark on the construction of a charcoal dam (rambo) and other water troughs to cater for these huge stocks of livestock. Another rambo is currently under construction at Kishinda village. With regards to poultry, an incubator has recently been purchased so as to encourage poultry keeping and is currently being installed and will be managed by TAUSI farmers group at Nyakaliro village.

Environment Conservation and Beekeeping

The ecosystems challenges facing Sengerema District includes increasing pressures on resources as a result of rapid population growth, fishing and agriculture characterized by progressive reduction in farm sizes, and unsustainable land use and management practices. Land and freshwater resource base, associated biodiversity and population livelihoods and food security are threatened by land degradation, declining productivity capacity of croplands and rangelands, disruption of water sources, deforestation (Fig. 2.6) and encroachment of agriculture into wetlands. Climate change and variability aggravates even further this threat.

Sengerema District is experiencing a rise in deforestation as a direct result of the huge awareness and engagement of farmers into paddy farming as more tracks of land are cleared for this agricultural activity. Even reserve areas previously set aside for livestock keeping is disappearing fast. Water sources have now started to dry up. This has become a source of conflict among agriculturalists and pastoralists in Sengerema constituency. According to Mr. Simon Butera, the DALDO, "cattle eat grass but they do not cut down trees. Agricultural activities cut down trees in an alarming pace". In years gone by, land use plan were present that stipulated arable land for cultivation, livestock grazing land, stock routes etc. but this is now non-existent.

Figure 2.6: Deforestation Motivated by Charcoal Business in Sengerema



However, at Buchosa constituency, the story is very different. In the two divisions of Kahunda and Buchosa, environmental conservation is very high. There is a lot of afforestation i.e. tree planting which has become a cash crop for timber harvesting and forests have grown and have started to encroach into arable land. Banana crop farming has disappeared. There is also a Mbawa Kavu project that aims at addressing the problem of Water weeds (Magugu Maji) along the shores of Lake Victoria and rivers in the District.

The many functions of the natural environment (both use and non-use value) therefore calls for prioritizing environmental conservations in terms of direct interventions such as tree planting and indirect through awareness raising and finding local solutions. As an integrated solution, it is envisaged that beekeeping should be encouraged and supported. Currently, there is a project at Nyakaliro being managed by the BMU as an income generation project. The project has been able to purchase 180 beehives and 2.5 percent of generated income will go to supporting the government village office and another 2.5 percent will support BMU initiatives in the village to enhance its performance.

2.2.2 Mapping of Relevant Local Initiatives

Table 2.4 lists the projects that were identified by the survey team in collaboration with officials of Sengerema District Council, and the President's Office - Planning Commission with the inputs from United Nations Environmental Programme (UNEP) and the United Nations Development Programme (UNDP). Among the criteria for selection was that the project must be executed within Sengerema District; it must be a priority in the respective community (in terms of benefiting as many people as possible, with notable impacts); and must address any of the four challenges namely the environment, gender, poverty or climate change. While UNEP and UNDP are expected to provide for initial funding, ESRF and Sengerema District Council will be responsible for coordination, monitoring and evaluation. Note also that in future various funding alternatives such as Private Sector, alternative sources by Sengerema District Council etc will form the major funding sources.

Table 2.4: Summary of the PEI Projects in Sengerema District

Sn	Project Name	Project Site	Status and Remarks
1.	Sengerema Town	Sengerema Community Radio	Currently Sengerema Community Radio is operating. However, it faces a number of challenges such as shortage of studio equipments and some facilities for recording and shooting.
2.	Nyampande and Nyakasungwa	Two Ward Agricultural Resource Centers (WARCs)	Two buildings have been identified for the WARCs. However, both of them require major repair and innovations before they can be used for agricultural resource center. In addition, all of them need to be equipped with facilities such as TV set (and the content), computers and secretarial services. All personnel at the WARCs require capacity building.
3.	Sengerema District	Mobile Kilimo Platform	This is meant to strengthen production and marketing of agricultural products, forest products as well as fish products.
4.	Chamabanda Village (Katunguru Ward) and Nyalwambo Village (Nyamatongo Ward)	Irrigation agriculture for paddy and horticultural farming	Horticulture is one of the key sectors (activities) in the economy of Chamabanda Village (Katunguru Ward) and Nyalwambo Village (Nyamatongo Ward). The yields and therefore incomes earned are also attractive, despite the fact that irrigation infrastructure is lacking
5.	Kahumulo Village (Nyamatongo Ward)	Fish Farming	Capacity Building in Fish Pond Construction, fish fingers, Fish Feeds processing machine, and fish farming in general.
6.	Nyampande Village (Nyampande Ward)	Sunflower, maize and paddy processing machines	These crops are produced in large quantities. Productivity and marketing can only be promoted further if the processing machines or plants are installed and used by farmers
7.	Nyakaliro Village (Nyakaliro Ward)	Beekeeping	There are many potential areas which have not been explored. Most of the groups with beekeeping projects are using poor technology which affects productivity
8.	Nyangalamila Village (Isenza Ward) and Mbugani Village (Bulyaheke Ward)	Tree Planting (Nursery) and forest conservation	There are many areas in Sengerema which have been affected by deforestation to the extent that women walk 15 km to collect fire wood. Bio Gass and tree planting and forest conservation programmes are therefore required
9.	Nyangalamila Village (Isenza Ward)	Bio Gas	There are many areas in Sengerema which have been affected by deforestation to the extent that women walk 15 km to collect fuel wood. Bio Gass and tree planting and forest conservation programmes are therefore required
10.	All Project Sites	Training Programmes	Limited knowledge on Bankable Projects, Loans Applications, utilization and overall project management, as well as cage fishing

Source?

As noted in Table 2.4, a total of 10 projects have been identified for implementation in Sengerema District. These are, one Community Radio namely Sengerema Community Radio; two Ward Agricultural Resource Centers (WARCs) at Nyampande and Nyakasungwa villages; Mobile Kilimo platform which will cater for the entire district; and a number of training programmes

(for identified beneficiaries who are expected to prepare bankable projects and apply for loans from Twiga Bancorp, and champions in the project areas); two irrigation Schemes at Chamabanda Village (Katunguru Ward) and Nyalwambo Village (Nyamatongo Ward) for paddy and horticulture products; and fish farming at Kahumulo Village (Nyamatongo Ward).

Other projects include: beekeeping at Nyakaliro Village (Nyakaliro Ward); Tree Planting (Nursery) and forest conservation at Nyangalamila Village (Isenza Ward); Bio Gas at Nyangalamila Village (Isenza Ward); Tree Planting (Nursery) and forest conservation at Mbugani Village (Bulyaheke Ward).

Implementation of a progressive monitoring and evaluation of the PEI projects identified in Sengerema District will therefore use the M&E framework in Table 2.5 (See also the appendices A1 up to A5).

As the integral part of the monitoring and evaluation process, the overall goal and specific objectives, outcome and performance indicators, and means of verification have been included in the M&E framework. In other words, the overall project goal; the objective; output; activities; outcome and performance indicators; means of verification, baseline data and targets will be specified in the project M&E Framework.

Note that, implementation of the activities is important for the project to realize the desired outputs. Likewise, the realized outputs are necessary for the project to attain the spelt out project objectives. It is only when all the activities are successfully implemented; expected outputs and respective project objectives are realized, the overall goal of the project can be achieved.

A number of indicators for evaluation of the PEI Projects in Sengerema District have been identified (See Tables 2.5 and the Appendices A1 to A5). They range from establishment of projects, number of beneficiaries, income generation, and creation of opportunities such as employment, skills development. Others include, access to loans, resource mobilization, improved communication, and project inception (See also Tables 2.5, and the Appendices A1 to A5).

2.2.3 Project Implementation

(a) The process

As mentioned above, in addition, to UNEP, UNDP, Sengerema District Council and ESRF, a number of other actors will be involved in the project implementation. These are the Non State Actors (NSAs) operating in the district (Private Sector, NGOs, CSOs, etc), champions in the respective Wards and Villages such as Women Groups, Youth Groups, Farmers Groups, and individual champions. In Sengerema District ESRF's Implementing Partners include Sengerema Community Radio, Beach Management Unit, SACCOS, UNESCO, TCRA, Twiga Bancorp Bank, TANESCO etc.

Expertise and/or skills are among the critical requirements for the success of the projects. The government support, commitment and political will of the leadership in Sengerema District, and commitment of the people are equally important if these projects are to make notable impacts in the respective communities. Strategic interventions or projects which are proposed in this

report, can only make meaningful impact when there is a robust implementation framework and/or timetable with a clear roadmap as well as monitoring and evaluation. Thus, other important criteria for success include the following:

(i) *Project Timeframe*

The timeframe provides timeline in terms of when to start and what to start with, and when to finish. The given timeframe needs to be respected and the interventions must be implemented within the agreed time period. One does not have to make it too ambitious, but it is important that the timeframe is realistic. All the proposed projects in this programme will be implemented within the three years project lifetime i.e. 2014 – 2017. Each individual project will have its own timeframe to be specified at a later stage. Implementation of the projects in Sengerema District will commence the first quarter of 2015.

(ii) *The Actors*

As pointed out earlier, it is important to show clearly the roles and responsibilities of different actors or players who will be engaged in the execution of the projects. Note that, implementation plan will need responsible and committed people to make it successful. Sengerema District Council, Private Sector, ESRF, Sengerema Community Radio, Community Leaders, Community members etc are such key players.

(iii) *Resources*

Any strategy and/or project must be financed. Resources must therefore be mobilized and therefore the resource envelop must be known. The resource envelop shows what it takes in terms of financial resources to implement the projects. This is an expensive plan which may not be successful if the resources are not forthcoming. The Funding options for these projects show that, in addition to UNEP and UNDP, Twiga Bancorp, the DPs; the District Council, Community members, and Private Sector have an important financing role. These are necessary pre-requisites to bear in mind.

(iv) *Monitoring and Evaluation*

Monitoring and evaluation must be one of the components of the implementation framework. The District Council must therefore ensure that these projects are successfully implemented i.e. the project results are realized, and the benefits are widely spread and number of beneficiaries are increased. There is also a need to reveal in advance the expected outputs. This will among others motivate actors as well as community members. It will also help to measure the extent to which the interventions have been successful.

Note also that, a successful project will be identified as the Best Practice for other villages, Wards and District Councils to learn. Efforts will be made to ensure that villages, wards and Local Government Authorities draw lessons from successful projects (Best Practices).

(v) *Government Commitment and Political Will*

Implementation of some of the strategic plans in Sengerema District are negatively affected

by persistent conflict of interests, whereby political interests (individual and short terms) undermines economic interests and therefore economic gains which are long term in nature. This claim is evidenced by the fact that unlike economic decisions, in many cases political decisions are primarily for personal interest and stature rather than the interests of the people. These decisions have always been in conflict with technical decisions. Such conflict of interest presents a serious draw back to the successful implementation of DDPs in Sengerema District. Unless there is government commitment and political will, the proposed projects will never make a meaningful progress.

(b) Implementing Partners

Considering the nature and scope of the programme, it is necessary that after identifying the development problems and potential projects in the area, to identify possible collaborators and from them choose implementing partners whom can collaborate in implementing the identified projects. Sengerema District Council and ESRF are among the key players. However, in addition to the District Council and ESRF, it is strongly recommended that Sengerema Community Radio (Sengerema Tele Center), be part of the collaborators (IPs) given their involvement and experience in Sengerema District where they work.

2.2.4 Mapping of alternative funding sources for project implementation

The alternative funding sources which could also benefit the PEI initiatives in Sengerema District include direct engagement with Development Partners (DPs); International Organizations; local institutions such as Parastatal Pension Fund (PPF), National Social Security Fund (NSSF), and the National Housing Corporation (NHC)), and inviting the Diaspora to make investments. Others are developing and submitting bankable or fundable projects; attracting local, regional and international investors to invest in high technology demanding investments; attracting private sector investment capital in public projects; effective use of small scale players (entrepreneurs) at community level such as farmers, livestock keepers and fishermen; improve financial management and resource management; and promote tourism in Sengerema District. These are opportunities and potential complementary funding sources which the district has not been able to utilize fully.

2.2.5 Scaling Up and Replicating PEI Best Practices

As already noted, Sengerema District was created as a fully fledged District with effect from 1975 from then Geita District, which is now an administrative region. A total of 10 projects have been identified for implementation in the District. The ultimate goal is to identify areas that need improvement and scaling-up for better results and that can be emulated by other communities. In this context scaling up means expanding, replicating, adapting and sustaining successful policies, programs or projects in geographic space and over time to reach a greater number of rural poor communities in the District. The following proposed measures are expected to improve performance of the projects and resource utilization thus leading to improved livelihoods of people in Sengerema District:

- (a) Strengthen the microfinance system through support of SACCOS;
- (b) Support for the development of agro business and multiple value chains, for microfinance through multiple channels, and for women and young entrepreneurs. Training should

focus on helping rural entrepreneurs in Sengerema District to identify business opportunities and to help prepare business plans that then can be submitted to TWIGA Bankcorp for financing;

- (c) Support the development of the small holder irrigation value chain development through training, technical assistance and credit support;
- (d) Diversification of Smallholder Farming Systems in Sengerema District through cultivation of indigenous trees and support beekeeping initiatives; and
- (e) Scaling up crop value chains, and especially in terms of access to markets.

The WARs will be equipped with the necessary computer hardware and software, and their staff will be capacitated to undertake the requirements of the project. The centre will be able to access and analyze information, for which its staff will be trained in the use of ICT to search for information relevant to communities.

Note also that, the PEI initiative will support study visits where beneficiaries from Sengerema District will be supported to visit and learn from best practices in other Districts (Nyasa, Bukoba Rural, Bunda, Ileje and Ikungi). Where possible beneficiaries from the five Districts will be supported to visit Sengerema District and learn from any best practice. Within Sengerema Districts, arrangements will be made to support study visits between Wards and between Villages.

3. Conclusions and Recommendations

3.1 Conclusion

The primary aim of this study was to identify and document the institutional, legal and financial challenges on poverty - Environment (PEI) implementation at the District, Ward and Village level. This included examining the social economic and environmental profile of the District; to assess the gaps in both the integration and implementation of P-E, climate change and gender components in the planning and budgeting processes from the National level, Sectoral to Local levels; to assess the effectiveness and adequacy of mainstreaming PEI initiatives, Climate Change (CC), and Gender issues in the planning and budgeting processes;; and lastly, to explore the appropriateness of institutional and legal framework.

The institutional processes and mechanisms for coordination of development planning and implementation were found to be supportive and enabling the implementation of PEI objectives at District level including Wards and Village level. The key challenges were the inadequate financial and human resources and working tools, e.g., lack of appropriate and reliable software and data management facilities for management, coordination, performance review, M&E, quality assurance, and impact evaluation; lack of access to fast internet connection; and limited transportation facilities.

The results showed the the District Council planning, implementation, operations, monitoring, and reporting systems of PEI initiatives comply with National Frameworks for PEI objectives, i.e. are consistent with national policies, laws and strategies. More work and efforts are still needed for implementation and compliance to the Land Acquisition Act (Fair Compensation), National Environment Policy 1997, Land Act No. 4 of 1999, and Village Land Act No. 5 of 1999, National Irrigation Policy, 2010, National Forest Policy, 1998, National Water Policy, 2002; National Population Policy, 2006, Environmental Management Act 2004, Forest Act No. 7 of 2002, and Fisheries Act No. 22 of 2003.

Districtlevel by-laws were found to be consistent with the National Laws and were found to enable the implementation of PEI initiatives. The legal challenges facing the District Council in implementing Environment and Poverty initiatives are: a) For District Council By-laws to work they need to be submitted and approved by the parent Ministry, PMORALG, which sometimes takes a long time; b) The leadership at Ward and Village level do not have the requisite capacity (skills in particular) to prepare and implement their by-laws, which is hindering the implementation of PEI initiatives; c) the misunderstanding between implementation frameworks of sectoral laws and by-laws, particularly between environment management vis-à-vis development of projects; and d) the effective implementation of by-laws both at Districts' and Village level is lack of commitment and financial resources which are lacking to a large extent.

The budget preparations and use of the guidelines in the DistrictCouncil were found to be in line with agreed budget circle and supportive to the implementation of PEI initiatives. As

per budget guidelines, the budget processes are initiated from the grassroots (*Kitongoji*) level through the O and OD (Opportunities and Obstacles to Development) to the Ward, District, Regional and National Levels. The major challenges reported by various stakeholders include;

- (i) Inadequate internal revenue sources which account for less than 10% of the total budget;
- (ii) The internal revenue sources were previously used to cover for internal expenditures (which were mostly recurrent). But recently it instructed by the Parliamentary Committee that from the current budget (2014/15) 60% of the internal revenue should cover for development projects; the challenge here is how to fill the left gap as far as internal expenditure is concerned;
- (iii) There is high miss-match between the approved budget by the Full Council and Regional level vis-a-vis the Ceiling received from the Central Government. To accommodate the ceiling a number of identified priorities have to be dropped. To a large extent this has raised questions at lower levels on the relevance of the processes since only few (not any) of their priorities has been considered and this is demoralizing the stakeholders, who were committed and had high expectations; and
- (iv) The gaps between budget allocation and the amount of funds released exist overtime. For instance, of the budget allocated for development activities only 70% and 45% released for the financial year 2012/13 and 2013/14 respectively.

3.2 Recommendations

This section sheds some light on possible solutions and provides policy recommendations for effectively addressing the observed challenges and gaps in PEI initiatives, climate change resilience, and gender mainstreaming in the District development processes.

3.2.1 Recommendation on Institutional, Legal and Budgetary Issues

The key actions related to addressing institutional bottlenecks include the following:

Institutional

- i. Review the Districts strategic plan that would enable an all inclusive, robust joined-up or holistic approaches to overall development and achievement of PEI objectives whereby the focus is multi-sector and encompasses all livelihood and development issues and generating long term outcomes with higher impacts that can withstand the test of time, and minimum undesired effects;
- ii. Enhance the capacity of the District Council to network, exchange ideas, and engage and share knowledge, technologies, and best practices with other Districts and PEI stakeholders, especially in PEI Districts.
- iii. The District's business community should establish a District Business Council and producer platforms (e.g. Sengerema District Rice Platform) that will: create a respected leadership on the District's business and economic sustainability; provide a forum for its members, who represent all business sectors, to share best practices on business and District's sustainable development issues; advocate for progress and delivering results by developing innovative tools that will address emerging opportunities and socio-economic constraints affecting business development in the District;

- iv. Establish and implement an independent District Advisory Committee composed of highly skilled and experienced experts from various fields to advise and provide technical assistance to the District Council's management team and Full Council;
- v. The District Council should train technical staff on results-based management and budgeting systems for better planning and implementation of PEI interventions and public governance performance to enable establishment of results-based management and results-based budgeting systems;
- vi. Ensure that the institutions and organizations supporting national level PEI strategies and project implementation get a co-ordinated direction from an established coordinating entity in the PMO RALG;
- vii. The District Council should develop a sustainable financing strategy and expose the District authorities to other funding mechanisms such as from local banks for PEG-CC investments by business enterprises, or private sector-LGA/community partnership (such as TIB, Twiga Bank, NMB, CRDB, Agricultural Bank, etc.); community and private sector development framework programs; multilateral bodies and bilateral donors; and private foundations and philanthropic organizations;
- viii. Promote Public-Private Partnership (PPP) for covering immediate and medium term gaps in the district budget, while waiting the flow of funds from the Central Government. This can be achieved through establishing joint investments (e.g. in medium to large scale agriculture, livestock, and forestry projects, value adding/processing industries, human settlements, and physical infrastructure projects). Another way is to organize frequent PPP and investment promotion forums at different levels – District, Ward, Divisional and Village levels or to visit and make the case among regional and prospective international investors; and
- ix. The District Council should develop beneficial strategic alliances with the private sector, NSAs, national, regional, and international institutions and organizations dealing with capacity and capabilities building, development, and research. This would facilitate a fast responsiveness to emerging problems, reduce lead times from design to project completion, and provide of continuous support after the PEI projects end (e.g. monitoring and evaluation, analysis of overall performance of PEI interventions at Ward and Village levels, and review of outcomes to impact assessment and readjustment.

Legal

- i. The PMO-RALG and the Attorney General should undertake a coordinated review of the LGA related legislation and regulations to facilitate and create an enabling environment for an integrated, collaborative multi-sectoral PEI interventions and multi-stakeholder investments that will self-start additional development initiatives at District level and catalyze the required transformation using resources currently available to them.
- ii. Since developmental issues are expected to be more complex with the rising population and competition for natural resources assets, there is a need to review the role and functions of the Council and harmonise certain legislation of line Ministries with those of the Council by-laws. To address bottlenecks related to illegal exploitation and manipulation there is a need to introduce and strengthen participatory management of biodiversity resources in the District, adequate law enforcement, and addressing the foresighting, planning, and financial resources short-comings; and
- iii. The Central Government in collaboration with Council to strengthen governance in land distribution particularly the Ward Land Tribunals (WLTs) to avoid land disputes and

increase public awareness on land laws. Currently most of the WLTs (Land disputes Courts Act of 2002) lack training related to land dispute management.

Budgetary issues

- i. The Central Government should empower the District Council and give it more autonomy and flexibility to mobilize, allocate, and use resources from other sources for the implementation of development objectives and PEI agenda in line with DPPs and national development policies, strategies, and plans;
- ii. The Central government and District Council should create incentives and encourage banks and other financial institutions to provide both low cost long and short term credit to individuals, groups of people, co-operatives, and rural and urban associations for production, processing, and marketing of agricultural, livestock and natural resources products and services;
- iii. Facilitate entrepreneurs' and women groups' access to savings and credit facilities (Savings and Credit Cooperatives Societies- SACCOS, Rotating Savings and Credit Associations- ROSCAs, and VICOBA). To begin with, undertake advocacy on saving and lending options, and train women's producer associations, cooperatives and groups to enhance their administration capacity, organizational and financial management skills, options for reducing cost of delivering financial services and recovery of bad debts, diversification of loan portfolios, risk management, telephone banking, etc., and support capacity-building in the creation and formalization of related financial self-help networks at the Village, Ward and District levels;
- iv. The Central government and District Council leadership should foster the development of human and institutional capacity at the District Council and among contracted tax collection agents to ensure the District Council collects adequate taxes and cess charges and to minimize tax evasion;
- v. The Central government should reform the current cess rates, which are currently based on gross value of production, that are resulting in very high tax on net revenue among farmers, and pastoralists, and natural resources products' producers that use a large amount of inputs but experience small net profit margins. This is resulting in frustration regression, making agro-producers to change their production and marketing behavior to lower their cess payments, and even to resort to tax evasion/avoidance as a coping strategy. The reform may include strengthening collection capacity and methods (e.g. using ICT based instruments, collecting cess after the sale, etc), reducing the rates to broaden the base, to institute a differential cess for food, cash and export products, etc;
- vi. The Council to establish a Development Fund to adequately fund development and self-finance poverty and environment related activities. The Council should sensitize citizens, development agents, and business community to contribute to the proposed fund. This has to be supplemented by the Central Government by allocating and disbursing sufficient financial, human, and technical resources for development and recurrent expenditure to the Council;
- vii. The District Council, communities and individuals should partner with businesses and producer cooperatives, National Private Sector Service Providers/Technical Services Providers, and Business Associations, (e.g. TSPF, ACT, RCT, TCIIA, CTI, etc) to ensure the availability of capital goods and technology transfers that enhance productivity and efficiency; and
- viii. The District Council in collaboration with Central Government and/or development agents

should play a proactive role to train and re-train Councillors and Council's technical staff to enhance the understanding of emerging technical, business, regulatory, trade, green growth and sustainable development issues;

3.2.3 Agriculture, Livestock, and Natural Resources

Crops development

- i. Promote and facilitate access to early-maturing, high-yielding seed varieties of rice, maize, pulses, sorghum, millet, cowpeas and groundnuts that may rejuvenate the village seed system;
- ii. The District Council in collaboration with communities should develop and implement village land use plans which will allocate areas for crops, grazing livestock and for other purpose to avoid land use conflicts;
- iii. Facilitate technological solutions and transfer, including water harvesting, drip irrigation, and cultivation of valuable horticultural products (leafy greens, tomatoes, onions, garlic, lettuce, cabbage, ginger, watermelon, etc);
- iv. Promote and train farmers in the cultivation of highland rice and production of livestock feed for zero grazing;
- v. The District Council and agricultural and livestock sectors' stakeholders should promote and encourage private sector or PPP investments and expansion of commercial services in: (a) organized production in block farms and pooled resources through farmer groups, cooperatives, produces schemes, and ranches; (b) use the economies of scale to produce adequate stocks and link them to bulk buyers and processors; (c) use the farmer groups, associations, and cooperatives and to link them to sources of technology and finance; (d) provision of quality and demand driven research and extension services; (e) developing and effectively maintaining irrigation schemes; (f) effectively engaging in competitive sourcing of inputs; (g) developing crop-specific value chains, market, and supply chains' infrastructure; and (h) provision of accessible and low cost power and energy to facilitate production and progressing;
- vi. The District Council to promote processing of crops, livestock and natural resources products to produce quality and safe consumer ready products and packaging; and
- vii. The stakeholders should take full advantage or research and development results from Ukiriguru Research Institute and other R&D institutions: The District Council and development partners should promote and invest in public and private research, dissemination, and adoption of technological tools and solutions for generation of products, processes and technologies that can enhance efficiency and productivity in agriculture, livestock, and natural resources development, and enable cost effective conservation of biodiversity and environmental assets, and green growth in the District;

Fisheries

- i. Promote and support integrated fish farming as an alternative source of income generation and livelihood by enabling (individuals, groups, business enterprises etc.) access appropriate technologies, purchasing and installing equipment and facilities, and appropriately train the aspirants in the related best practices e.g. design and construction of quality ponds, fishing gear, access to fish fingerings, production of nutritious and quality fish feed, protection from bird pests, prevention and treatment of

- diseases, cold storage facilities, water and environmental management, waste water treatment, and orientation in efficient and cost-effective fish farming operations (starting with the hands-on demonstration/learning by doing); and
- ii. Establish a fish value chain and encourage the participants to share information, know how, resources, and collaborate in investing in supporting facilities and services such as boat building, supply and maintenance of fishing gears and equipment, construction of quality landing sites and markets, refrigeration, transport, and cold storage.

Forestry

- i. Address all drivers of deforestation and forest degradation taking into account specific local circumstances, and support appropriate mechanisms to reward or provide incentives for forest conservation and avoidance of deforestation, as per Participatory Forest Management, Community Based Forest Management, and Joint Forest Management guidelines;
- ii. Promote planting of fast growing trees: Preventing deforestation and boosting reforestation are urgently needed. The District Council, Central Government, Private individuals, Groups and Associations, and Non-state actors need to examine schemes and instruments that recognize and reward individual and community growers to plant and preserve fast growing public and private woodlands. Choice in selection of species should help support local bio-diversity and contribute to meeting the basic needs of local communities in the form of fuel, timber and other forest products; and
- iii. Create awareness on afforestation (for wood fuel, construction, stabilizing soil, aesthetics, and trade) and deliver the knowledge on nurseries development, and forest management by establishing three demonstration village forests of about 10 Ha with 30,000 early trees each (with the assumption that in the early years of survival rate will be 50-60%). Then facilitate entrepreneurs who may be trainer of trainees to take and experiment, test, evaluate and disseminate to others the gained knowledge.

Livestock

- i. Support the establishment of livestock health services in remote areas including supply of drugs, vaccines, and infrastructure (dips, veterinary centers, crushes, hides and skin sheds, slaughter slabs, livestock markets, charcoal dams and abattoirs);
- ii. Train women and youth in environmental friendly storage and tanning of leather and production of leather goods;
- iii. Facilitate development of livestock feeds through pasture establishment and preservation of pastures and crop residues for dry season feeding;.
- iv. Promote modern poultry farming by facilitating women and youths with improved chicken breeds (high yield of eggs and meat - more than 3 kg and 20 eggs per month) obtained through cross breeding of local chickens with improved cocks; and availing training in poultry management (i.e. house construction, feeding, rearing, breeding, disease management, record keeping, and marketing of products);
- v. Improve access to market information in town centres and other markets; and
- vi. The District Council and private sector should facilitate availability of management practices for dairy cattle, goats and chicken and strengthen feed production and veterinary investigation centre to carry out effective disease surveillance and early warning system, analyze, and process animal disease data; and increase access to

medicine and vaccines for chicken and goat diseases.

3.2.4 Recommendations on Environment

- i. Climate change is a major concern for the District, as it affects land and water resources and productive systems. In addition, a large proportion of people's income and livelihoods and District Council's revenue are dependent on climate sensitive sectors (especially agriculture, livestock, fisheries, tourism, and natural resources). Therefore, the District Council and other stakeholders should identify potential vulnerabilities and risks; identify cost effective and appropriate response options for different areas in the District; and develop, introduce, and support uptake of District specific adaptation, mitigation, and resilience measures suited to address climate change induced effects in line with local realities;
- ii. Promote and strengthen traditional and modern early warning rainfall systems and indigenous climate resilient agricultural systems;
- iii. Undertake a comprehensive vulnerability assessment on climate change impacts in the District;
- iv. Enhance Councillors' and technical cadres' awareness and understanding on climate change vulnerabilities and potential impacts in the District; and
- v. Increase resilience to rainfall variability and drought by adopting fast growing and abiotic and biotic stress tolerant crop, livestock, and tree varieties;

3.2.5 Recommendation on Gender

- i. To reduce the workload on women, the District council, private sector, NGOs, and development partners should promote and facilitate the proliferation and use of low cost eco-stoves and biogas systems for cooking and lighting, and transportation of water using motorized or cattle based carts;
- ii. Conduct a study/business health check to assess the results chain of poverty-environment-gender activities on the performance and development of women and youth entrepreneurial groups/enterprises in the District;
- iii. Empower women to be financially independent to safeguard their rights and improve their lives to enable them to fulfil their potential by: a) Increasing opportunities for entrepreneurship training to build agro-entrepreneurial ability and self-employment and diverse market participation to supply local and distant markets; bi) giving women access to know-how, techniques and technologies for increasing crop production (grains, horticultural products, cassava, millet and pulses) and to ensure that higher rates of crop yield growth are sustained in the face of climate change impacts, worsening water scarcity, and rising fertilizer prices; c) increasing resilience to rainfall variability and drought by stressing nutritious and tolerant crop varieties to minimize losses and suffering, e.g. malnutrition of their children; and d) since women potentially hold the greatest leverage for agricultural development, train them in enterprise and group/association development; and
- iv. The District Council, Ministry Health and Social Services and TACAIDS should provide information to households and health care providers on a continuous basis on the sources/causes, prevention practices, management of risks (e.g. addressing the intersections between gender-based violence or coercive behaviour and spread of viral related diseases, i.e. sexually transmitted infections, HIV seropositivity, etc.).

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Appendices⁴

Appendix A1: Logical Monitoring and Evaluation (M&E) Framework

Project Name	Mobile Kilimo			
	Indicators	Means of Verification	Baseline Data (2014)	Targets (2017)
<p>Overall Goal: To assist farmers, fishermen, breeders and traders to advertize various products and find markets for their products in timely and cost effective ways by connecting them to the markets. Farmers will also receive special education on better farming and animal husbandry as well as proper methods of dealing with challenges of farming in Sengerema District</p>	(a) A working Mobile-Kilimo platform (b) Number of registered people (c) Number of men (women) registered (d) Average Household Income	(a) Established and working M-Kilimo (b) Income generation	0 (None) 0 (None) 0 (None) 0 (None) TZS 800,000	1 164,180 80,448 (83,732) TZS 2,400,000
<p>Objective 1: To have the Mobile Platform (M-Kilimo) that will facilitate agriculture i.e. production and marketing, fishing, and forest management</p>	(a) A working Mobile-Kilimo platform facilitating agriculture, fishing and forest management	(a) Established and working Mobile -Kilimo serving: <ul style="list-style-type: none"> • Agriculture • Fishing • Forest Management 	0 (None) 0 (none) 0 (None)	1 1 1
<p>Output: A functioning Mobile-Kilimo platform established</p>	(a) A working Mobile-Kilimo platform	(a) Established and working M-Kilimo (a)	0 (None)	1
<p>The Activities: Designing the M-Kilimo; Testing or piloting the M-Kilimo; Launching the M-Kilimo in Sengerema District</p>	(a) Designed M-Kilimo; (b) Tested or piloted M-Kilimo; (c) Registration; (d) Launched M-Kilimo in Sengerema District	Availability and implementation of the following: (a) Designed M-Kilimo; (b) Tested or piloted M-Kilimo; (c) Registration; (d) Launched M-Kilimo	(a) 0 (b) 0 (c) 0 (d) 0 (a)	(a) 1 (b) 1 (c) 1 (d)

⁴ For Tree Nurseries and Tree Planting (Forest Conservation), fishing as well as Energy saving technologies (Biogas) see section 4.3.2

Appendix A2: Logical Monitoring and Evaluation (M&E) Framework

Project Name	Training Programme: Capacity Building, Bankable Projects and Loan Application and management			
	Indicators	Means of Verification	Baseline Data (2014)	Targets (2017)
Overall Goal Is to train all project beneficiaries on how to prepare Bankable Projects; apply for and administer or manage loans and projects	(a) Number of training programme organized (Resource Person; and Training Materials) (b) A list of beneficiaries or participants identified (Men Vs Women) (c) Training Programme Delivered	(a) Training organization (b) List of beneficiaries or participants (c) Training Delivery	0 (None) 0 (None) 0 (None)	1 15 (15) 1
Objective 1: To ensure champions in Sengerema District prepare bankable projects; apply for loans from Twiga Bancorp (and other Banks); use the loans for better or improved project management	(a) Number of beneficiaries in Sengerema District (Men Vs Women) able to prepare bankable projects; apply for loans from Twiga Bancorp (and other Banks); use the loans for better or improved project management	(a) Preparation of bankable projects; apply for loans from Twiga Bancorp (and other Banks); use the loans for better or improved project management, by beneficiaries in Sengerema District	0 (None)	15 (15)
Output: Sengerema District with champions who are able to take up these opportunities (i.e. prepare bankable projects; apply for loans from Twiga Bancorp (and other Banks); use the loans for better, improved and productive project management)	(a) Number of champions in the district preparing bankable projects (Men Vs Women); (b) Number of champions in the district making applications for loans from Twiga Bancorp (and other Banks) - Men Vs Women; (c) Number of champions in the district utilizing loans for better and productive project management (Men Vs Women)	(a) Preparation of bankable projects (b) Applications of loans (c) Productive utilization of loans	0 (None) 0 (None) 0 (none)	15 (15) 15 (15) 15 (15)
The Activities: Identify a resource person; prepare training modules; identify 60 beneficiaries in Sengerema District for the training; organize and deliver the training; champions' preparation of bankable projects; loans applications; loans utilization; and improved project results.	(a) Identified resource person; (b) Prepared training modules; (c) Number of participants identified for the training (Men Vs Women); (d) Training organized and delivered; (e) Number of loans applications (Men Vs Women); (f) Number of loans utilized (Men Vs Women); (g) Number of projects with improved results	Availability and implementation of the following: (a) Resource person; (b) Training modules; (c) Participants identified for the training; (d) Training programme; (e) Loans applications; (f) Loans utilization; (g) Project improved results	(a) 0 (b) 0 (c) 0 (d) 0 (e) 0 (f) 0 (g) 0	(a) 1 (b) 8 (c) 15 (15) (a) 1 (b) 15 (15) (f) 15 (15) (g) 12

Appendix A3: Logical Monitoring and Evaluation (M&E) Framework

Project Name	Irrigation Scheme: Chamabanda Village (Katunguru Ward) and Nyalwambo Village (Nyamatongo Ward)			
	Indicators	Means of Verification	Baseline Data (2014)	Targets (2017)
<p>Overall Goal: To facilitate a total of 400 farmers in Chamabanda and Nyalwambo Villages adopt irrigation farming.</p>	<p>(a) Number of the farmers (Men Vs Women) adopting irrigation farming in Chamabanda and Nyalwambo Villages (b) Average Household Income</p>	<p>(a) Farmers' adoption of irrigation farming in Chamabanda and Nyalwambo Villages (b) Average income generation</p>	<p>110 TZS 800,000</p>	<p>400 TZS 2,400,000</p>
<p>Objective 1: To construct irrigation schemes which can accommodate a total of 400 farmers Chamabanda and Nyalwambo Villages</p>	<p>(a) Completed irrigation scheme in Chamabanda and Nyalwambo Villages</p>	<p>Construction of the modern irrigation scheme in Chamabanda and Nyalwambo Villages</p>	<p>0</p>	<p>2</p>
<p>Output: A modern irrigation scheme with a potential of covering 400 farmers in Chamabanda and Nyalwambo Villages and other communities in the neighborhood in Sengerema District</p>	<p>(a) Completed modern irrigation scheme with the capacity of serving 400 farmers in Chamabanda and Nyalwambo Villages</p>	<p>(a) Completed modern irrigation scheme and irrigation farming</p>	<p>0</p>	<p>2</p>
<p>The Activities: Carry out a Baseline study; Prepare a baseline report (and recommendations); Identify Implementing Partner; Fund the project; complete construction</p>	<p>(a) Baseline report (and recommendation); (b) Availability of the Implementing Partner; (c) Funding and construction of the scheme; (d) A complete and operating modern irrigation scheme</p>	<p>(a) Implementation of the baseline survey; (b) Preparation of the baseline report (and recommendation); (c) Availability of the Implementing Partner; (d) Funding and construction of a modern irrigation scheme; (e) A working modern irrigation scheme</p>	<p>(a) 0 (b) 0 (c) 0 (d) 0</p>	<p>(a) 2 (b) 1 (c) 2 (d) 2</p>

Appendix A4: Logical Monitoring and Evaluation (M&E) Framework

Project Name	Beekeeping Group: Nyakaliro Village (Nyakaliro Ward)			
	Indicators	Means of Verification	Baseline Data (2014)	Targets (2017)
<p>Overall Goal: To diversify income generating sources and protect the natural environment (forestry) through beekeeping projects Nyakaliro Village (Nyakaliro Ward)</p>	(a) Number of beekeepers (Men Vs Women) at Nyakaliro Village (Nyakaliro Ward) (b) Acres of re-forestation (c) Average Household Income	(a) More income generating and a-forestation (b) Income generation	(a) 0 (0) (b) 0 acres (c) TZS 800,000	15 (5) 10 acres TZS 2,400,000
<p>Objective 1: To facilitate a total of 30 Beekeeping groups in Nyakaliro Village (Nyakaliro Ward) to establish and operate Beekeeping projects</p>	(a) Number of facilitated beekeeping groups in Nyakaliro Village (Nyakaliro Ward)	(a) Facilitated Beekeeping Groups Nyakaliro Village (Nyakaliro Ward)	0	5
<p>Output: A total of 30 Beekeeping Projects Nyakaliro Village (Nyakaliro Ward) established</p>	(a) Number of Beekeeping Groups Nyakaliro Village (Nyakaliro Ward)	(a) Beekeeping Groups Nyakaliro Village (Nyakaliro Ward)	0	5
<p>The Activities: Carry out a Baseline study; Prepare a baseline report (and recommendations); Identify Implementing Partner; Fund the project; Complete and operate the projects</p>	(a) Baseline study conducted (b) Baseline report (and recommendations); (c) Availability of the Implementing Partner; (d) Funding and construction of the scheme; (e) Number of complete and operating Beekeeping Groups	(a) Implementation of the baseline survey; (b) Preparation of the baseline report (and recommendation); (c) Availability of the Implementing Partner; (d) Funding Beekeeping Groups; (e) Operating Beekeeping Groups		
<p>The Activities: Carry out a Baseline study; Prepare a baseline report (and recommendations); Identify Implementing Partner; Fund the project; Complete and operate the projects</p>	(f) Baseline study conducted (g) Baseline report (and recommendations); (h) Availability of the Implementing Partner; (i) Funding and construction of the scheme; (j) Number of complete and operating Beekeeping Groups	(d) Implementation of the baseline survey; (e) Preparation of the baseline report (and recommendation); (f) Availability of the Implementing Partner; (g) Funding Beekeeping Groups; (h) Operating Beekeeping Groups	(a) 0 (b) 0 (c) 0 (d) 0 (e) 0	(a) 1 (b) 1 (c) 1 (d) 5 (e) 5



Since 2003, The Government of Tanzania in collaboration with UNDP and UNEP has been implementing the Pro-poor Economic Growth and Environmentally Sustainable Development Programme - PEI programme. The programme aims at increasing the contribution of the environment and natural resources to national development goals, including poverty reduction, sustainable economic growth and the broader achievement of MDGs at both national and local levels.

This report explores the institutional, legal, budgetary bottlenecks on implementation of PEI initiatives, local best practices, and potential value adding projects in Sengerema District, that may facilitate mainstreaming (and implementing) environmental sustainability, poverty reduction, gender and climate change issues into development plans and develop better architecture for financing the interventions.

This synthesis report bases on the 2-field survey and mapping studies conducted in Sengerema district in 2014. The studies are;

1. *Assessment Study to Identify Institutional, Legal and Financial Bottlenecks on Poverty – Environment (P-E) Implementation at Different Levels of District, Ward and Village*
2. *Mapping Study of P-E Related Innovative Local Best Practices and Local Private Funding Opportunities*

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ISBN: 978 - 9987 - 770 - 06 - 9