CAPACITY DEVELOPMENT FOR RESULTS-BASED MONITORING, EVALUATION AND AUDITING

MAPPING RURAL ICT ADOPTION, KNOWLEDGE MANAGEMENT, ECOSYSTEMS AND LIVELIHOODS IN THE CONTEXT OF MDG ACCELERATION FRAMEWORK (MAF) PILOT PROJECTS

BUNDA DISTRICT

ESRF

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CONSOLIDATED REPORT

(*Summary of the 4 Reports*)[1]

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[1] *Details of the findings and the Proposed Strategic Interventions of the 4 studies can be obtained from the respective Volumes*

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

AFSP	Accelerated Food Security Programme
AIDS	Acquired Immuno-Deficiency Syndrome
AIRCs	Agricultural Information Resource Centres
ATI	Access to Information
CBFM	Community Based Forest Management
CRC	Community Resource Centre
CSO	Civil Society Organization
DED	District Executive Director, DED
DPs	Development Partners
EIA	Environmental Impact Assessment
FGD	Focus Group Discussion
FI	Food Insecurity
GPRS	General Packet Radio Service
HBS	Household Budget Survey
HCMIS	Human Capital Management Information System
HIV	Human Immuno- Virus
ICT	Information Communication Technology
ICT4RD	ICT for Rural Development
IFMS	IFMS – Integrated Financial Management System
IK	Iindigenous Knowledge
iTax	Integrated Tax management System
JFM	Joint Forest Management
KM	Knowledge management
LGAs	Local Government Authorities
LGHRIS	Local Government Human Resouce Information System
LGMD	Local Government Monitoring Database
LRMIS	Land Rent Management Information System
LTPP	Tanzania Long Term Perspective Plan
M&E	Monitoring and Evaluation
MAF	Millennium Development Goals Acceleration Framework
MDG	Millennium Development Goal
MDGR	Millennium Development Goals Report

MKUKUTA	*Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Tanzania*
MKUZA	*Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Zanzibar*
MS	Microsoft
MVP	Millennium Village Project
NAIVS	National Agricultural Inputs Voucher System
NGO	Non Governmental organization
NSA	Non–State Actor
NSGRP	National Strategy for Growth and Reduction of Poverty
PES	Payments for Ecosystem Services
PFM	Participatory Forest Management
PlanRep	Planning and Reporting
REDD	Reduced Emissions from Deforestation and Forest Degradation
SACCOS	Savings and Credit Cooperative Society
SNV	Netherlands Development Organization
SP	Service Poor
TASAF	Tanzania Social Action Fund
TDV	Tanzania Development Vision
TFYDP	Tanzania Five Year Development Plan
TMIP	Third Millennium Initiative Project
TOMSHA	Tanzania's Output Monitoring System for non-medical HIV and AIDS
TV	Television
UN	United Nations
UNDP	United Nations Development Programme
URT	United Republic of Tanzania
USA	United States of America
USD	United States Dollar
VG	Vulnerable Group
VICOBA	Village Community Bank
VIFs	Village Information Facilitators
WAEO	Ward Agricultural Extension Officer
WARC	Ward Resource Center
ZSGRP	Zanzibar Strategy for Growth and Reduction of Poverty

1.0 INTRODUCTION

1.1 Background Information

Tanzania was one of the 189 nations which endorsed the Millennium Development Goals (MDGs) in September 2000 as part of the Millennium Declaration of the General Assembly of the United Nations (UN, 2000; URT 2011). Since endorsement of the MDGs, Tanzania has taken a number of measures to mainstream MDGs in its national development frameworks such as the National Strategy for Growth and Reduction of Poverty (NSGRP/MKUKUTA I and II in Mainland Tanzania), Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP/MKUZA I and II), Tanzania Five Year Development Plan (TFYDP) (URT 2011) and Tanzania Long Term Perspective Plan, LTPP, (URT 2011). All these frameworks are vehicles for realizing the long term aspirations of the nation as articulated in Vision 2020 for Zanzibar and Tanzania Development Vision (TDV) for the Mainland.

Since the publication of Tanzania's first country MDG Report in 2001, successive reports have continued to show that great challenges lie in achieving the poverty goal (MDG 1) and maternal health goal (MDG 5). Progressive achievements have been noted in MDG 2 (Primary School Enrolment), MDG 4 (infant and under-five mortality rate), and MDG 6 (Malaria, HIV and other major diseases) (URT 2008; URT 2010). Greater efforts are needed to achieve Goal 3 (empowerment of women), environment goal (MDG 7) and MDG 8 (global partnerships for development). This mixed state of progress in the implementation of MDGs drove the government, together with other stakeholders (Development Partners (DPs), Non State Actors (NSA)) to advocate for and put in placer sound policies and institutions at national, local and community levels to ensure that Tanzania is on track to achieving most MDGs by 2015.

The MDG country reports so produced served only to present a broad picture of the state of progress (first generation reports) and financial requirements for meeting MDGs (second generation reports, including the Gleneagles scenario). Being essentially national averages, the scores were not capable of fully accommodating analysis of local disparities, hence articulation of the term "localization". Localization in Tanzania was driven by results of Household Budget Survey (HBS) of 2000/01; the bleak prospects of achieving key MDGs; the need to promote inclusiveness in growth; the need to promote governance; and need for ensuring sustainability by, among other measures, building local capacity. To this effect, District MDG reports were produced in 2010, with Bunda being among the first three piloted cases (others were Bagamoyo and Uyui).

The global initiative, Millennium Development Goals Acceleration Framework (MAF), launched in 2010 sought to enable countries to get quickly on track in the most challenging

MDGs. Subsequently, Tanzania piloted MDG 1. The key MAF methodology identifies challenges and bottlenecks and proposes strategic interventions to be implemented to address the identified challenges and bottlenecks at all levels.

In the same vein, between 2007 and 2010, the United Nations Development Programme (UNDP), Tanzania and the Netherlands Development Organization (SNV) in collaboration with Local Government Authorities and civil societies implemented a pilot project on Access to Information (ATI) Initiatives in four (4) rural districts namely, Bukoba Rural, Bunda, Morogoro Rural and Uyui. ATI pilot initiative aimed at improving the quality of local governance and access to basic services by increasing access to and use of relevant local information (the demand side of information) and support the local government in their relatively new role of supplier of information. ATI activities include, strengthening the capacity of local government authorities (LGAs) and civil society organizations (CSOs) to analyze data and supply relevant information to citizens, and strengthening the capacity of CSOs in monitoring and evidence-based advocacy. Lessons are drawn and shared with policy makers with the ultimate goal of improving national processes[2].

The specific challenges at local level relate to inadequate resource mobilization, poor enforcement frameworks, disruption of the ecosystem and climate change (with adverse impacts on agriculture and health), and poor state of physical infrastructure (especially in rural areas). Other challenges include high incidence of poverty (especially income poverty), high illiteracy rate, and limited ability to train, attract and retain skilled personnel, especially in education and health sectors in rural areas (UNDP 2012).

Tanzania requires concerted efforts from key actors particularly at the local level to facilitate the implementation of MAF solutions for the country to be on track to achieving MDGs. Experience and/or lessons from MDG localization have re-confirmed that it is useful and essential to engage local partners such as local government authority, civil society and local communities. This bottom-up approach and MDG localization has enabled collection of adequate social and economic information at communities and District Councils levels thus enabling integration of the findings in local plans and practices with good achievements[3]. MDG localization and ATI are essential building blocks for the efficient implementation of MAF by identifying major bottlenecks and implementing relevant solutions.

Each of the implemented MAF project generally seeks to address growth and livelihoods. In accelerating achievement of MDGs, attempts are made to identify effective and feasible

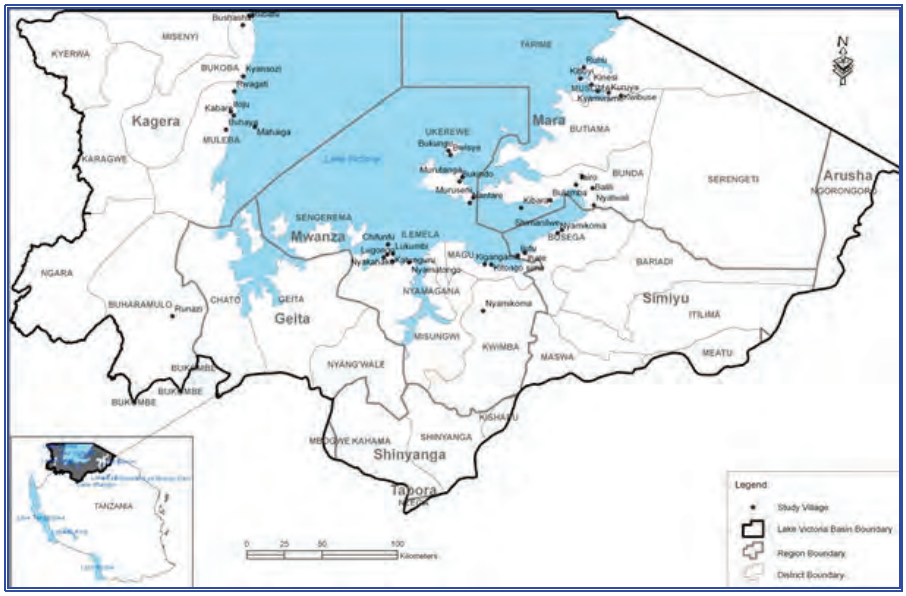
[2] See Millanzi and Mwisomba (2008)
[3] A good example can be drawn from Kagera NGOs Network (KANGONET) (2012); URT (2011); URT (2012a) and URT (2012b)

solutions to the bottlenecks that have been identified and respond to the respective challenges. These initiatives should be seen as enhancing opportunities to empower communities to assume ownership of development efforts.

1.2 The Geography of Bunda District

Bunda district is located in the North Eastern part of Tanzania and is one of the six districts of Mara region. Bunda has many strategic locational advantages such as close proximity to Kenya, the largest economy in East Africa; bordering the world heritage and famous Serengeti National park, bolstering with Lake Victoria waters, the second largest inland lake in the world and with favourable climatic conditions for all types of agricultural undertakings (Figure 1.1).

Figure 1.1: Location of Bunda District



The District has an area of about 3,080Km^2, of which water occupies an area of 200km^2 and land is 2,888 km^2. For the land resources, about 480km^2 is within the Serengeti national park and the rest is agricultural land, grazing land, settlements and forests. The population size in Bunda District is estimated at 335,061, of which 150,461 or 48.4% and 172,820 or 51.6% are male and female respectively (NBS, 2012).

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

It is reported in the Poverty Human Development Report 2005 (URT 2005) that about 67.7% of the district's population was below the national basic needs poverty line. The paradox of poverty amid all the advantages led to a number of initiatives being undertaken to improve the situation. The efforts have included Tanzania Social Action Fund (TASAF), National Agricultural Inputs Voucher System (NAIVS), Participatory Forest Management (PFM), and other MDGs and poverty-related initiatives, (see also section two).

1.3 Problem Statement

Despite Government efforts to initiate and put in place policies and programmes for socio-economic development in Bunda District, the livelihoods of the people in rural communities are not improving fast enough. Implementation of the initiated projects under MDG Localization, ATI and other development initiatives has brought another dimension, that of natural environment and ecosystem degradation, largely because the two issues had not been adequately integrated during the design stage and initial implementation phase of resulting projects. The ecosystem is increasingly facing pressure as a result of rapid population growth, extensive agricultural practices, livestock increase and unsustainable land use and management practices. Disruption of the ecosystem not only impairs capacity of the natural environment to support life and livelihoods of the present generation, but also denies future generations of the opportunity to access and utilize productive resources. On the one hand, mitigation of these adverse impacts is low, while on the other hand, effective monitoring and evaluation (M&E) of projects to track the impacts on ecosystem in Bunda District has been lacking. Evidence reveals that poverty and low awareness in the local communities are among the major factors affecting the ecosystem. Local communities are not informed of the linkages between the ecosystem and livelihoods. Thus, it has been difficult for the local population to appreciate the interventions and/or solutions addressing ecological challenges in their communities.

1.4 Objectives and Justification of Study

It is against this background that further evidence was sought with respect to progress in results and effectiveness of the various projects being implemented in Bunda district.
The objectives of this study are therefore three-fold:

(a) To conduct assessment and benchmark the practice of implementation and execution modality of ATI and MDGs localization projects ; and examine the role of ICT in accelerating and addressing performance gaps of current programmes;

(b) To assess local ecosystem-based interventions to address ecosystem-related challenges;

(c) To recommend actions that need to be taken in order to improve the performance and impacts of the projects in terms of productivity, quality of the ecosystems, and knowledge management.

A notable value addition to this study was addition of knowledge audit, with specific objectives which are to:

(a) Identify available and missing information and knowledge around social protection, poverty and environmental management;
(b) Assess existing sources of information and knowledge on social protection, poverty reduction and environmental sustainability, including its effectiveness, appropriateness and relevance to the rural communities;
(c) Investigate the format and channels in which development information on poverty reduction, social protection and environment flow;
(d) Examine the obstacles and challenges to accessing, retrieval, using and sharing of information and knowledge on social protection, poverty reduction and management of the environment in the selected wards and villages in Bunda district;
(e) Propose possible interventions that would speed up provision and utilisation of information and knowledge in the community resource centres and villages so as to accelerate the pace towards the achievement of the MDGs.

The ultimate goal is to identify areas that need improvement and scaling-up for better results and that can be emulated by other communities. The proposed measures are expected to improve performance of the projects and resource utilization thus leading to improved livelihoods of the people.

Box 1.1 Scaling-up definition

Scaling-up involves a number of actions that can be implemented in isolation or in combination:

- More money;
- Greater organizational scale;
- Topping up projects with additional funds;
- Expanding the geographic scope of projects;
- Transferring an innovation elsewhere;
- Handing projects off to partners.

Adopted from Linn *et al*, 2010

1.5 Organization of Report

Six sections form this report. The first part has dealt with introduction and background. This is followed by section two which covers the methodology. The third section presents the situation analysis, followed by presentation of findings from assessment study 2013 in section four. Section five is devoted to challenges and proposed interventions. Concluding remarks crown the report.

2.0 METHODOLOGY

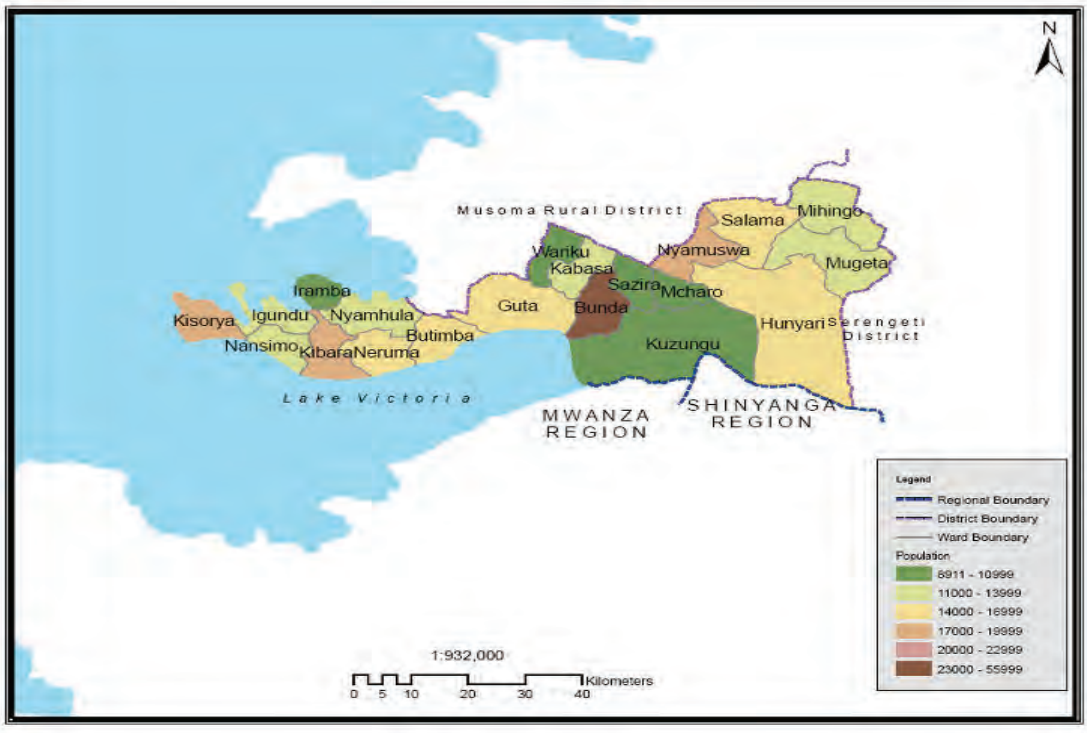
This study differs from previous studies in four key areas:

- Additional areas of investigation – ICT, knowledge audit;
- Focus on livelihood changes;
- Focus on local perspectives (challenges and solutions);
- Focus on attestation – how and where "it works".

2.1 The Study Area

This study was conducted in Bunda District in Mara region where the MDG localization projects (TASAF, ATI and the MAF) are being implemented. TASAF projects are implemented in all wards in the district depending on chosen priority areas of intervention. ATI project is implemented in Bunda town while MAF projects are being implemented in seventeen villages scattered around the district of Bunda. In this study we visited Mugeta, Kibara, Kisorya and Bunda town where MAF interventions were implemented (see Figure 2.1).

Figure 2.1 Bunda District – Location of Sampled Villages



2.2 Population, Sample and Sampling Technique

Sampling was done both purposefully and randomly, using conventional sampling methods. Interviews were conducted at various levels of government and communities. Central government representations included District government officials (District Executive Director, (DED) and Heads of Department), Local Government Authorities' (LGAs) officials included village leaders, while other representative groups included traders, processors, project implementers (both from LGAs and CSOs) and representatives of farmer groups and fishermen; and providers of financial services. A total of 44 respondents were involved.

For the KM component, a total of 93 respondents were involved. The representations were from District executives, Agricultural extension officers, Community or ward and village leaders, Project coordinators (MAF & MDG Localization), Associations/cooperative societies/CSOs and beneficiaries of MAF projects. Details are provided in Annex 1.

2.3 Types of Data and Data Source

This study sought both qualitative and quantitative information. Qualitative information was collected from field visits in the project areas. Quantitative data were obtained through literature review, review of various reports from District, LGAs, project implementers and other parties (projects) involved in related activities such as MARUKU agricultural institute. Information gathered included the way the projects were implemented in the study areas, support received from various institutions, role of central and local governments, private sector and the general public in the implementation process and outcomes. Other information sought related to perception and acceptance of these projects by the targeted group (beneficiaries) and the general public. To a large extent many projects aimed at changing the livelihoods of targeted beneficiaries for the better. To this end information on the change in social economic condition and livelihoods of the people as a result of these projects was gathered. Information on ICT role in achieving the project targets was also probed.

2.4 Data Collection Technique

A mixed approach was adopted in collecting the information needed. These included face to face interviews, Focus Group Discussions (FGDs) with leaders at different levels (District, ward and village officials), experts from various institutions and private sector, CSOs and leaders of various groups/associations. A checklist was used to guide the discussions. Structured questionnaire was administered to individuals, both beneficiaries and non-beneficiaries, as well as traders and processors.

3.0 SITUATIONAL ANALYSIS

A number of studies have documented the socio-economic conditions on Bunda District. These include Bunda District Socio–Economic Profile of year 2008 which described the situation of the district; Bunda District MDG Report of 2010 which assessed achievement of MDGs, Baseline study 2012 which sought to update information and report on progress in implemented initiatives and Local-based ecosystem study (2013) which sought to link ecosystem and poverty. Three of these reports are summarized below.

3.1 Bunda District MDG report

The results of assessment of progress in meeting the MDGs showed that except for three goals (Primary enrolment, Under-five mortality and HIV and AIDS), greater efforts are needed in the rest of the goals as shown in Figure 3.1. The poverty goal (MDG 1) was more challenging.

Table 3.1: Bunda District Council: Progress in MDGs at a Glance

MDG	1990 (base line)*	2008 or nearest year		2015	Glance
		Actual	Expected**		
Proportion of population below basic needs poverty line	39 (national)	67 (2005)	27.3	19.5	
Under-5 Underweight (%)	28.8	1.3 (2007)	20	14.4	
Primary school Completion Rate (%)	n.a	99.3	72	100	
Under-five mortality rate (per 1,000 live births)	191	97 (2007)	99.6	64	
Infant mortality rate (per 1,000 live births)	115	155	59.6	38	
Maternal Mortality Rate (per 100,000 live births)	529	310	244	133	
Births attended by skilled health personnel (%)	43.9	46.6	77.1	90	
HIV prevalence, 15-24 years	6	2.0 (2006 PCMT)	<6.0	<2.0	
Access to potable water :% of urban population	39	46	70	78	

Key: * = national ;**= Computed as % passage time thus 2008 is equivalent to 18 years or 72% time that has elapsed. By 2008 at least 72% of the MDG target should have been achieved

Colours: green = achievable; yellow = achievement probable; red – not achievable

The MDG report in particular, identified the challenges of development in the district as being: (not ranked)

(a) Achievement of all MDGs is the key challenge in localization;
(b) Inadequate local level resource mobilization;
(c) Ineffective enforcement frameworks;
(d) Climate change with adverse impacts on agriculture and health;
(e) High incidence of poverty, especially income poverty;
(f) High illiteracy rate;
(g) Inability of district to attract and retain skilled personnel.

The wide consultations with stakeholders on the findings of the MDG report led to recommendations on how best to make localization deliver. As a way forward the following actions were recommended:

(a) Improving dialogue on micro perspectives of MDGs (community monitoring, capacity building) and ensuring existence of strong multi-sector collaboration within the district council;
(b) Enhancing use of ICT in order to improve availability of information for increasing productivity and market access and communication (village information networks, village information kiosks);
(c) Increasing citizens' voice and knowledge of their rights (to information and quality service delivery), in order to demand value for money;
(d) Strengthening networking between LGAs and CSOs (information exchange, joint planning, joint initiatives, joint management e.g. of information centres);
(e) Scaling up community action (construction, rehabilitation);
(f) Sustaining political will at LGAs level to meeting MDGs;
(g) Strengthening data management.

3.2 Bunda MAF Project Baseline Survey, November 2012

The main objective of the survey was to map, in the district, current public access to information, identify needs and to formulate targets and indicators. Specifically the aims were, to:

- Collect, analyse and compile baseline information that will serve as a basis for measuring results and achievement of the project goals, and;
- Identify benchmarks and standards that can be used as indicators for monitoring and evaluating progress of the project.

This survey involved seventeen villages while visits were paid to six villages. Respondents in the survey comprised of different groups of individuals and different levels. These included District officials, Members of CSOs, Traders, Processors, Farmer's facilitator, Village government and Farmers through their groups.

Findings from the study showed that, with the exception of two livestock development centers, there were no centers established specifically for agriculture. In light of this finding, the study recommended that the project initially utilize ward offices and install the required accessories including solar panels. Emphasis was recommended for sensitization of farmers to use the centers. Further, women involvement was emphasized.

Information flow between agricultural extension officers and farmers was found to be a major problem. Farmers waited for a long time for extension officers to visit them. In order to close the information gap, it was recommended that the terms of services for extension officers be well known and the modality of how farmers can consult them be made clear.

Majority of farmers considered sunflower, local poultry keeping and fish farming as important sources of livelihood. Women in particular were in favor of local poultry keeping. The reason behind this choice is the simplicity of keeping which allows women to participate in other economic activities. Nyangere women group of chicken keeping provided a success story.

The favorable condition and opportunities available in a village was the basis for the choice of intervention crops and livestock. Other villagers however, had different views as to what they would have chosen if they were given that chance. However, it was recommended that villages should concentrate on the originally chosen interventions.

Like any other rural area in Tanzania, financial services are not adequate since it is hard to establish formal financial institutions in these areas. The presence of SACCOs and VICOBA is an opportunity that can be utilized. In light of this, increased financial services were recommended, especially strengthening of Savings and Credit Cooperative Societies (SACCOS) and Village Community banks (VICOBA) with efforts to be directed towards capacity building on financial related issues e.g fund management.

3.3 Local-Based Ecosystem Solutions Study, April 2013

This study covered the Lake Victoria basin regions of Kagera, Mara and Mwanza, and was conducted during late 2012 to early 2013.

The rationale of this study was grounded in the realization that healthy ecosystems provide valuable environmental services in terms of use value and non-use value as well as being important sources of income. At the local level, it is further recognized that mainstreaming environmental issues in plans and other developmental undertakings improves outcomes in livelihoods, health, security and empowerment of people living in poverty. Local actors are the key drivers of change at the local level, and the success of any developmental effort

will be determined to a great extent by their effectiveness in building local capacity and empowering local actors to meet challenges.

The main feature of the local ecosystem approach is that it is based on activities initiated and carried out by one local community or as a joint venture of more than one local community which may cooperate with others in initiating and carrying out these activities.
The main findings of this study, relevant to Bunda, were as follows:

Most farmers own small pieces of land, ranging from 1 to 6 acres. Farming is mainly for subsistence with only a small proportion of their products being sold to meet other needs. Most of the crops are food crops: maize, rice, cassava, sweet potatoes, beans, millet and sorghum with the exception of cotton as cash crop, which, however is marginally considered. To most farmers, crop cultivation is 100% rainfall dependent. Because of climate change, most farmers are producing less per acre. Despite availability of Lake Victoria water, little or no irrigation farming is practiced due to lack of financial resources to invest in the development of the necessary infrastructure that supports irrigation. The few farmers that practiced irrigation were able to realize bumper harvests especially horticultural products (vegetables and tomatoes).

Persistent droughts pose a formidable challenge to many farmers who depend solely on rains, thus constraining them from getting good crop harvests.

Low productivity is also attributed to poor farming methods mostly use of the hand hoe; low access to improved agricultural inputs mainly manufactured fertilizers and improved seeds, and crop damage from wild animals and crop diseases. Declining prices is another problem especially for cotton, with prices dropping from Tshs 1100 per kilogram in 2010 to Tshs 660 per kilogram in 2012. This has discouraged many cotton producers in the district. Other factors that contribute to low productivity are, reduced soil fertility as a result of continuous cultivation on the same farm land, poor quality of inputs such as traditional seeds and lack of extension services.

These realities call for solutions that involve mainstreaming poverty – environmental linkages into development planning processes. The plight of rural households that depend on natural resources for their livelihoods is characterized by both urgency and opportunity. Most of the ecosystem services are in stress. This situation is aggravated by climate change, with the potential increase in the vulnerability of the poor. In addition to the observed degradation of environmental resources, rural communities also experience a variety of social and economic challenges which create the conditions of increasing uncertainty, risk and insecurity across the rural landscape.

In light of these challenges, a number of interventions were recommended. These include:

- Availing credit for financing irrigation infrastructure such as water pumps for small scale horticulture;
- Bee keeping given the rich endowment of forest cover;
- Availing environmental funds like Payments for Ecosystem Services (PES), Reduced Emissions from Deforestation and Forest Degradation (REDD+);
- Irrigation farming using Lake Victoria water;
- Promoting the eco-tourism (both local and international);
- Promoting fish farming;
- Promoting agribusiness;
- Intensifying tree planting and exploring alternative energy sources and energy saving technologies.

4.0 FINDINGS FROM ASSESSMENT STUDY: 2013

The purpose of this section is to present findings of the study. The section has four sections.

4.1 Livelihoods and Ecosystem-Based Solutions

(a) Main Source of Livelihoods

The main findings are that agriculture is the main source of income to 78.6 percent of inhabitants; earnings an average of T.Shs 30,000 to T.Shs 50,000 per month; about 82.1 percent of the farmers participate in MAF project. About 69.6 percent of those who participate in MAF project reported improvement in their livelihoods.

In Bunda district, farmers apply low farming technology, mostly the hand hoe. Extension services are also limited, so is use of fertilizer and improved seed varieties. This explains the low crop productivity. Farmers also face the problem of wild animals such as baboons, hypos and elephants which destroy crops. Crop production is also affected negatively by unpredictability of prices. This is especially for cotton which is grown as cash crop. For example, the producer price for cotton dropped from T.Shs 1100 per kilogram in 2010 to T.Shs 660 per kilogram in 2012. This has discouraged many cotton producers in the area.

(b) Project implementation modalities

As noted earlier, this study assessed three projects implemented in Bunda district. These are, MDG localization initiative, including TASAF, Access to Information (ATI) and MDG Acceleration Framework (MAF). These projects had different modalities of implementations and execution as detailed below.

Box 4.1 Access to information initiative and success story in Bunda District

The main goal of Access to Information initiative is to localize the Millennium Development Goals by improving the demand and supply of relevant information (as distinguished from general information) between the public and the Local Governments Authorities. ATI was a pilot initiative and policy issues at National Level are as equally important as those implemented at LGA level. The two-year ATI initiative was piloted by the Prime Minister's Office--Regional Administrative and Local Government between the end of 2007 and June 2010. The project was supported by the United Nations Development Programme and Netherlands Development Organization and was implemented in four districts of Bukoba Rural, Bunda, Morogoro Rural and Uyui. Each of the four districts were responsible to take one sector or thematic issue. The priorities were Water and Sanitation (Bukoba Rural), Malaria (Uyui), Maternal Health (Bunda) and Education (Morogoro Rural).

ATI in Bunda: success results

In 2009, the Bunda District had one of the highest maternal mortality rates in Tanzania. The maternal mortality ratio was 300 deaths per 100,000 live births, placing the district's level higher than the national level maternal death rate of 265 per 100,000 live births. About 67% of maternal deaths occurred at home.

The main objective of the initiative was to ensure that maternal health related information was appropriately collected and analyzed through the use of Information Centers. The interventions resulted in the construction of dispensaries and establishing mobile clinics. More labour wards were constructed, more women attend clinics, strengthened relations between LGAs and CSOs and establishment of relationship with new viable partners: the launch of the ICT for Rural Development (ICT4RD) project in Bunda District has given the Information Centre state-of-the-art equipment to properly analyze data. This essentially means more accurate and relevant information on maternal health for the district hospital. Maternal deaths declined by more than a half.

(c) MDG Acceleration Framework (MAF)

MAF is an initiative designed to speed up progress in attainment of the Millennium Development Goals (MDGs), noting that with business-as-usual scenario many countries, particularly in Sub Sahara Africa, will not be able to attain all or most of the MDGs and therefore a call for adoption of business unusual scenario (URT and UN 2011).

Tanzania was among the few countries that piloted MAF, with Bunda districts as one of the beneficiaries. MDG 1 (poverty and hunger) was the piloted goal.

The project was implemented in stages. In the first stage the project was introduced at the local government authority namely, Bunda District Council which, in collaboration with a locally based Bunda CSO named Third Millennium Initiative Project (TMIP) implemented the project. During the discussion with the district council's heads of department, it was clearly noted that Bunda district council is aware and has adopted the project.

A baseline survey was conducted in early October 2012, in the project area in order to map public access to information, assess needs and formulate project indicators and targets. The baseline information was then compiled and analyzed to form the basis for measuring results of the projects. Together with this exercise the project was introduced to the study areas (Wards and Villages). The implementing partners, namely Bunda District Council and Third Millennium Initiative Project utilized initial results and suggestions made by the baseline survey to scale up the project. The selected crops included paddy and sunflower while livestock included local chicken and fish farming.

The selection criteria of farmers/farmer's groups varied based on selected crops and/or livestock. For paddy and sunflower, whoever had prepared a farm of not less than 2 acres was provided with all the necessary inputs which included improved seeds and fertilizers. Farmers were not very responsive since the project started a little bit late in that it was difficult to cope with the ending season; and delay in the installation of processing machines for sunflower at Mugeta and Kibara villages. For chicken, the response was relatively high such that the selection of farmers had to be competitive. The selection of fish farmers and groups favored those who had already started this activity and had at least one fish pond.

(d) ATI and Ward Agricultural Information Resource Centers (WAIRCs)

ATI initiative in Bunda was a two year project (2008-2010) implemented in Bunda town but also servicing nearby wards. The main objective of the project was to improve the flow of information between local government authorities and communities. ATI resource centre at Bunda town has working facilities such as computers and personnel overseeing its operation. With the MAF project, this centre has now been upgraded to WAIRC.

MAF project has also established three further WAIRCs in the district at Mugeta, Kibara B and Kisorya villages. All three WAIRCs are functional, though with varying capacities. At Mugeta, for example, the WAIRC is fully functioning with ICT equipment including a satellite dish and farmers are accessing information. The resource centre is currently being managed by the village agricultural officer/extension officer though the plan is to recruit a trained information officer in the future. At Kisorya, the project has completed renovating a 2 room building that was handed over by the ward/village government. The AIRC has two rooms that have been furnished with ICT equipment since January 2013 but are yet to be fully installed and operational. The centre is being managed by a recruited person specifically for that purpose. There is also a satellite dish. The centre is yet to be officially launched although everything is available for the operation. The district vision is to roll-out these AIRCs to other wards and villages with potential of operationalizing them fully.

Under phase two of MAF project, the plan is to be able to purchase and supply 50 mobile phones to farmers who will be able to communicate instantly with the WAIRC and extension officer(s) as need arises. The 50 farmers would be identified from farmers groups that are already in the MAF project. There would also be software installations with agricultural marketing information etc and professional training would be offered to all WAIRC personnel i.e. ward extension officers and the permanent recruited officers overseeing the centres. The district council officers will continue to offer support, monitoring and evaluation and overall supervision of these centres for sustainability.

In Kibara, the centre is fully operational, with plans to relocate it to a more spacious appropriate location, away from the community bank premises where it is currently located (for security of SACCOS funds).

(e) TASAF and National Agricultural Input Voucher System (NAIVS)

TASAF is a government funding facility providing a mechanism that allows local governments and village governments to respond to community demand for interventions that will contribute to the attainment of MDGs particularly MDG 1 (poverty reduction). TASAF projects are implemented throughout the district depending on the request and priority of the communities. It should be noted that the major objective of TASAF is to empower communities to access opportunities so that they can request, implement and monitor sub projects that contribute to their livelihood linked to MDG indicators.

In Bunda, TASAF has been extremely successful in upgrading roads as well as constructing concrete trenches (*mitaro*) alongside these roads. All this was done under Phase I of the project. The plan is for all upgraded roads to be tarmac under Phases II and III of the project, currently at planning stage. Bunda district is facing challenges of forest management due to huge levels of deforestation. The Participatory Forest Management (PFM) project which is intended to address this problem is under-funded thus facing a challenge in its endeavor of environmental and ecosystem preservation. The main forest in Bunda is around Mountain Balimi, the major source of natural spring water for the inhabitants of Bunda town.

With regard to NAIVS, it was the view of many people interviewed that it is a national problem. At the local level in Bunda, there are issues pertaining to how NAIVS operates and the overall efficiency of the system and whether it is making sustainable impact on the ground to the intended farmers. The main issue has to do with data in that there are no credible and reliable data that track purchasers/users. It is difficult to determine both the quantity of produce and acreage under cultivation simply because the tracking system that is used to track farmers is inefficient. Because of excessive bureaucracy, to many farmers the vouchers and therefore the requisite inputs always arrive late. At the district council, it was highlighted that it is easier to check when the vouchers are taken but extremely difficult and laborious to check where it has been used! As a result, this has led to high levels of inefficiency and wastage. To emphasize this, District officials disclosed that over 80 percent of agricultural subsidies in year 2011/2012 were not used and emphasized that greater planning, coordination and execution should be prioritized. Consequently, the government has now decided to channel NAIVS through banks. What should also be introduced is an ICT tool in order to track farmers, something similar to what a local Bunda NGO called Pamba Net has done for cotton farmers, through the Cotton Board. Pamba Net ICT tracking system can now be used as a success model for other crops. This model should be rolled out to other districts across the country in order to help accelerate planning, coordination and unlocking their agricultural potential.

Box 4.2: Show case of local initiatives to increase agricultural productivity through irrigation in Bunda District

Nyatwali village has an irrigation scheme for paddy farming. In this scheme, farmer groups share some of the capital costs including electricity charges according to the location of the farm. Other cost items include maintenance of water pipes from the lake to the farms and the annual subscription fees. Benefits which include fertilizer subsidies, extension services and etc are also shared. Farmers contribute two bags of rice after every harvesting season. In year 2011, the average production was 21bags/acre. This is equivalent to 2,100kg/acre which is significantly higher than the district average production which is 420kg/acre. The average production cost was Tshs. 698,000 per acre and the average selling price during harvesting time was Tshs. 60,000 per bag. This means that a farmer got on average net revenue of Tshs 562,000 per acre. This project demonstrates the importance of irrigation farming in the area.

(f) Coping with ecosystem degradation – resorting to fish farming

Consultations with groups of fishermen revealed that due to unsustainable fishing methods (small wire mesh nets, use of poison and dynamite etc.), fish catch has declined considerably in Lake Victoria to the extent that some fishermen have abandoned fishing in favour of crop cultivation.

In all the villages visited, fish ponds have been constructed, though with differing quality. Figure 4.1 bears evidence.

Figure 4.1 Fish Farming in Bunda district – Modern and Traditional ponds contrasted

Traditional Fish Ponds in Mugeta	Modern Fish Ponds in Kibara
	

4.2 Information and Communication Technology (ICT)

4.2.1 Current situation

Based on the information gathered from officers at the District Council, there is readily available Management Information Systems related to: financial, human resource, Land Tax collection. It was noted in the same discussion that these systems are meant for upward communication, from the district to the Ministries.

In relation to MAF project, four AIRCs have been established in Bunda town, Mugeta, Kibara and Kisorya. All the AIRCs are branded with a big banner similar to the one seen at Mugeta AIRC (Figure 4.2).

Figure 4.2: Banner outside Mugeta AIRC

(a) Bunda Town

The AIRC in Bunda town is fully furnished with six (6) computers, Internet access, tables, chairs, a printer, a photocopier machine, a DVD player, and personnel. This center was

established during ATI project, and was later transformed into a fully-fledged AIRC under MAF project. The Center is located in the same office as the Third Millennium Initiative Project implementers of MAF project. In principal, this AIRC is owned and opeated by TMPI themselves. The AIRC has good Internet connectivity provided through another Project known as ICT for rural development. The six computers are used as Internet Café.

(b) Mugeta

The AIRC is located at the Ward office building, furnished with a computer, printer, a satellite TV, and a DVD player. Center Manager is the Mugeta ward extension officer who is using the center as office. Internet is provided via Vodacom modem.

(c) Kibara

The AIRC is located in Kibara B village, the head quarters of Kibara ward. It is housed at the Kibara Biashara SACCOS (KBS). The center is furnished with a computer, printer, a satellite TV, and a DVD player. Center Manager is the Kibara ward extension officer who is using the center as office. Internet is provided via Vodacom modem.

Figure 4.3: A Focus Group Discussion at Mugeta

It was noted during the discussion with Ward officials that there is a plan to move the Center from where it is now to Ward office building as the current location limits its usefulness. The shared location with a financial institution scares farmers away due to big crowds transacting. In addition it might jeorpidize the security of the SACCOS, especially during the operating hours of the SACCOS when cash availability is highest.

(d) Kisorya

The AIRC is housed in the Ward government office building located at the center of the township. The center is furnished with a computer, printer, a satellite TV, and a DVD player. Center Manager is the Kisorya ward extension officer who is using the center as office. Internet is provided via Vodacom modem.

4.2.2 Existing Management Information Systems

Various Management Information Systems were reported to be in use at the District Council as follows:

(a) IFMS – Integrated Financial Management System, providing connectivity to the Central server in Dodoma,
(b) iTax – Integrated Tax management System with all relevant revenue collection points being linked together to a centralized server;
(c) PlanRep – Planning and Reporting tool for LGAs;
(d) LGMD – Local Government Monitoring Database;
(e) LGHRIS – Local Government Human Resouce Information System;
(f) HCMIS – Human Capital Management Information System, also known as Rawson;
(g) LRMIS – Land Rent Management Information System with a powerful server together with desktop computers;
(h) TOMSHA – Tanzania's Output Monitoring System for non-medical HIV and AIDS interventions. This project has provided ICT facilities to facilitate outreach activities.

4.2.3 Availability of Infrastructure

It was noted that electricity is available in all the surveyed areas. In terms of telecommunication, out of the five mobile phone service providers, only TTCL is not available in those areas. Airtel, Vodacom, Tigo, and Zantel are accessible in all wards. Other ICT initiatives in the district include:

(a) ICT for Rural Development (ICT4RD):

This is a research and development project that has created a communication infrastructure (connectivity) between Bunda and Serengeti District (website http://www.ict4rd.ne.tz). ICT4RD connected health (Manyamanyama and DDH), education (Bunda Day Sec School) and local government offices, providing them with Computers and Internet connectivity. There is a plan at the district council, connecting most of the offices. The district ICT officer reported that they are planning to provide connectivity that covers the whole district. ICT4RD has a network operating Center (NOC) hosted at Bunda Tanesco plant, and has a server that is hosting local mails within the network.

***(b) Access to Information (ATI) project*:**

This was funded by UNDP and SNV working in collaboration with PMORALG, LGAs and CSOs with the theme "*Localizing MDGs by improving information demand and supply in local governance*".

***(c) Mazingira Community Radio*:**

This is also known as "Mazingira FM". It is operating from Nyamswa village, broadcasting on societal issues as well as awareness information on HIV and AIDS. The actual coverage now

is reported as 80 Kilometers radius, covering as far as Bunda district, Serengeti district, Tarime district, Butiama district, Musoma town, and Busega district. The radio is currently operating 4 hours a day due to power problems at the transmitter. The programming schedule for Mazingira FM is attached as an Appendix 3.

4.2.4 Access and Usage

Access and usage of ICT in Bunda district was assessed by asking questions related to whether respondents have been participating in MAF project activities, and various kinds of ICT tools they use to access and disseminate information in their daily lives.

The analysis of responses indicated that about 89 percent use mobile phones as the most used communication tool.

Through the Focus Group Discussions, it was noted that public gatherings are the most effective communication means. These include meetings or rallies by the Member of parliament, meetings convened by the District Commissioner, Monthly meeting by extension officers; Market; as well as cinema van.

It was further noted that MAF has been providing basic training related to farming, poultry and fishery. Farmers visit the information center to consult with the extension officer. Students as well visit the Center to find out new information/research topics, while other stakeholders visit the center to watch TV (news) in the evenings.

4.2.5 Availability of Services

Since the AIRCs are still new, the available services are not yet well defined, communicated to beneficiaries, or experienced by the intended recipients.

Through the Focus Group Discussions (FGDs), it was noted that AIRCs offer basic training related to agriculture and livestock keeping. Awareness campaigns are also among the services offered by the Center through use of DVDs, banners, and other training materials. Since these Centers are also used as offices for the ward extension officer, other services offered at these centers are normal services offered by the extension services officer.

Figure 4.4: A banner in Mugeta on Business Farming

Some of the banners found in Mugeta AIRC relate to commercial agriculture benefits to farmer groups, and specific farming calender for all crops in the area as indicated in Figures 4.4, 4.5 and 4.6 respectively.

When responding to the question whether there was any chamges in the AIRC for the last one year, the analysis indiates that 57% of respondents agreed that new equipment was added or made available while 12.5% indicated that a new expert was recruited.

Figure 4.5: A banner at Mugeta on advantages for farmers joining business groups

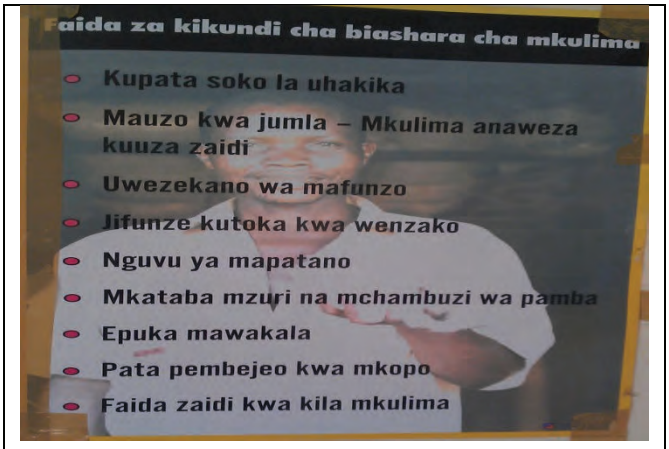


Figure 4.6: Farming Calender Displayed at Mugeta AIRC

4.2.6 Impact of ICT on people's livelihoods

Another broad aim of the consultations was to find out the impact of ICT services on the lives of ordinary people. Within this broad aim the following research questions were formulated and asked to respondents:

- *Do you think access to ICTs (mobile phone, TV, newspaper, etc) enhance your livelihood?*
- *For what purpose do you usually use ICT tools (Mobile Phone, TV, Radio etc)?*
- *How have ICTs mostly contributed to improving your living standards?*
- *Are ICT tools used to increase empowerment and voice of the rural poor in decisions that affect their lives?*
- *Which tools play a major role in increasing the empowerment and voice in rural areas?*

The analysis in this part covered a synthesis of quantitative data, observations, and qualitative data, gathered through questionnaires, and the focus group meetings. The impact is grouped as follows:

(a) Environmental protection

It was noted that two large Industries in Bunda District: the OLAM and BUNDA OIL, have started recycling their "*maji taka*" after awareness campaigns, hence stopped polluting lake Victoria as they used to direct the waste water into the lake. ICT played a great role in diseminating knowledge on the pollution.

(b) Education

It was noted in various focus group discussions that:

- Local people are using ICTs to access or respond to services such as those related to higher education institutions (make applications, or access selection results). Previously, they had to travel to nearby towns to access Internet

- Local people are changing ways of living after being exposed to TV broadcasts, e.g. on building modern houses, observing hygiene practises, etc.

- In Mugeta people watched a program on TV where a farmer from Manyara was able to harvest 30 bags of maize from one acre using modern farming practises. This was a shock (they are still not bealiving it) compared to their experience that normally they can get 2 bags, or 15 bags if one follows modern farming.

(c) Agriculture

It was noted that through ICT, they are able to check and compare market prices easily. Providing an example, they made reference to year 2013 when they were able to establish that cotton price provided by "Tanzania Cotton Board" was very low compared to world market price. Another impact is the introduction of Sunflower farming; educating and sensitization to farmers on the use of fertilizers, manure and other farm inputs after depleting the land of nutrients, during previous bad farming practices.

The analysis indicates that more than 69 percent of the respondents believe that the introduction of AIRCs has improved their livelihoods. The improvements are felt in agriculture, market price,information and personal communication.

4.2.7 Application of ICT in Agriculture

Already bulky SMS services have been introduced by MAF in the four AIRCs where the extension officer (AIRC Manager) is using this service to send out information to beneficiaries. There is no impact report yet as this service is still new, one week old before the writing of this report. A screen-shot of the login page is provided as Figure 4.7.

Figure 4.7: Bulky SMS login Page

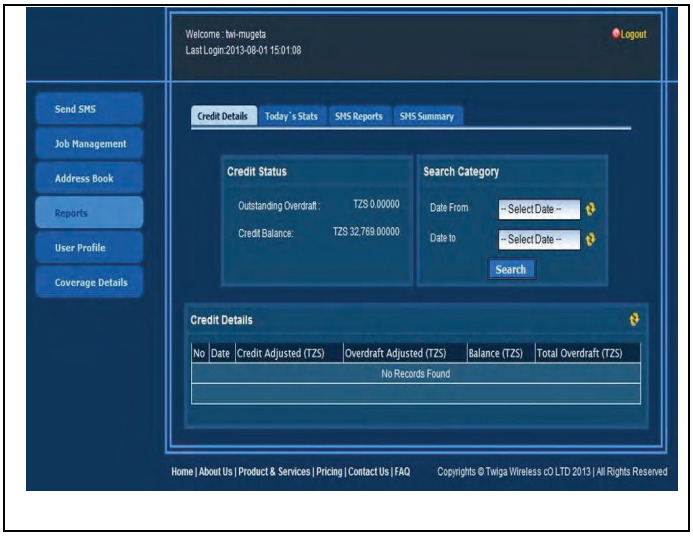
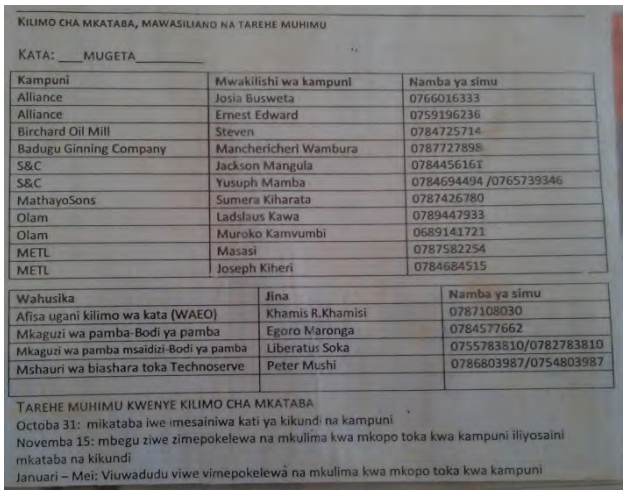


Figure 4.8: Contract Farming Form prepared by Bunda District Council



KILIMO CHA MKATABA, MAWASILIANO NA TAREHE MUHIMU

KATA: ___MUGETA_____

Kampuni	Mwakilishi wa kampuni	Namba ya simu
Alliance	Josia Busweta	0766016333
Alliance	Ernest Edward	0759196236
Birchard Oil Mill	Steven	0784725714
Badugu Ginning Company	Mancherichen Wambura	0787727898
S&C	Jackson Mangula	0784456161
S&C	Yusuph Mamba	0784694494 /0765739346
MathayoSons	Sumera Kiharata	0787426780
Olam	Ladslaus Kawa	0789447933
Olam	Muroko Kamvumbi	0689141721
METL	Masasi	0787582254
METL	Joseph Kiheri	0784684515

Wahusika	Jina	Namba ya simu
Afisa ugani kilimo wa kata (WAEO)	Khamis R.Khamisi	0787108030
Mkaguzi wa pamba-Bodi ya pamba	Egoro Maronga	0784577662
Mkaguzi wa pamba msaidizi-Bodi ya pamba	Liberatus Soka	0755783810/0782783810
Mshauri wa biashara toka Technoserve	Peter Mushi	0786803987/0754803987

TAREHE MUHIMU KWENYE KILIMO CHA MKATABA
Octoba 31: mikataba iwe imesainiwa kati ya kikundi na kampuni
Novemba 15: mbegu ziwe zimepokelewa na mkulima kwa mkopo toka kwa kampuni iliyosaini mkataba na kikundi
Januari – Mei: Viuwadudu viwe vimepokelewa na mkulima kwa mkopo toka kwa kampuni

Application of ICT in agriculture has been reported in the areas of:

- Searching for information related to agriculture;
- Access for market prices;
- Dissemination of agricultural related information;
- Packaging of agricultural information for ease of sharing and dissemination.

It was also noted by the District Commissioner that the famous cotton production and marketing information system known as Pambanet - http://www.pambanet.com/ (implemented by TechnoServe) was adapted from their contract farming initiative.

4.3 Knowledge Management

4.3.1 Importance and Findings

Knowledge Management (KM) is a key to effective scaling up. As such, its role in operational work needs to be strengthened, especially in support of analytical work and policy dialogue (Lin *et al*, 2010). The triad "innovation, learning scaling up" is the key to success.

The KM part of the study sought to audit available and missing information and knowledge to support poverty reduction strategies, enhance social protection and environmental management in the selected wards and villages of Bunda district.

Despite concerted commitment and efforts by the government of Tanzania to transform rural areas through MDG localization projects and MDG Acceleration Framework (MAF) initiatives, information poverty remains a largely rural phenomenon with the rural communities in the country failing to enjoy the significant improvements in access to information. The established community resource centres in Bunda district have yet to yield results that meet expectations of the poor residing in those rural areas.

The findings of this study show that there are positive and promising indications from the establishment of the rural resource centers but the available information and knowledge in the surveyed wards is not sufficient to bring high and rapid impact on rural development. Furthermore, the findings indicate that the community resource centers are equipped with limited infrastructures and resources. Also, lack of information experts and limited space reduce the effectiveness and efficiency of the centers. In fact, most of the centres are manned by non-ICT professionals, neither trained in ICT nor in information organisation, retrieval and user studies. Accordingly, all these centres lack most relevant information for its intended users. Consequently, the access to, use, exchange and sharing information and knowledge on poverty reduction, social protection and environment is still problematic. Indeed, it is only through provision of relevant, appropriate, and timely information and knowledge in a user-friendly package that makes a difference for the rural dwellers not only in their decision-making but also in the socio-economic interaction and transaction.

4.3.2 Information Sources and Outlets

At the village level, information and knowledge sources are of three categories: external sources, intermediary services, and local networks. For example, in Mugeta, Kisorya and Kibara wards, there are a number of formal organisations mentioned in respect of information and knowledge source: PCI, VI Agro-forestry, FINCA, and NMB. Also, the resource centre facilities in Mugeta were found to be more active than those in Kibara and Kisorya wards.

Kibara Community Resource Centre is officially open but not as active as the one in Mugeta whereas the one in Kisorya had yet to be officially opened. In Mugeta, the wall of the centre is used as notice-board for posters and leaflets with simple messages whereas the Kisorya village office wall was used to display different kinds of information. The information and knowledge posted their includes agricultural, health and environmental information. Less formally, the open market (*gulio*), clubs and shops were seen as a focal point for information sharing among locals.

4.3.3 Format and Effectiveness of the Channels

The villages visited receive information and knowledge in different kinds of formats. The results from the survey indicate that the majority (78.6 per cent) of the respondents confirmed that mobile phone is the most popular means used to share and disseminate different kinds of information in their villages. Further, about 75 per cent of respondents had access to radio programmes, 66.1 per cent, to TV/video and 62.5 per cent to leaflets. Most of the respondents in Mugeta village indicated that they usually accessed TV/Video programmes at the Community Resource Centre and few in their homes and other public places. In the same vein, the participants in Focus Group Discussions in all the villages surveyed mentioned print formats (e.g. leaflets, brochures, posters), electronic (TV/Video, radio, mobile phone) and word of mouth as the main format used to disseminate and share information.

Furthermore, it was noted that newspapers, books and films are not commonly used as information and knowledge sources. Generally, access to books and newspapers in the villages surveyed is rare. Although efforts have been made by MAF to introduce Community Resource Centres, some of the the information such as leaflets and brochures are not retrievable in Mugeta and Kisorya. The question on the effectiveness of the channels/media yielded the results presented in Table 4.1.

Table 1.1: Effectiveness of Media/Channels in Bunda District

Types of channels/media	Very effective	%	Effective	%	Not effective	%
Print	18	32.1	9	16.1	29	51.8
Films	12	21.4	5	8.9	39	69.6
TV/Video	20	35.7	17	30.4	19	33.9
Audio/cassettes	5	8.9	3	5.4	48	85.7
Radio	31	55.4	18	32.1	7	12.5
Mobile phones	40	71.4	9	16.1	8	8
Demonstrations	9	16.1	3	5.4	44	44
Group discussions	13	23.2	9	16.1	34	34
Internet communications	1	1.8	4	7.1	51	51
Village meetings	22	39.3	8	14.3	26	26

Traditional media	10	17.9	7	12.5	39	39
Expert visits	15	26.8	6	10.7	35	35
Community resource center	14	25	7	12.5	35	35
Notice board	12	21.4	8	14.3	36	36
Word of mouth	23	41.1	19	33.9	14	14

Source: field survey

The data presented in Table 4.1 suggests that radio, mobile phones, TV/video, word of mouth are effective media in information and knowledge dissemination and sharing. Radio and internet were seen to be effective media in Bunda Town. These are followed by village meetings, print media, expert visits, Community Resource Centres (Mugeta and Kibara), notice-boards in village offices (Mugeta and Kisorya) and group discussions. At district government level, it was reported that the important channels for exchanging information and knowledge were through meetings and monthly reporting from extension officers. On the other hand, traditional media, films, demonstrations, audio cassettes, internet communications were not considered as effective channels in the villages visited. The kind of information channelled through these media differs. In short, the findings signify that there is a dialectical relationship between access to different kind of media and effectiveness of such media.

From FGD with District Council heads of departments, it emerged that mobile phone, radio programmes (e.g. *Radio Mazingira*), TV, leaflets, cinema, forms used for monthly reporting were the main media and channels used to disseminate and share information with the villagers. Also, internet was used to exchange information and knowledge within the district offices. The supporting infrastructure for internet connectivity and accessibility and usability included Wireless (WLAN) network, and Optic Fibre. Some participants pointed out that their mobile phones are capable of accessing internet.

4.3.4 Ownership of ICT Facilities to Accessing Information and Knowledge

Radio was the most widespread mass media in the developing world[4]. The findings of our study revealed that 69.6 per cent of the 56 respondents in Mugeta, Kibara and Kisorya wards had radios in their homes. This finding signifies that most of the households in the villages surveyed owned and, therefore, had access to radio programmes. In fact, the radio also helps to overcome the problem of illiteracy that prevents many rural dwellers from making use of other literacy-based media sources. The challenge of depending on radio programmes for poverty reduction, social protection and environment is that the kind of information and knowledge broadcast to the target audience relies on the broadcaster's anticipation of urgent information and knowledge needs of the rural communities, which often does not mean timely and appropriate information.

[4] Myers, M. (2010). "Why radio matters: making the case for radio as a medium for development". Commissioned by Developing Radio Partners.

Table 4.2 shows types of radio programmes accessed and listened to by the audience in the visited villages.

Table 4.2: Radio Programmes accessed and listened to in Bunda District Villages

Radio programmes	Frequency	Percent
News	32	57.1
Entertainment and sports	30	53.6
Agriculture	22	39.3
Health	17	30.4
Religious	13	23.2
Entrepreneurship	13	23.2
Business	12	21.4
Education	10	17.9
Environment	8	14.3
Legal	3	5.4

Source: Field Survey

In all, the data presented in Table 4.2 reveal that the majority of respondents had access to and listened to news, entertainment and sports programmes; followed by agriculture and health information programmes. Other radio programmes mentioned by respondents covered religious, entrepreneurship, business, education, environment and legal issues. In general, the findings indicate that inhabitants of Mugeta, Kibara and Kisorya wards had poor access to information-rich and appropriate knowledge related to poverty reduction, social protection and environment through the radio. However, *Radio Mazingira* was appreciated by different respondents who identified *'Zinduka'* as one of their favourite programmes which provided them with information on seeds and markets.

4.3.5 Ownership of Mobile Phone, Frequency of Use and Information Accessed

In terms of mobile phone ownership, most of the respondents (89.3 per cent) in the villages surveyed owned a mobile phone set. Only 10.7 per cent indicated that they did not own a mobile phone set. In terms of use, about 64.3 per cent of the respondents used their mobile phones frequently to access information from other people and other information and services. These were followed by those who used it occasionally (25 per cent). Figure 4.9 below indicates the frequency use of mobile phone:

Figure 4.9: Frequency of Using Mobile Phones in Bunda district villages

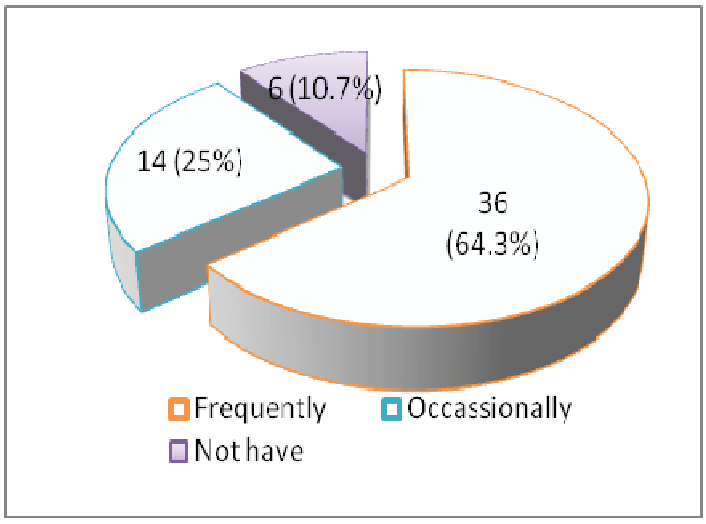
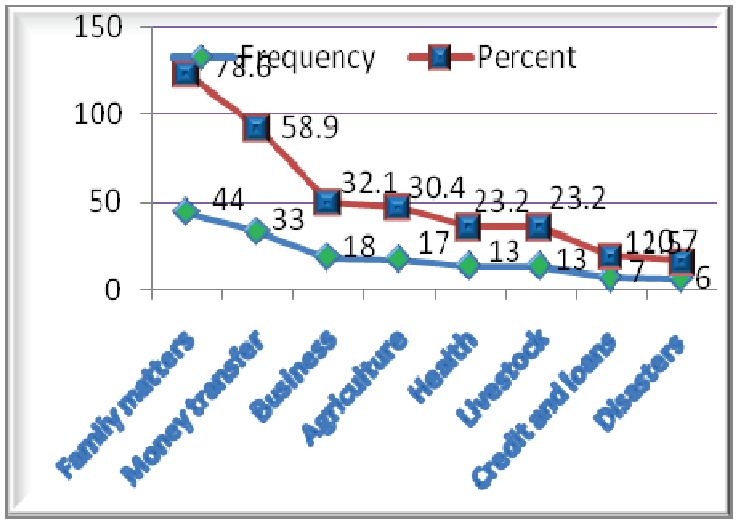


Figure 4.10: Type of Information Exchanged through Mobile Phone in Bunda District



In general, high frequent usage of mobile phones among rural dwellers can be attributed to prices of mobile phones which continue declining, especially for the low-end products that rural communities can afford. The question of affordability has pushed the acquisition of mobile phones on the top media wish-list of the rural dwellers in Tanzania[5]. Other factors that push the use of mobile phones include network coverage, alternative source of energy, flexibility of application, speed in accessing information and time saving. This raises the question of what kind of information and knowledge is exchanged through the mobile phones. Figure 4.10 presents the type of information and knowledge often exchanged through mobile phone.

[5] Mwantimwa, K. (2012). The Use of Pull Information Mode to Support Poverty Reduction Programmes in Rural Tanzania. A Case of Monduli and Bagamoyo Districts

Figure 4.10 shows that most of the information the villagers exchange has to do with family matters and money transfer services, issues which have a direct link to their daily lives. Other uses include business information (such as market price information), agriculture, health, livestock, religious, credit and loans, and occurrences of disaster. Most of this information is exchanged through local networks. On the whole, however, the mobile phone is not effectively used for transacting with local governments.

Mobile phone users in the areas visited also received information on different service promotions from mobile phone service providers. The overall findings signify that rural communities in Mugeta, Kibara and Kisorya were found to have access to different kinds of information and knowledge including development-related information and knowledge available through their mobile phones. For example, during the FGD session with ward and village leaders, some of the participants pointed out that they used their mobile phones to arrange ward and village meetings. Furthermore, mobile phone was used to arrange for transport, report some events such as occurrence of wildfire and to communicate with health centre workers. On the whole, the use of mobile phone among the villagers in Mugeta, Kibara and Kisorya has proven to enhance socio-economic activities and enrich the lives of the villagers.

4.3.6 Preferred Places for Information and Knowledge Exchange

There are different places for disseminating and exchanging information and knowledge on poverty reduction, social protection and environment. Respondents were asked to identify their preferred places for information and knowledge exchange in the villages visited. The scales used were: “Most Preferred” (MP); “Preferred” (P), “Least Preferred” (LP) and “Not Preferred” (NP). Table 4.3 presents their responses:

Table 4.3: Preferred Place for Information and Knowledge Exchange in Bunda District

Place	MP	%	P	%	LP	%	NP	%
Worship place	23	41.1	21	37.5	10	17.9	2	3.6
Market	31	55.4	17	30.4	8	14.3	0	0
Shop	22	39.3	24	42.9	8	14.3	2	3.6
Club/Pub	12	21.4	13	23.2	21	37.5	10	17.9
Health center	18	32.1	31	55.4	6	10.7	1	1.8
Community resource center	26	46.4	22	39.3	6	10.7	1	1.8
Village office	27	48.2	17	30.4	10	17.9	1	1.8
School	31	55.4	18	32.1	6	10.7	1	1.8

Source: field Survey

As Table 4.3 shows, the majority of respondents in the three wards identified the market and schools as the most preferred places for information and knowledge dissemination and exchange. These are followed by village office, community resource centre, worship places, shops and health centres. Clubs/pubs were not preferred by a noticeable percentage of the respondents as appropriate places for information and knowledge exchange and dissemination. Understandably, they did not associate these social meeting places with ideal places for sharing serious information. It was also revealed that the market place is an appropriate place for disseminating information and knowledge on HIV/AIDS. In fact, the most preferred and preferred venues are those where villagers in Mugeta, Kibara and Kisorya frequently visit. Although different places were identified, the production of information and knowledge for dissemination in these places is still low. Indeed, there is a weak linkage between the information and knowledge sources, and consumers.

4.3.7 Communicating Information and Knowledge

(a) Communication with Government

The flow of information and knowledge in the villages studied was complex. The findings suggested that the majority of respondents (64.3 per cent) communicated their information and knowledge needs directly whereas the rest did so indirectly. A noticeable (35.7 per cent) did not communicate their needs to the government. Results from FGD revealed that the majority of respondents frequently contacted information intermediaries such as extension officers, health centre workers, executive officers, community workers, traditional, and religious leaders. This also raises the question as to which channels the community members used to communicate their needs. In all, the majority of respondents (57.1 per cent) pointed out that the village meeting place is the venue used for communicating their needs to the government. Other respondents cited paying physical visits to the village offices (39.3 per cent), Community Resource Centre (33.9 per cent), officer's visit, mobile phones (21.4 per cent), and through representatives (16.1 per cent).

In contrast, some of the respondents lamented that information and knowledge flow in their villages largely depended on the infamous top-down approach. The villagers found the top-down approach a hindrance to accessibility and usability of information and knowledge on poverty reduction, social protection and environmental issues. In general, ineffective two-way information and knowledge flow between and among researchers, villagers, extension workers and other entities in rural development undermines the transfer process of vital information and knowledge on innovation and modern farming and livestock rearing. Consequently, rural communities in the villages surveyed remain at the bottom of the ladder, and hence rarely get the information and knowledge they need. Moreover, they were insufficiently involved in deciding and planning extension programmes suitable for their own development. Indeed, this approach makes rural dwellers more passive communities and recipients even on issues affecting their lives.

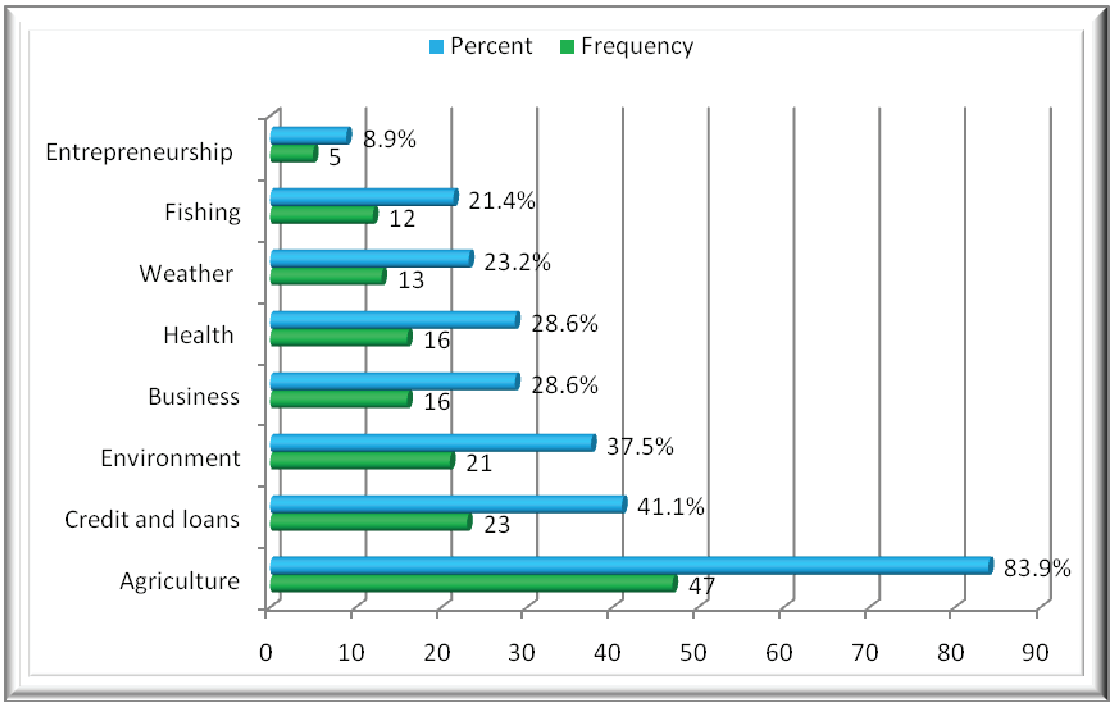
(b) Communication of ssuccess stories among the villagers

The findings indicate that the majority of respondents (76 per cent) did not communicate their successes. Only 23.2 per cent did communicate their successes. The respondents were further asked to indicate how often they communicated such information. The findings show that only 8.9 per cent communicated frequently, and 12.5 per cent did so occasionally. The majority of villagers (76 per cent) had never communicated their successes. The reason behind this anomaly could be fear of the repercussion of such disclosure, which might be misconstrued as a boast, no successful story to communicate and superstitious beliefs as well as "piracy". On the whole, this finding reveals that sharing information and knowledge on successes among the villagers, extension, executive officers and other groups in Mugeta, Kibara and Kisorya has yet to evolve into a living culture.

4.3.8 Information and Knowledge Gaps to be Filled

The provision of relevant development information and knowledge on poverty reduction, social protection and environment is deemed essential in the identification and analysis of the information and knowledge wants and needs of such target communities. In this regard, the respondents were asked to identify their information and knowledge needs. Figure 4.11 presents the needs.

Figure 4.11: Information and Knowledge Gaps to be Filled



Villagers in the study areas indicated that they had experienced a need for information to solve various development-related problems. Agriculture dominated the needs (83.9 per cent).The rural communities in Mugeta, Kibara and Kisorya are in great demand of

information on modern farming techniques (e.g. new varieties of seeds, pesticides, diseases (epidemic) and incentives) and modern livestock-keeping techniques (e.g. disease and treatment) in order to increase production. They also need information and knowledge on access to soft loans. In fact, access to credit and loans is one of the challenges despite the mushrooming number of financial institutions in Tanzania. Furthermore, respondents also cited environmental information (types of trees that are drought-resistant) to curb the threat of severe environment destruction. Other kinds of information in demand include business (e.g. market prices), health (e.g. care services for the people with HIV/AIDS), weather, fishing and entrepreneurship.

Similarly, interviews with district functionaries suggested that the people in Bunda need information related to:

- Environment (pollution, tree planting, protection of water sources). For example, all producers (e.g. farmers) and processors (e.g. owners of Bunda Oil and ORAM) should have knowledge on environmental issues;
- Education (availability of colleges and universities);
- Awareness on different development projects such as MAF and TASAF projects;
- Market price of fish and cotton in local and international markets.

In this regard, the following information was recommended to be made available to the villagers:

- Knowledge on the use of natural resources and the ecosystem;
- Diverse knowledge on production: fish and bee-keeping, and sweet potatoes (*viazi lishe*);
- Knowledge on rain water harvesting.

In this regard, it is clearer that there are many information and knowledge gaps in the provision of timely, retrieval and appropriate information among the target communities that needs to be filled. This finding also implies that access to, use of and sharing of information in the wards and villages surveyed remain problematic. Indeed, rural communities in the villages surveyed are not only income-poor but also information-poor.

4.3.9 Status of Community Resource Centre

(a) Awareness on the existence of community resource center

Findings from survey revealed that the majority of respondents (85.7 per cent) were aware of the existence of the Community Resource Centres in their villages. Only 14.3 per cent indicated that they were not aware of its existence. This indicates that deliberate efforts have been made to raise awareness among the villagers on the existence of the resource centre. The majority of those who were aware of the centres are from Mugeta and Kibara

wards. This might be attributed to the resource centres in these two villages being officially opened and functioning while the one in Kisorya was still under construction.

The frequency of visiting the Community Resource Centre is shown in Figure 4.12. About 71.4 per cent of the respondents indicated that they had visited the resource centre. A noticeable per cent of these (37.5 per cent) had visited the resource centre once to twice a month, 21.4 per cent did so frequently and 12.5 per cent did so once a week. In all, the findings signify that the majority of the respondents who visited (49.6 per cent) did not do so frequently. This is attributed to inadequate information on resources to access and use, distance and shortage of facilities. The villagers were further probed as to why they did not visit the centre in their villages. Figure 4.13 presents the reasons for not visiting the resource centre.

Figure 4.12: Frequency of Visiting CRC in Bunda District

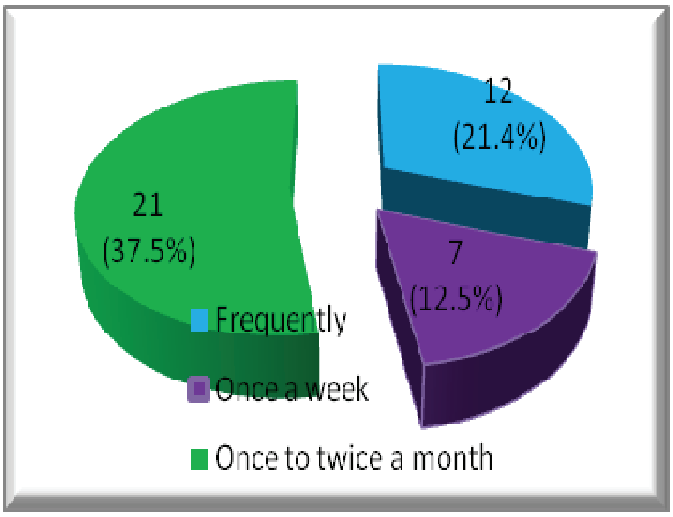
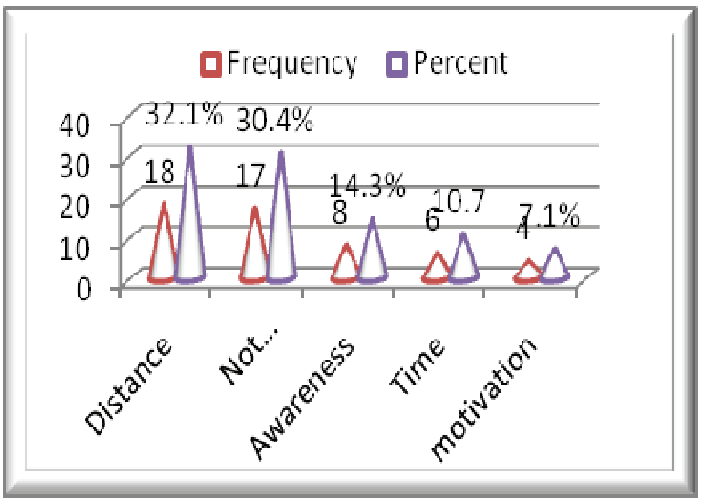


Figure 4.13: Reasons for Not Visiting Resource Centre



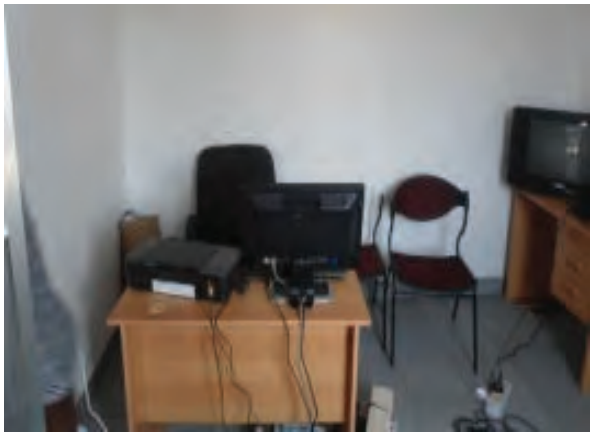
The information shown in Figure 4.13 reveals that distance was the barrier to visiting the centre (32.1 per cent of respondents) followed by non- functioning (30.4 per cent). Respondents in Kisorya pointed out that the resource centre had not been officially opened and to start functioning. Also, there was lack of awareness on the existence of the resource centre in the villages. FGD participants in Kisorya attributed the lack of awareness to lack of transparency in the dissemination of development information and knowledge in their villages. In the same vein, time constraint was also seen as a barrier to visiting the resource centre. Lack of motivation was also identified as another barrier to visiting and using the resource centre.

(b) Availability of Facilities and Resources at the center

Table 4.4: Facilities and Resources Available in the CRCs

Type of facilities	Mugeta	Kibara	Kisorya	Total
TV	1	1	1	3
Computer	1	1	1	3
Modem	1	1	1	3
Printer	1	1	1	3
DVD player	1	1	1	3
Tables	2	5	5	12
Chairs	3	5	5	13
Satellite Dish	1	1	1	3

Figure 4.14: ICT Facilities in Kibara Village



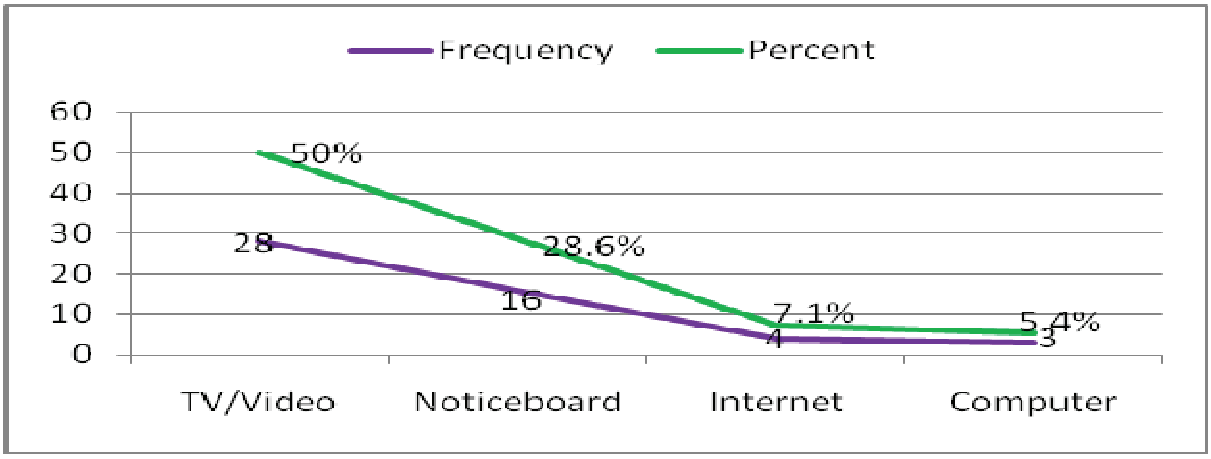
Access to and availability of facilities and resources in the established Community Resource Centre (CRC) has a bearing on their usage. This study also sought to establish the types of facilities available at the CRCs. Table 4.4 presents the findings on this aspect while Figure 4.14 shows the type of ICT facilities available in the CRCs. Table 4.4 shows differences in

availability of facilities among the CRCs. Given the target beneficiaries, these are insufficient to cater for the demand. Access to computers by villagers is often limited. However, it is encouraging to note that in all the three wards MAF plans to distribute mobile phones to farmer groups in order to narrow the gap.

(c) Facilities Used at the Resource Centre

Respondents were probed on the usability of the available facilities and resources in the resource centre. About 50 per cent of the respondents indicated having accessed TV/video programmes at the centre. A further 28.6 per cent indicated having accessed information on the wall notice-board of the centre. However, at all village offices in the villages visited there was no modern notice-board. The notice-board posts are displayed on the walls of different buildings. Internet and computers are hardly used by the villagers. It was pointed out that computer and internet were mainly used by the extension officers (see Figure 4.15).

Figure 4.15: Facilities and Resources Accessed at CRCs



The limited use of the internet and computer by villagers in Mugeta, Kibara and Kisorya villages is probably because MAF projects are still in their infancy stage of setting up the resource centre and its facilities. The low literacy rate and awareness or knowledge could also explain this trend.

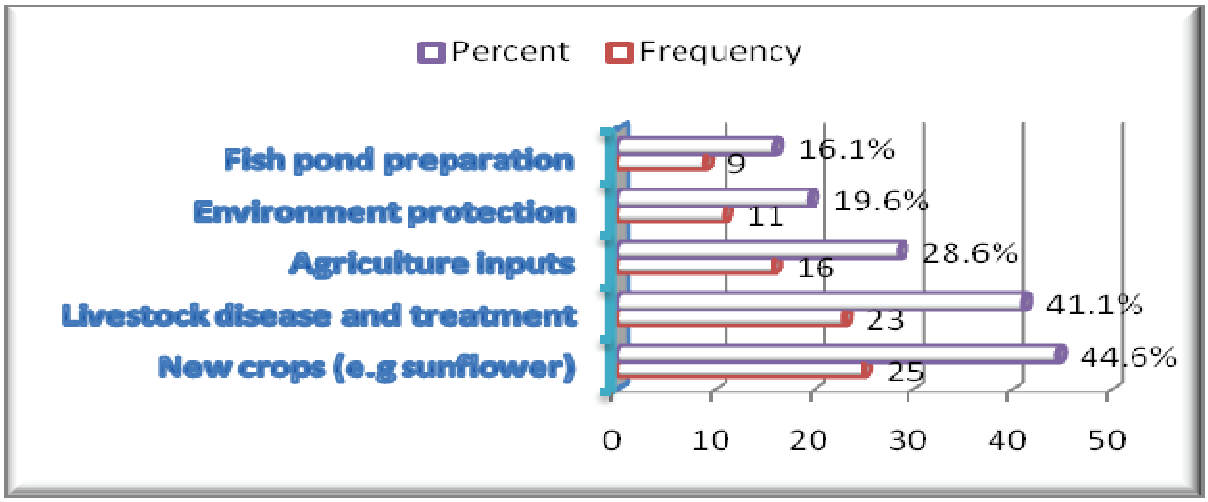
Respondents were further asked to identify what works well in the Community Resource Centres. About 46.4 per cent of the respondents from Mugeta and Kibara wards identified TV/video shows as one of the facilities and programme that worked well in their respective resource centres. This is followed by system of exchanging information and knowledge with village officers. Also, respondents indicated that notice-board was also serving well as channel for displaying different kinds of information and knowledge to the villages. It was observed that the resource centres are becoming the focal points for exchanging information and knowledge largely related to farming and livestock-keeping.

(d) Usefulness of Information and Knowledge in Resource Centers

Despite the shortcomings at CRCs, respondents indicated that there are many useful types of information disseminated and exchanged through the centres especially in Mugeta and Kibara villages. About 44.6 per cent of the respondents pointed out that information and knowledge on new crops such as sunflower and new varieties of paddy was disseminated by the extension officers through the centre. Participants in the FGDs in Mugeta pointed out that their extension officer was innovative and introduced demonstration plots for sunflower in two villages. Moreover, they stressed that their extension officer provided different forms of advice on types of species and fertilisers.

It was encouraging to learn that information and knowledge on livestock disease and its treatment was found in print format (posters) displayed on the wall. For example, piglet and goats disease posters were displayed on the resource centre walls. Information on agriculture inputs, environment and fish pond preparation techniques were accessible through extension services. Figure 4.16 shows the kind of information available through the resource centre that the respondents identified as useful.

Figure 4.16: Useful Information and Knowledge Available at the Resource Centers



From Figure 4.16 it is evident that information that is of relevance is readily available. Participants in FGD in Mugeta also acknowledged that there are different kinds of information that they accessed through the Ward Agricultural Extension Officer (WAEO) and used the information in their undertakings. These information included availability of seeds, instructions on planting of crops, weeding, types of diseases and treatment. Villagers in Mugeta, Sanzate, Rakana and Nyang'aranga villages have registered better results with respect to adopting new knowledge on growing sunflower. As attested by respondent *"one can have a lot of money without knowing what to do with it. But if one has information and knowledge that individual can invest in productive activities. Our centre helps us".*

This statement underscores the importance of information and knowledge. Indeed, appropriate and relevant information and knowledge that are in an accessible format and channels are important in improving livelihoods. Further discussions with respondents indicated existence of indigenous knowledge (IK) that the villagers have been using for generations. For example, in Mugeta local knowledge was used in bee-keeping, treating animals and storing seed grains. This improved livelihoods as well.

(e) Awareness on Information and Resources Received by the Centre

The highest proportion of respondents, 51.8 per cent became aware of the facilities only after paying a visit to the resource centre; followed by those who received information from other villagers and officers through word of mouth and at village meetings. A few other respondents become aware through mobile phone communication with relatives and friends and expert visits.

(f) Success stories as a result of using information from Community Resource Centre

Respondents were asked to provide attestations of success stories resulting from their use of the Community Resource Centre. About 28.6 per cent adopted new types of crops. For example, in Mugeta sunflower crops have been adopted by different farmers; in Kibara and Kisorya a new variety of paddy has been cultivated. Other respondents have started to use fertiliser and manure which they had formerly not done.

Other respondents pointed out that they have also participated in tree-planting after receiving information from the centre. This was more common in Kisorya village. Also, poultry keeping and preparation of fish ponds were observed in all villages as some of the economic ventures sprouting as a result of using information from the CRC.

Figure 4.17 presents the frequency of the adoption of new and innovative ideas after using the resource centre.

Figure 4.1: Results of Using Resource Centres

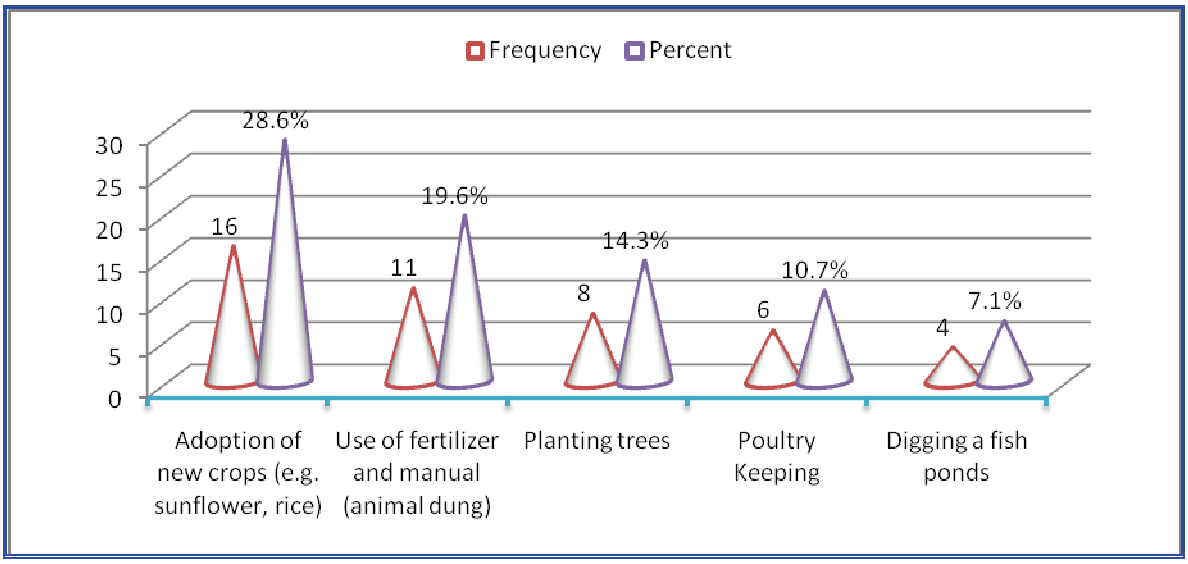


Figure 4.18 shows examples of applying the knowledge gained from CRCs

Figure 4.18: Chicken Rearing in Kibara Village as a Result of Accessing CRC information

District functionaries summarized the significant changes that have taken place in the district as a result of information accessed through CRCs:

> *"Farmers' acceptance to grow sunflower crop, new variety of paddy and millet should be credited to Community Resource Centres and MAF Project at large. In year 2013/2014, there will be more success in the production of the newly-introduced crops, especially after the installation of sunflower processing mills"*

Further, the district officials outlined the positive developments associated with the resource centre in the following areas:

- Through use of ICTs, we managed to have statistics for cotton crop production;
- The mindset of the farmers on sunflower production is changing; they are deciding to adopt new ways of farming;
- Community resource centres enhance information-sharing in our villages.

Participants of FGD in Mugeta attested thus:

> *"Sunflower is a newly-introduced crop in our village. The acceptance rate is very high. Despite its recent introduction, the crop has produced promising results. The installation of sunflower processing machines is in the pipeline... the market for sunflower products are not yet identified. The accelerating factors include information from the resource centre. Sunflower is fully accepted".*

These attestations signify that proper use of the Community Resource Centres and the agricultural extension services can bring about a positive socio-economic impact on the rural dwellers in Bunda with far-reaching improvements in their livelihoods and poverty reduction in general. The study also found that formation of farmers' groups in the villages surveyed is also well-appreciated. For example, there are various groups which have opted for poultry keeping, while others fish farming. Table 4.5 summarizes the findings.

Table 4.5: Summary of CRC Activities and Impact in Bunda District

Community resource center	Status and level of acceptance	MAF Project	Information & knowledge in the center and around	Channels and facilities	Information & Knowledge gaps	Indicators for success
Mugeta	-Established and functioning Managed by extension officer	-Chicken rearing -Fish keeping -Paddy cultivation -Sunflower	-Seasonal calendar -Cotton crops -Business agriculture Detection of diseases -Steps for cultivating cotton -Sunflower production statistics -Be keeping (IK)	-Noticeboard (walls) in resource center -TV/Video -Computer connected to modem -Mobile phones -Extension officers -Word of mouth -Meeting	-Social protection -Marketing - Funding sources -Access to credit and loans education -Agriculture technology -Environment protection	1. Sunflower cultivation (estimated harvest: 75 tons, area: 30 acres, number farmers: 80 2.Presence of fish ponds (traditional)
Kisorya	-Established: not functioning -No staff to manage	-Chicken rearing -Fish keeping -Paddy cultivation -Sunflower	-Environment -Health info (e.g. HIV/AIDS) -TASAF information -Agriculture	-Posters in Noticeboard (wall) in village office	-Fishing information -Treatment of cassava disease -Irrigation techniques -Chicken rearing techniques -Marketing -Agriculture inputs	1. Production of rice increased 2. Interest to keep chicken
Kibara	-Established and fuctioning -Managed by extension officer	-Chicken rearing -Fish keeping -Paddy cultivation -Sunflower	-Paddy farming -Fish ponds making -Chicken rearing	-TVs/Video -Mobile phones -Meeting	-Marketing -Funding sources -Fishing -Social protection -Environment protection	1. Availability of incubator 2. Chicken rearing 3. Modern fish ponds 4. Paddy cultivation increased 5. Formation of farmer groups
Bunda Town	-Established & Functioning. -Managed by MAF project coordinator	-Info & knowledge dissemination, service provision through ICTs and other format -Support to the community resource centers	-Government publications: health & agriculture (e.g. document on Kilimo Kwanza) -Research report (e.g. by REPOA, EFD, UNDP)	-Internet -Mobile phone -Printed: leaflets, magazine, reports	- Agriculture (e.g. sunflower, paddy farming -Fish keeping -Chicken rearing -Social protection	1. Availability of computer with internet, printing services 2. Some government and other research publications can be accessed

Source: field survey

4.3.10 Changes in social economic conditions and livelihoods

Among the objective of this study were to establish if there have been improvements in social-economic condition and livelihood of the people as a result of implementing MDG localization projects. To see this we asked the respondents to comment as to how their lives have changed as a results of the implemented projects, both socially and economically.

(a) MAF projects: Paddy, Sunflower and Livestock (Chicken)

With regard to crop interventions, there has been great enthusiasm among farmers to be engaged in sunflower farming, especially after the arrival of 2 sunflower processing machines. Many farmers see this as a new awakening for sunflower production in the district as it stands to add greater value to their produce in the future. The processing machines are being installed at Mugeta village where not only have farmers shown great interest in farming the crop but it is also a very productive area with a long history of farming the crop. The second processing machine is being installed at Kibara village though it was initially planned to be placed at Bunda town. Both machines were supposed to have been operational by now but due to some political delays the one at Mugeta was installed in June. And because of this delay, both machines missed the harvesting season for sunflower (June) and therefore are yet to be operated. Currently, farmers undertake processing of their sunflower at the near village centre of Nata which is approximately 15km away.

Apart from the predominant sunflower farming, farmers at Mugeta are also involved in livestock keeping (chicken), upland rice and fishing. Six villages are involved in the project, namely: Tingirima, Kyandege, Nyang'aranga, Mugeta, Sanzate and Rakana. Sunflower farming and other intervention crops have been successful in most of these villages with the exception of Tingirima and Kyandege villages which have been affected by poor and unstable climate that has led to drought (no rains) and flooding (too much rains) which has subsequently affected agricultural production in the areas. It was only 3 years ago that farmers at Nyang'aranga had huge sunflower harvests but unfortunately they failed to secure a market and as a result much of the harvested crop was spoilt. Each farmer has a plot of approximately 2-3 acres of land that is being cultivated. In fact, this was the requirement of getting seeds subsidies from the project. Seeds are mainly hybrid e.g. Rekon and an acre of sunflower produces from 450-1050 litres of oil, depending on the spacing of plants and diseases (*Funza wa Pamba*). An acre produces 1.5 tonnes of sunflower. One farmer, whose farm was used as a successful demonstration plot, acknowledged that sunflower was much easier to manage and more profitable to farmers than say cotton. For instance, 20 litres of sunflower oil is sold at TZS60,000 while a bag of cotton hardly fetches that price at the market.

In terms of crop interventions in Kisorya, 4 villages are involved in the MAF project, namely: Kisorya, Nampangara, Nambudi and Masahunga. At Kisorya, the main economic activity is

fishing and is mainly undertaken by the youths while the elderly and women are engaged in agriculture. To many farmers in Kisorya ward, morale is high with livestock keeping and in particular chicken. Many farmers see sunflower as a relatively new crop though they have shown interest to farm it. Their main concern with sunflower farming is that seeds are purchased from Bunda town and that this is too far for them. Even the market for sunflower is in Bunda town. Regardless of these challenges, many farmers see sunflower farming as less taxing on their labour and finance, resistant to drought (which is a problem in Kisorya though along the shores of Lake Victoria) and profit making is quick (takes 90 days to harvest). Many farmers in Kisorya currently farm upland rice and *mtama* but also poultry keeping (chicken) on top of fishing. Seeds for rice are mainly from Shinyanga although farmers have shown interest for seeds from Kyela. An acre of rice produces 15 bags and a bag can be sold between TZS50,000 and60,000. Most farmer's sell their rice to customers straight from their farms i.e. there is no specific market.

Box 4.1 Breaking news: Bunda farmers obtain sunflower processing mills (*Mwananchi* Newspaper, 10.09.201

Farmers in Bunda district have obtained three sunflower processing mills which have been installed in three villages (Bunda, Kibara and Mugeta). The mills were delivered by Third Millennium Initiative Project (TMPI). Farmers expressed motivation for increasing production of sunflower now that there is processing facility. Not long ago these farmers had lost hope for lack of assured markets. At the time of field survey, this first sunflower processing mill was being relocated at Mugeta village.

(b) ATI and WAIRCs

The resource centre at Mugeta is up and running and farmers have started making use of it. Most if not all farmers that we interviewed were aware of it being opened to the public. The way forward now should be to ensure that farmers use the centre for the identified purpose and not as a recreation facility. In Kisorya, efforts should be geared towards making sure

that the official launch of the centre there is done as soon as possible so that farmers can start benefiting from it. For Kibara the relocation should be effected soon and additional equipment should be provided.

(c) TASAF

As noted earlier, the road infrastructure of Bunda is changing as many of its roads are under construction which will bring greater efficiency in the transportation of crops from the hinterland farms and to the market and inputs to the farms/localities. The roads will also reduce the current cost of transportation as well as the stress that can be encountered when goods are transported on gravel.

Through the PFM projects, the district council has just recently given impetus to the environmental department to start programmes that aim at managing and preserving the environment. It has started an education programme of visiting all residents of Bunda town who produce wastage in order to educate them before the environmental laws take their course. There are also in the process of revisiting the Environmental Act (2004) law that punishes polluters/offenders with a penalty fee of Tsh.1,000,000. In Bunda, this penalty is unrealistic as majority of offenders of the law are poor. The plan is to reduce the penalty to Tsh.50,000 only. This was effected from July 2013 and the response is promising.

5.0 CHALLENGES AND PROPOSED INTERVENTIONS

5.1 MDG localization Projects and Environment

Despite the success documented in the preceding part, these projects faced with challenges in their implementation and execution.

(a) MAF

- Inadequate budget. The budget allocated was small as compared to the expected results of the project.
- Implementation time frame was too short. This was a three month from October to December 2012. Given the nature of strategic interventions they needed more time to be able to measure the impact. Due to some reasons the implementation was delayed.
- Market for some of the strategic intervention crops has been a problem. Upland rice for example faces competition from other types of rice which are commonly known to consumers. It should be noted that, this is a newly introduced type, it will therefore take time for consumers getting used to it.
- Fish feeding was a problem in fish sub-sector. The problem here was not affordability but rather the availability. Farmers argued that they can afford buying fish food should it be available in the market. They instead reverted to using local fish feeding which is not nutritious.

(b) ATI

- The fund was channelled through the district council, which were the subject of the bureaucratic procedures which delayed some activities.
- There was also a delay of disbursement of funds from the Donors (UNDP and SNV)

(c) TASAF

- SP projects require 20% of the projects to be raised from the community which sometimes become very difficult for them to afford given their income. The TASAF guideline is strict to this clause that until that amount is raised the project should not start. This resulted into the delay of some projects.
- Sometimes due to budget constraints not all the projects proposed can be funded in time. This gives the implication that sometimes demands for these projects exceed the supply of fund.
- In its execution the projects used experts from the council who sometimes were unavailable and sometimes unwilling to participate.

- Leader's capacity at the lower level is also a challenge. The leader's selection at the community level is based on how someone is famous and not intellectual ability (just reading and write). Therefore it is possible to face some of them who cannot even write meeting minutes and to a large extent this makes communication difficult.

(d) ICT

- When responding the question on challenges encountered in daily life while using ICT, the analysis indicates that the most challenge is cost associated with running the mobile phone. As per the summary provided in tables 4.6 and 4.7, more than 76% indicated that higher costs relate to buying credit for making phone calls as well as paying to charge (power) the mobile phones. Further, more than 14% indicated electricity as a challenge since they could not charge their phones at home.
- Other challenges as they came up during the discussions are as follows:

(i) Policies

It has been noted that there exist various Information Management Systems at the district level, usually implemented in a top down approach. Inherent challenges in this approach include the fact that the systems does not take into account the local environments, but also, they tend to solve a one way information flow – from district to higher authorities. One cited example was for the Local Government Monitoring Database (LGMD) system where the district is supposed send forms to VEO to fill-in before the district officers can key-in these informations into the LGMD system. However, there is no budget specific for production of the forms or facilitating the data collection process.

Another challenge noted was a slow pace for political leaders to embrace ICT. Hence, call for changes to our political leaders to accept modern means of communication. Examples cited include the use of emails, phone calls or sms should be accepted for official communication instead of letters only.

(ii) Infrastructure

Due to lack of ict infrastructure, availability or access of the MAF or other related ICT services to all beneficiaries is not possible. Another challenge was the reliability and accessibility of electricity from national power grid. Yet another challenge noted was lack of general infrastructures such as good roads for transportig crop yields from production/field to processing/market places.

(iii) Expertise

Lack of local ICT experts and lack of knowledge which signify a need for capacity building or awareness in the local communities.

(iv) Sustainability issues

It was also noted by the district officials that the council usually internalizes projects after their support has ended. Thus, the budget to treasury include these activities. However, the current tendency indicates that funds from treasury are not disbursed as requested/budgeted, hence, this option is risky.

Another challenge observed by the researcher is the fact that even though MAF project is about the 1st MDG - focusing on Agriculture and Livestock, there is too much emphasis on ICT. This is observed where the link between the implementers, MPI and project owners (the District Council) is via the District ICT officer. The agriculture and livestock officer are not directly involved in the process. More than 80% of the respondents thought that MAF projects were sustainable, even after end of current sponsorship.

(v) Culture

The extension officer reported a resistance to change mindset from some of the farmers, especially in adopting new ways of doing things. Some farmers are doing their farming by culture.

(vi) Poverty

It was reported that some farmers would like to adapt the modern ways of farming, but they can't afford to implement the new methologies such as buying fertilizer. In addition to that, farmers might not follow farming advise due to lack of capital/resources, inability to carry composite to site, etc. Deforestation for "charcoal" was also reported as an attribute of poverty since to some, the activity is not by choice but lack of alternative means to survive.

(e) Recommended Strategies for enhancing effective use of ICT

The proposed strategies include capitalizing on synergies between various ICT initiatives in the istrict and the country at large. The synergies could be in terms of resouce allocation, expertise as well as capacity building. A good example for Bunda District is the fact that they have resources that could be re-used in other project:

- The ICT4RD project is owning a network infrastructure as well as servers that could be used for other services.
- The iTax project has been offered a big server that could be used for other duties.
- Capacity building for these and other ICT related could be decided to take into account complimentalities of what capacity is available versus needs accross the various sectors, etc.

Another strategy is to sensitize and empower the political leaders on the benefits of ICT as an enabler and cross cutting tool so that they appreciate its contributions as well as demand the synergies and complimentalities in the first strategy above.

(i) Capacity building and ICT experts

It was reported as well as observed that part of the challenges are lack of ICT experts at the district level as well as at those AIRC. Thus, one intervention would be:

- Planning a visitation to established centers such as Sengerema and MARUKU for awareness creation.
- Proposing basic ICT trainings to capacitate those involved in the project.

(ii) Infrastructure

Build a shared communication infrastructures that will be used for common good across all sectors. This may involve other players to create a truly multi-stakeholder approach. The proposal for building own network infrastructure versus renting existing solutions are due to the following advantages:

- A learning experience on building and managing networks – job creation to our young entrepreneurs.
- Resource sharing - Once having the network (a very big local area network) in place, it will benefit other sectors, such as education and health. You just need to install the Customer Premises Equipment (CPE).
- Once the network is built, there are no monthly recurring costs as long as you don't need the Internet.
- Ability to focus on services as well as local contents as per need.
- Engaging the Local Government Authorities in ICT arena.

(iii) Service Delivery and information access through ICTs

Establish institutional mechanisms and human capacity to link rural communities: for example an online advisory service where customers get answers quickly. It was reported in Mugeta that there is no feedback mechanisms, citing reports related to droughts affecting sunflower, as well as when elephants affected their farms.

Combining old and new media is most successful since it was confirmed during the survey that meetings or public gatherings in general (*minada, mihadhara*) works better to convey information in rural areas.

Strive to empower local people to monitor service delivery so that they demand better services. Other specific solutions are proposed below

Video conferencing

This service will enable small-holder farmers, successful farmers, extension officers (field and district levels) and other experts to share knowledge by making conferences without meeting at one centre. For example, an expert at the main information centre will be able to train TOTs (e.g. field extension officers) staying at remote information centers thereafter, relaying the knowledge to the farmers.

Voice over Internet Protocol (VOIP)

Communication technology and transmission techniques which utilize internet protocol (IP) to send and receive voice data through a computer network will be used for voice communication across AIRCs network to enable information officers at AIRCs, farmers and extension officers to communicate and share knowledge and information. The VOIP system requires purchasing of VOIP receivers and installation costs only, no monthly subscription required.

Bulk SMS Service

Through subscriptions of bulk SMS service from a mobile phone company, connected to the computer/server/database will be able to allow farmers to interact with Information centers, extension officers, researchers, experts, market managers and other stakeholders to get various information revolving around agriculture sector (markets, weather, knowledge and credit). The current solution being tested could be improved so that AIRC manager use local modem's which they can add credit themselves instead of depending on MAF project. The frontline sms http://www.frontlinesms.com/the-software/requirements/ could be a good starting point.

Interactive Voice Response (IVR)

Recorded voice/audio from various agricultural sector stakeholders, when farmers call the information centers they will receive interactive voice response.

The technology will assist a great deal via information centers by linking farmers directly to researchers, scientists, successful farmers and other stakeholders to get the type of agricultural information they need. It is also useful for farmers who cannot retrieve and read sms in their cell phones.

Web-based agricultural information system

A web-based system will be developed to provide online interaction among farmers, researchers, scientists, extension officers, managers, leaders/policy makers, traders, entrepreneurs, development partners and other stakeholders to be able to exchange agricultural information like knowledge of markets, prices, weather, funding/credit and other related information. This platform will improve farmers' interaction with other important agricultural sector stakeholders including connecting them to the outside World.

Community Radio

Community radio will enable farmers and other rural community groups to be equipped with the right information and knowledge to make informed choices and enhance their participation in decision-making on issues that affect their lives. Community radio will provide farmers with the necessary information on agricultural knowledge, weather

information, and availability of markets, market price information, rural financial services and other issues.

Digital micro-climate weather information

The main problem facing small-holder farmers on weather information is by not having a usable weather information (detailed and local to their environment) and therefore, make use of currently emerging digital weather devices connected to the project server/database to deliver right and timely weather information and soil parameters to farmers to help them determine timing of various activities like sowing, weeding, spraying and harvesting. Likewise, this type of weather information will help farmers to decide which mix of crops and seed varieties they will be planting, purchase of seeds and other inputs, and prepare their land accordingly. To have impact, this weather information should be combined with specific advice or tips (from extension officers) on the actions that need to be taken by farmers to address weather patterns.

Digital devices for digital information

Routine activities that will be performed by the information centres will include but not limited to data collection including demand-driven agriculture information, analysis, processing, documentation and documentary preparation, recording of good farming practices (seeing-is believing) and store all of this information in digital form ready for retrieval. The devices that will be involved are video cameras, digital cameras and digital audio recorders for capturing information, CD/DVD-ROMs, Flash Disks and SD/MicroSD memory cards for storage. Others will include TV, DVD/CD decks, digital projectors and PCs for play back.

Connectivity

Internet service will be installed to the information centres to act as a “global library” to the farmers for knowledge, sharing experience and other important information like market information, price information and weather. Those who posses GPRS supported mobile phones (smart phones) will be able to access WAP services (Internet and other applications) through their phones and access important agricultural information.

(iv) Content and dissemination

Availability of local contents has been a big challenge, especially at the local communities, in the local languages. The proposal starts by re-packaging the local contents from all sectors to much simpler and in a local language; then disseminate the contents via all established channels such as SMS, community radio, or through MAF outlets.

(v) ICT intervention in Agriculture

A proposal for localized web-based agricultural information system (portal), such as climate and weather information, marketing information, alerts, pest control, cultivation practices, and agricultural extension services.

(f) Knowledge Management

(i) Obstacles and Challenges of Utilizing InformationCentre and Other Outlets

There are different barriers to accessing and using information and knowledge on poverty reduction, social protection and the environment in the villages under study as summarized in Table 4.6.

Table 4.6: Obstacles to Accessing and Using Information in Bunda District

	Types of obstacles and challenges	Frequency	%
Obstacles to accessing and using information in the village	Cost of communication	45	80.4
	Inadequate of ICT infrastructure	31	55.4
	Lack of transparence on dev. info/knowledge	27	48.2
	Financial constraints	25	44.6
	Untimely info/knowledge	22	39.3
	Lack of info experts	13	23.2
	Time constraints	11	19.6
	Insufficient knowledge and skills	7	12.5
Obstacles and challenges of using the resource centre	Space	30	53.6
	Conflict of interest among village leaders	26	46.4
	Shortage of info/knowledge resources	24	42.9
	Shortage of infrastructure (e.g. ICTs, chairs etc)	21	37.5
	Distance from one village to another	16	28.6
	Time	15	26.8
	Shortage of staff	9	16.1

The following were the challenges that were identified by the District Executive Director (DED) during the interview sessions:

- The majority of rural dwellers are financially constrained.
- Poor infrastructure such as roads impedes the agriculture sector and the movement of information and knowledge.
- Acceptance of new knowledge on production process is a challenge. For example, some of the villagers were willing to adopt the sunflower crop while others were not.

Similarly, the District Commissioner explains that access to, use of and sharing of information is impeded by the following:

- Lack of agriculture production statistics and information.

- Many farmers are still reluctant to change their mindset
- Bureaucracy in information and knowledge flow leads to untimely information and knowledge. For example, bureaucracy in the Ministry of Agriculture and Livestock impedes the flow of information and knowledge.
- The system of agricultural incentives (e.g. vouchers) distribution is problematic. As a result, 80% of agriculture incentives were not utilised in 2011/2012 due to untimely information.
- Inadequate and misallocation of funding sources.
- Other district officers avoid using ICT facilities.
- Miscommunication between district officers and villagers as a result of lack of seriousness.

In general, the potential contribution of information services to the fulfilment of the information wants and needs of the rural dwellers in the selected villages in Mugeta, Kibara and Kisorya wards is hindered by different obstacles and challenges. The results suggest that the cost of communication, inadequate information and knowledge, inadequate resources and sources, untimely information, and bureaucracy are some of the critical obstacles. Other respondents cite lack of transparency in the development of information and knowledge on the part of village leaders, as well as the poor physical infrastructure and reluctance to the adoption of new knowledge in some quarters as other impediments the villagers had to contend with. Notably, there is a close relationship between physical infrastructure and movement of information in the marginalised villages in Bunda district. Accordingly, the communities in these villages are constrained by financial and time factors. On the other hand, one farmer in Kisorya states that extension services are not as close to the farmers as they should be.

During an interview, some district officials pointed out that:

> *"Heads of district council departments are not attending the meetings and other events in our district. It is not easy for them to get information and knowledge if they are not attending the meetings and other events. For example, during the inauguration of a new bank branch some of the heads of department were not there. How do they get informed"?*

This statement reveals that some of key producers of information are not willing to participate in activities that help to generate new development information and knowledge at meeting and other events in the district. This attitude can undermine information generation and knowledge gain. The people that villagers look up to, whom they expect to be sources of information and knowledge were themselves not willing to gain new knowledge. The officials further argue:

"If the district officers are not willing to change their mindsets, nothing will happen in our villages. Development does not come without an accountability and commitment. In fact, we have to get rid of obstacles and turn them into opportunities".

To sum up, the results of the FGD with district heads of department indicate that low knowledge and skills, poor policy, unreliable electricity supply, poor physical infrastructure, unsustainable new programmes and projects, funding problems, use of the top-down approach, low level of technology, shortage of expertise, negative perceptions of some political leaders on the use of ICTs, lack of awareness among the district officers were identified as the main barriers to accessing, using and sharing of information with the villagers.

(ii) Strategies to Enhance Information and Knowledge Accessibility and Usability

On how access to and use of information and knowledge on poverty reduction, social protection and environment can be improved in Mugeta, Kisorya and Kibara, the respondents were required to identify mechanisms that can be deployed to enhance the accessibility and usability of information and knowledge in the villages surveyed in Bunda district. Table 4.7 presents the strategies that are proposed by the respondents.

Table 4.7: Strategies to Enhance Access to and Use of Information and Knowledge

Strategies	Types of interventions	Frequency	%
To enhance access to and use of information and knowledge in the village	Reduce costs of using ICTs	43	76.8
	Government to improve communication infrastructures	36	64.3
	Increase info/knowledge resources	31	55.4
	Increase transparency on dev.info/knowledge	22	39.3
	More info and knowledge experts	17	30.4
	Training on info/knowledge skills	11	19.6
	Increase availability of local content	3	5.4
To improve the Community Resource Centre (CRC)	New building for info/knowledge centre/space	29	51.8
	Information and knowledge resources	27	48.2
	Increase infrastructure/facilities	20	35.7
	Experts	15	26.8
	Raise awareness and encourage villagers to use the centre	9	16.1
	Proper time of opening the centre	8	14.3

The findings presented in Table 4.7 indicate that the majority of the respondents in Bunda district (76.8 per cent) propose that the government should regulate the cost of using ICTs. Other factors that can help to make a difference for the people in the villages under the study include: increase in access to and use of information resources, employment of information experts, and enhancement of information literacy skills. The villagers in Mugeta, Kibara and Kisorya also need the government to improve the communication infrastructure.

For the village leaders, there is a need to increase transparency on the available development information and knowledge.

In order to improve the services in the Community Resources Centre, the villagers propose that the centre should actively involve all rural development actors, that is, the governmental and non-governmental organisations, civil society organizations, religious organisations and other private sector players in the process of information and knowledge creation, processing and dissemination. Similarly, the district director proposed that all projects under MAF should be sustained by the income from the district. Staff training was also recommended. Other recommendations included:

- The Community Resource Centre should be equipped with ICT to smoothen the progress of production systems: "*Effective use of ICTs in development will help us in animal conservation (e.g. GIS) and to track arable land, villages, number of farmers, types of crops and livestock in our district. What we are producing? ICT will facilitate this knowledge*".
- Information and knowledge user training is important and must be taken as a priority matter.
- Database on information and knowledge related to credit and loans accessibility to the farmers is important.
- Information and knowledge on production, processing and sharing are ingredients that are vital in rural development
- Capacity-building for farmers and other officers in the district should be enhanced.
- Empower villagers to communicate and report their production systems and process

During the FGD, participants from different departments in the Bunda District Council proposed the following strategies:

- Installation of solar energy.
- Capacity-building on the use of ICTs.
- The Council should sustain the initiated project by different agencies. For example, the council should employ an expert to work for the ATI Projected engineered centre
- Community should participate in deciding the relevant projects.
- Introduce programmes aimed at enhancing skills and knowledge.
- Effective use of national broadband in secondary schools to enhance teaching and learning

On the whole, the results from the surveys, FGDs and interviews appear to go in a similar direction pertaining to the strategies and mechanisms necessary to remove the barriers to effective and efficient access to and use of information necessary to realise sustainable development among rural communities. Accordingly, these findings imply that the rural communities in Bunda are aware of the problems dogging them and even some of the possible solutions to solve them.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary and Conclusions

This study was undertaken with many objectives in mind. They included examining access, usage and the impact of ICT (the MAF project) on the lives of grass-roots people in Bunda district. Firstly, the research examined the extent of access and utilization of MAF services and in particular examined the main issues.

Secondly, the research examined the impact of MAF and other ICT services on the lives of grass-roots people and in particular the issues such as whether the MAF and other related projects has improved the lives of rural people, whether they have brought about environmental awareness and sustainable resource management, and whether they have improved their livelihood. The research findings show that MAF and other ICT related projects have assisted in reducing the digital divide, assisted communications for rural villagers, helped farmers to receive agriculture information, assisted NGOs, and finally assisted in education-related issues.

The objectives of the study included; establishing the current status in the study area (Bunda district) in terms of social economic conditions and livelihoods, to conduct a baseline study on the practice of the implementation and execution modality of the MDG localization projects aiming to identify the benchmark and standards (best practices) and looking at the role of ICT in accelerating and addressing performance gaps/challenges of these projects.
To accomplish this survey a detailed data capturing tools (a survey instruments) prepared for data collection. Interviews conducted at various levels starting from the district official (DED and Heads of Department), ward and village leaders, Trader and processors, projects implementers (both from the LGA and CSO) and farmers mainly through their farmers groups. Purposive sampling technique was used given the nature of audience targeted. This survey utilized both qualitative and quantitative information. Qualitative information collected from the field visit in the project areas. Quantitative data obtained through the literature review, review of various reports from the LGA, projects implementers and other parties (projects) doing the related activities.

The findings from the study show that, MDG localization projects have to a large extent managed to change livelihood of the community intended. They included increase in productivity depending on interventions, which has implication to income and food security. Other interventions were targeted to improve social services such as education, health, infrastructure and water. Despite few challenges encountered these projects has shown positive results.

There are a number of success stories from implementation of projects such as ATI and ICT. These need to be scaled-up and rolled over to other localities.

Attestations from ICT users on how their livelihoods have changed as a result, show great potential if rolled to other community members. In this vein, ICT means that can be comprehended easily by the majority of community members and have greater potential. The wide consultations undertaken in the course of this study, point to the need for establishing wide-reach means such as local radios that can use local languages to reach communities.

Indeed, tangible and measurable socio-economic development can accrue from the effective and sustained promotion of the community resource centres and other information resources and sources.

6.2 Recommendations

The following are the recommendations to be considered in scaling up/rolling out the project.

- Of the three MDG localization projects; MAF, TASAF and Access to information, the MAF Project considered as the best practice, regarding the modalities used in implementation and Execution and in terms of cost effectiveness.
- Finding shows that ICT played a big role in development process particularly to solve some information related challenges. Community radio considered as very important channel where information can be disseminated and reach the community even beyond the project area. It is therefore highly recommended that in scaling up the budget take aboard the community radio as one of the intervention area.
- Involvement of the local government should be very clear, both on the papers and in practice. It seems at the moment as if LGA involvement is out of convenience to fulfill the requirements of the MAF project (requiring them to be stakeholders), rather than being owners, hence, internalizing the implementation process.
- The previous project – ATI was about Information, however, MAF is about hunger and poverty alleviation (the MDG 1). Thus, the study strongly recommends the involvement of other officers at the district council who are directly related to MDG 1. ICT is just an enabler in achieving the goals of MAF.
- We recommend MAF implementers to also offer awareness programs on what the “MAF project is all about”. Because, the beneficiaries have been indicating wishes to get support for resources such as loans, a tractor, etc., in addition to the trainings offered.
- The sustainability plan of the AIRCs should be presented and discussed early on as it is not yet clear.

For the government in general and the donor community, the study recommends the following:

- Fostering of strategies and programmes with a long-term perspective: ICT should be integrated into agricultural sector policies and supportive programmes;
- Creating multi-stakeholder mechanisms for learning: Institutional mechanisms, especially multi-stakeholder networks, should be in place to foster learning and exchange of information at various levels: 1) at local and sub-national level, linking rural communities with universities, research agencies through intermediary organizations, and, 2) at national levels to share knowledge and lessons learned and support the policy process;
- Ensuring availability and access to relevant information: put policies into place that systematically capture local knowledge, ensure appropriate research agenda setting and support the functioning of intermediary organizations; digitize information of various stakeholders and stimulate the use of shared web-based platforms; foster the adaptation of information into formats and languages relevant for rural users; foster public-private partnerships to make market and business information accessible.
- Enhancing information access in remote areas: ensure low prices for broadband internet in rural areas; foster combined public-private efforts and cost sharing arrangements to ensure sustainability of rural information centres; foster awareness-raising and capacity-building of rural communities to use and maintain ICT; support technical innovations for rural connectivity, such as wireless broadband connections or solar powered systems.

(a) Knowledge management

There is an urgent need to re-think and re-orient the development thrust and deploy the community resource centers to redress the situation and supplement development information and knowledge that is not fulfilled by other outlets. Doing so can, in turn, help to improve the productivity in agriculture and small businesses in which many of the poor in Bunda are involved so as to reduce poverty and accelerate the pace at which to achieve the MDGs. As such, the following are the recommendations:

- The extension officers who coordinate the resource centres and other community representatives should be trained on information literacy skills and knowledge on how to search information from different sources and databases effectively and efficiently.

- The projector should be bought to increase the accessibility and usability of information and knowledge. Why projector? Projector is beneficial for many reasons: large number of farmers can be accommodated during a special demonstration in the area of agriculture, social protection and environment; the information and

knowledge from the internet can be taped directly and displayed and can be used to display information to the scattered villages which are located far from each other.

- More DVDs and CDs on poverty reduction, social protection and environment management stories should be made available in the centres.
- The community resource centre workers should be exposed to different databases and community radio. For example, Tanzania Online, Tanzania Gateway, Farm Radio International.
- It is time for the Bunda district council to introduce the district library and resource centre to enable collection of all the scattered information from various departments in the district.
- Developing a strong development partnership between government and non-governmental organizations to boost information and knowledge flow for the improvement of rural livelihoods.
- In the long run, it is recommended that the resource centre funding agencies in collaboration with the government should construct the new building to accommodate large number of the users and increase the potential use of the resource centre.
- In future, Bunda District Council should employ information specialists to manage the community resource centers.

(a) Short term interventions for scaling up

The ultimate aim of the study is to scale up the already achieved successes from resource centre to another stage. This is quite important as it will optimize and increase rational utilization of the available facilities within the resource centre. In this regard, there is an urgent need to re-think and re-orient the development thrust and deploy the community resource centres to redress the situation and supplement development information and knowledge that is not fulfilled by other outlets. As such, the following are the recommendations:

1. To increase the effective utilization of the community resource centre, there is a need to introduce information skills and knowledge. The extension officers who are working in the resource centres and other community representatives should be equipped with information skills and knowledge on how to search information from different sources and networks. For example, skills to search information from the internet, to identify the relevant and appropriate sources, databases and information, and mobile phone use skills, are crucial. It appears that the extension officers and other villagers face a scarcity of funded information skills and knowledge training programmes to help sharpen their information access skills and knowledge, and as a result have to rely on their limited experience and largely non-existent know-how to access and use poverty reduction, social protection and environment information.

2. It was revealed that the community resource centres are not well equipped in terms of infrastructure and facilities. The centre to be effective facilities such as computer connected to internet, printer, scanner, photocopy machine, projector, modem, TV, DVD player, radio, CDs, and DVDs and other facilities are very important. The findings indicate that computer, modem, printer, DVD players and TV were not accessible let alone inadequate. The study recommends that projector should be bought to increase the accessibility and usability of information and knowledge. Significance of the projector has been underscored earlier.

(b) Long term interventions for scaling up

1. It was observed that Bunda district has no library and resource centre. The information is scattered or not even accessible in different departments. It is time for Bunda district council to introduce the district library and resource centre so as collect all the scattered information from various departments in the district. Similarly, as the community resource centres in the surveyed wards cannot singly bring about competitive information and knowledge, it is hereby recommended that community libraries be introduced in these centres.

2. The success of community resource centre depends on sharing information, exchanging knowledge and effective communication and interaction between researchers, agricultural extension agents and farmers. Yet these aspects of sharing, exchanging knowledge between these stakeholders are often weak or neglected. Developing a strong mechanism for collaboration between these stakeholders is important. Similarly, the development partnership between government and non-governmental organizations is important to boost information and knowledge flow for the improvement or rural livelihoods. The government in all levels should, therefore, facilitate the process by creating and enabling environment.

3. The findings indicate that the space in the present resource centres is very limited, and cannot accommodate more than fifteen users. In the long run, it is recommended that the resource centre funding agencies in collaboration with the government construct the new building to accommodate large number of the users to increase the potential use of the resource centre.

4. The study found that the community resource centres with exception of Kisorya ward, are managed and coordinated by extension officers who are not information specialists. In future, the district council should employ information specialists to manage the centres and the libraries that will be introduced.

By taking into account, the government of Tanzania would in a bottom up approach help the rural community to get opportunities to participate much more actively in their own

development process by benefiting from information and knowledge to catalyse their socio-economic improvement.

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Annex 1:

1A Sample Size

Sn	Respondents	Bunda	Field Instruments
1	Targeted groups of Beneficiaries (Farmers, Fisherman, Businesses, Traders etc)[6]	20	FGD Interview Checklist
2	Individual Targeted Beneficiaries	5	Structured Questionnaire
3	District Executives	6	FGD Interview Checklist and/or Structured Questionnaire
4	Project Coordinators or Leaders (Facilitators)	3	FGD Interview Checklist and/or Structured Questionnaire
5	Community or Ward and Village Leaders	4	FGD Interview Checklist
6	CSOs	2	FGD Interview Checklist
7	Traders and Processors	2	FGD Interview Checklist
8	Providers of financial services	2	
	Total	**44**	

1B Sample Size for Knowledge Management

Sn	Respondents	Respondents
2	Beneficiaries of MAF projects	56
3	District executives	8
4	Project coordinators (MAF & MDG Localization)	3
5	Agriculture extension officers	6
5	Community or ward and village leaders	13
7	Associations/cooperative societies/ CSOs	7
8	**Total**	**93**

[6] A total of 2 FGDs in each District Council

Annex 2: Interview Checklist and Semi Structured Questionnaire
Baseline Survey on the Current Practices on MDGs Localization and Ecosystem based Interventions

The Interview Guide (Checklist) for
District Executives, Project Facilitators, Village government/Community Leaders, CSOs/FBOs, Traders and Processors

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A. Background of the Stakeholder/Institution

1. Name of the institution/stakeholder
2. Name and Designation of participant(s) in Interview
3. Contacts (Phone, Email address, Website)
4. If the institution is participating in implementing/addressing any of MDG localization (which project(s), when started?)

B. Information on current practices and implementation

1. Perception and understanding of MDG Localization, ATI and MAF programmes
2. If understand the Objectives of MDG Localization, ATI and MAF programmes
3. Understanding of implemented projects by areas in their district
4. How were they rolled out? How were villages selected?
5. What is your role or mandate on these projects?
6. Success of the projects to meet targets (which projects, where and what can be learnt from them?)
7. The extent at which these projects have performed - to what extent have these projects changed the livelihoods of the people? What are Project Results?) (General and specific impacts to direct project beneficiaries and if there is a spillover effect)
8. Major challenges affecting implementation of the projects and if there is any initiatives to address them
9. What are major ecosystem challenges in this community?
10. What are the causes of these challenges? What is the level of awareness?
11. Do the implemented projects cause the ecosystem challenges? Which ones? How and where?
12. How do the ecosystem challenges affect project implementation and peoples' livelihoods?

13. Any initiatives to address the challenges of ecosystem?

14. Any alternative project that can be friendly to environment and ecosystem based?

15. What is the level of awareness on and use of ICT services in the communities?

16. Is ICT (services) relevant to the success of project implementation? How?

17. Any challenge related to use of ICT?

18. Any initiatives to address challenges related to use of ICT?

Capacity Development for Results-Based Monitoring, Evaluation and Auditing Project

Baseline Survey on Current Practices of MDGs Localization and Ecosystems Based Interventions

Checklist for FGD with Project Implementing Beneficiary Groups

Interviewer's name:			**Date of interview : / /2013**	
	REGION	**DISTRICT**	**WARD**	**VILLAGE**
Name				
Regions: Mara, Tabora, and Bukoba				
Time interview started		**Time interview completed**		**Number of visits**
Checked by supervisor:		**Signature:**		**Date:**
Address to which report summary may be sent:				

A:GROUP INFORMATION	
*1. **Group Name***	
2. Year Established	
3. Number of Members: At start	*Now (2013) ……*
4. Status of the Group (Registered/Not registered).Where registered?	
5. Type of Project(s) implemented by Group (by ranking)	***1. ……*** ***2. ……*** ***3. ……***
6. The Programme that support the projects: (1 MAF 2 TASAF 3 NAIVS 4 ATI)	
B: FARMINING PROJECTS/ACTIVITIES	

7. a)Does your group own land? ***8.*** ***b) How much land do you own?***	*Yes....1* *No....2* *_____ Acres*
9. a) How did you acquire your land? ***b) Do you hire land for farming?***	*Yes....1* *No....2*
10. What is the total area of land that cultivated last season?	*Acres*
11. Which types of Crop (crops) do you specialize on?(major ones by ranking)	*1._____* *2._____* *3._____*
12. Were you carrying out farming activities as a group before the MDGs localization, MAF,.... interventions?	*Yes....1* *No....2*
13. Do you have demonstration farms in this village?	*Yes...1* *No....2*
14. Do extension farm officers pay visit in this village?	*Yes, frequently....1* *Yes, rarely.....2* *No.....3*
15. Did you use improved seeds?	*Yes...1* *No....2 (skip–20.1)*
16. When did you start using improve seeds?	*..... Write year*
17. Mention type of seed	
18. Which local seeds do you use?	
19. Do you use chemicals fertilizers?	*Yes...1* *No...2 (skip–22.1)*
20. When did you start using chemical fertilizers?	*.....write year*
21. Mention the chemical fertilizer used?	*1 Urea* *2 Dap* *3 Minjingu*
22. Which Farm implements do you use during cultivation	*1. Tractor 2. Plough 3. Power Tiller 4. Hand Hoe 5. Others (specify).....*
23. Which Farm implements do you use during planting	*1. Tractor 2. Plough 3. Power Tiller 4. Hand Hoe 5. Others (specify).....*
24. Which Farm implements do you use during Harvesting	
25. Which agricultural system do you use?	*Irrigation....1* *Rain fed dependent ...2*
26. ***Are you aware of Agriculture Input Voucher System****? Yes...1 No...2(skip–27)*	
27. What do you consider as achievements through the project interventions at group and household level (area cultivated, yield/harvest, market/price of crops, etc)	

28. What are the constraints and challenges of not achieving the targets in your farming projects? What interventions are required to address the challenges	
C. LIVESTOCK PROJECTS/ACTIVITIES	
29. Type and number of livestock kept? (major by ranking)	***Type*** ***Number*** *1. ……* *……* *2. ……* *……* *3. ……* *……*
30. Were you keeping livestock as a group before the MDGs localization, MAF,…. interventions?	*Yes….1* *No….2*
31. What improved livestock management do you practice? (disease control, feeding, breeding, housing, etc)	
32. What do you consider as achievements through the project interventions at group and household level (livestock number and quality, yield per animal, market/price of livestock and livestock products, etc)	
33. What are the constraints and challenges of not achieving the targets in your livestock keeping projects? What interventions are required to address the challenges?	
D. SUPPORTING PROGRAMMES AND SERVICES	
34. Is there any ongoing or recently phased out progrrame aimed to support your projects? Yes……1 No……2	
35. ***Which Programme (s) does this group benefited from? (****1 MAF 2 TASAF 3 NAIVS 4 ATI)*	
36. ***What were success and challenges of the programme in meeting your expectation?***	
E. ACCESS TO INFORMATION	
37. Do you get agriculture and market information?	***Yes…..1*** *No….2(skip–29)*
38. Source of Information	1 Radio 2 Local traders 3 Newspaper 4 Television 5 Agri-Extension Staff 6 Cooperative Society 7 PFGs 8 Association/forum 9 Village leaders 10 Consumers 11. Internet 12. Others (Specify)

39. *How is awareness and use of ICT by the group members and in the area in general?*	
40. *Was ATI implemented in the area? How has been useful in accessing information by the community? Which type of information and quality?*	
41. . Do you make use of agriculture information in price setting and expansion?	***Yes.....1*** ***No....2***
42. . Which financial Service are you mostly using in carrying out your activities	***1 Mobile money*** 2 Banking 3 SACCOs 4. Other (Specify)
43. *. What are the major problem you face in access of information and use of ICT in your area? What intervention can be done to address the problem?*	
F. ENVIRONMENTAL CHALLENGES AND ECOSYSTEM S BASED INTERVENTIONS	
44. ***What are challenges of ecosystem in your village?***	
45. *What are the causes of these challenges? What is the level of awareness?*	
46. *Do the implemented projects cause the ecosystem challenges? Which ones? How and where?*	
47. *How do the ecosystem challenges affect your or other project implementation and peoples' livelihoods?*	
48. *What initiatives that can address the challenges of ecosystem? Can you suggest any alternative project that can be friendly to environment and ecosystem based ones?*	
49. *What are constraints toward cultural values related to ecosystem?*	
50. *What traditional approaches do you use towards environmental protection in your village?*	
G. GENERAL PERCEPTION OF THE IMPACT OF THE PROJECT ON LIVELIHOOD	
51. *Assessing the current status of and accessibility to the social services as compared to before interventions (Health services, education, water, marketing and financial services, etc)*	
52. *Assess the current status and quality of the community basic needs (Housing/Shelter, Food, Clothing, empowerment, etc)*	

THANK YOU

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