

**IMPACT OF INCOME GENERATING PROJECTS ON RURAL
LIVELIHOODS: THE CASE OF MWENEZI FISH CONSERVATION
PROJECT, ZIMBABWE**

By

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DECLARATION

I, Pardon Mufudza, declare that the research *Impact of Income Generating Projects on Rural Livelihoods, the Case of Mwenezi Fish Conservation Project, Zimbabwe*, hereby submitted to the University of Limpopo, for the degree of Master of Development in the Faculty of Management and Law has not previously been submitted by me for a degree at this or any other university, that is my work in design and in execution, and that all material contained herein has been duly acknowledged.

MUFUDZA P. (Mr)

DEDICATION

This study is dedicated to:

My wife

Nyiko Merciful Mufudza

My child

Panashe Mufudza

and

Development agencies in Zimbabwe

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ABSTRACT

Most rural communities in developing countries are involved in various natural resource exploitation programmes to improve their livelihood status. The main objectives of the research were to assess the contribution of fish conservation as a strategy towards improving the livelihood status of people in Maranda Ward 9 in Mwenezi, Zimbabwe, and to ascertain the challenges in fish conservation and access to fishing activities. In this research, a questionnaire, interviews, focus group discussions and observations were used to gather information. In the administration of the questionnaires on the village households, 80 households were used as research subjects drawn from a 10% sample size for each of the 10 villages. Purposive sampling was also used for selecting respondents for the interviews and focus group discussions. Secondary data sources used include data from the Parks and Wildlife Authority on recorded cases of fish poaching. The researcher discovered that the fish conservation project improved the livelihood status of the people. Food security was improved through supplementary purchases of food using money derived from the selling of fish. A decrease in school dropouts and improved income are some of the indicators of improved livelihood status of the people. However, there is still a need for continuous support to the programme from various external institutions such as universities, research institutions, financial institutions and Rural District Council. These institutions play a significant role in community development through educational support, training and development, financial support and in creating a favourable environment for economic development in rural areas. There is also a need for continuous monitoring and evaluation of all project activities to assess improvements in rural livelihoods and also compare the actual performance of the IGPs with the desired performance. The deviation makes a platform for corrective actions towards improving the lives of rural people.

ABBREVIATIONS AND ACRONYMS

| | |
|-----------|---|
| ABCD | Asset Based Community Development |
| CBNRM | Community Based Natural Resources Management |
| DACHICARE | Dananai Child Care |
| DFID | Department for Fund International Development |
| FAO | Food and Agriculture Organisation |
| GOK | Government of Kenya |
| HIPCs | Heavily Indebted Poor Countries |
| IMF | International Monetary Fund |
| LIDCs | Low Income Deficit Countries |
| LLIS | Local Level Integrated System |
| MDGs | Millennium Development Goals |
| ME | Monitoring and Evaluation |
| NDA | National Development Agency |
| NGOs | Non-Governmental Organisations |
| PDL | Poverty Datum Line |
| PDM | Participatory Development Method |
| PPMT | Participatory Project Management Tool |
| PRSP | Poverty Reduction Strategy Paper |
| RBM | Results Based Management |
| RDC | Rural District Council |
| SADC | Southern African Development Community |
| SDGs | Sustainable Development Goals |

| | |
|---------|--|
| VCFs | Village Community Facilitators |
| WFP | World Food Programme |
| UNDP | United Nations Development Programme |
| UN | United Nations |
| UNICEF | United Nations International Children Emergency Fund |
| ZWRCN | Zimbabwe Women`s Resource Centre and Network |
| ZIMSTAT | Zimbabwe National Statistical Agency |
| ZIMVAC | Zimbabwe Vulnerability Assessment Committee |

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CHAPTER ONE

BACKGROUND AND CONTEXT

1.1 INTRODUCTION

This study is an investigation into the impact and contribution of income generating projects on households in Mwenezi community, Zimbabwe. It specifically sought to look at fish conservation in the area, evaluating the income generating projects related to fish conservation. Zimbabwe is a low-income, food-deficit country, ranked 156 out of 187 countries according to the 2013 UNDP Human Development Index. Currently, 72 per cent of the population lives below the national poverty line (less than US\$ 1.25 per day). The Zimbabwe Vulnerability Assessment Committee (ZimVAC), led by the Government with support from various partners and WFP, recently published the 2014 Rural Livelihoods Assessment report. The ZimVAC report pointed out that approximately 6 per cent of the rural population is equivalent to 565,000 people and not so far they will be in need of food assistance.

Most of the households in the rural areas are net food buyers; they do not produce enough food to meet their needs through to the next harvest season (UNDP, 2014). Food and nutrition security remains fragile and subject to natural and economic shocks in Zimbabwe, with chronic and persistent rates of undernourishment. Most of the rural poor in sub-Saharan Africa rely for their livelihood and food security on highly climate-sensitive, rain-fed subsistence farming or small scale farming, pastoral herding and direct harvesting of ecosystems such as forests and wetlands (Mitchel, 2006).

Zimbabwe is one of several countries still classified as poor (UNDP, 2014). A high proportion of poverty rates prevalent in the country today are deeply rooted in the inequalities introduced through colonialism (Zimbabwe National Statistical Agency ZIMSTAT, 2013). To deal with issues of poverty, natural resource conservation and utilisation programmes were introduced in Zimbabwe by several NGOs such as Care International, World Vision and DACHICARE, especially at the community level as another option towards improving the livelihood status of the rural people (Good, 2009).

One of the major problems faced by African rural people is hunger. In 2011, 72.3% of all Zimbabweans were considered poor, whilst 62.6% of the households in Zimbabwe were deemed poor. Poverty is more prevalent in rural areas compared to urban areas with about 76% of the rural households considered poor compared to 38.2% of urban households (UN Zimbabwe, 2014).

Poverty is simply the inability to have enough money for basic needs such as shelter, food, clothes and water. Rural people are, for the most part, poverty stricken and practise subsistence farming as a means of survival. Poverty affects their ability to positively change their lives and environment because of limited resources and support. The World Bank (2009) indicates that income levels can be used to determine whether one is poor or not. The use of income per capita to determine a community's level of poverty is known as absolute view of poverty.

Daemane (2014), summarized poverty as lack of basic necessities of life, the low achievement in education and health, powerlessness, voicelessness, vulnerability and exposure to risks as well as marginalisation. Rehman (2011:5) argues that poverty has structural dimensions and categorizes them as follows: unequal access to assets such as land water and water bodies; unequal participation in the market; unequal access to human development; education and health care and unjust governance. All these problems must be tackled in order to exterminate poverty and achieve sustainable development.

This can only be successfully solved through income generating activities initiated locally and involving affected individuals. Income generating activities contribute to poverty reduction and improve the wellbeing of communities. Income generating activities range from agricultural production (crop, livestock), agricultural wage employment, non-agricultural wage employment, non-farm enterprises, transfers and non-labour income sources (Mabugu et al., 2013). Poor rural and urban communities often experience various challenges in their own unique settings, including lack of income generation opportunities, high levels of poverty, unemployment and inequality, low education levels and limited access to socio-economic services (NDA, 2013).

These challenges often require households to find alternative sources of income. When income is an important dimension of livelihood systems, income generating activities provide a key source of recuperating or strengthening these systems. In such situations, income generating activities can help vulnerable communities generate income to address their basic needs in a sustainable manner. The failure by government to empower and mobilise people for development programmes and projects accounts substantially for lack of socio-economic and political advancement of these societies (Olawoye, 2010).

The researcher assumes that, the disparity between urban and rural economy disadvantaged the rural people and left them trapped in poverty. The rural people became vulnerable and the only way for them to survive was to depend on urban activities. There is vast of land in rural areas that can be capitalised on by the communities in order to develop their lives. Through the support of development agencies, community initiated projects can help to tackle their problems and create independence. As such fishing conservation was introduced as a road map towards improving the livelihood status of the people living in rural communities. There is a wide gap between rural and urban areas in terms of living standards and infrastructure.

1.2 BACKGROUND

Africa, despite its abundant natural resources, is the poorest continent. It bears problems of poverty, wars, corrupt governments, diseases just to name but a few. Almost every country of Africa went through a common history. After going through decades of colonisation independence was achieved. The pre-independence social, economic and political climate bestowed economic and political benefits on whites as opposed to the indigenous people. Blacks were settled on poor quality and small portions of land whilst whites occupied vast tracts of fertile land. Blacks were denied equal education and employment opportunities and even salaries for the same job were offered according to race. These policies introduced inequalities and also perpetuated poverty among blacks. This created a deep gulf between urban and rural areas, and now needs a lot of initiatives and support to bridge it. Rural poverty has increased from 63 per cent in 2003 to 76 per cent in 2014 (UNDP, 2014).

However, unlike many other countries in the world, Zimbabwe was unable to achieve significant economic development, and some studies show that poverty is increasing and the situation is becoming worse. In 2011, 72.3 per cent of all Zimbabweans were considered poor, whilst 62.6% of the households in Zimbabwe are deemed poor. Poverty is more prevalent in rural areas compared to urban areas with about 76% of the rural households considered poor compared to 38.2% of urban households. Individual poverty prevalence is 84.3% in rural areas compared to 46.5% in urban areas, while extreme poverty is 30.3% in rural areas compared to only 5.6% in urban areas (UNICEF, 2012). According to Munetsi (2005), about one fifth of the world population is afflicted by poverty and these people live on less than a US\$1 per day.

According to the 2013 human development Report, the poorest countries are the agrarian countries and poverty is most severe in rural areas. Several projects have been implemented in Zimbabwe and failed to improve the lives of rural people because of several factors such as poor exit strategies, poor infrastructure and lack of expertise. Projects like micro-finance (stockvels), nutritional gardens, goat-pass on schemes, women`s baking projects, beekeeping and brick molding have been implemented in Zimbabwe. In 2007 Dananai Child Care and Care International introduced girl-child project, aimed at empowering them and creating financial independence.

The two organizations built small tuck-shops for them and gave them starting capital. However, the girls squandered all the incomes acquired from the project. All these have been implemented in rural areas by NGOs and government ministries and sustain them. Chenje (2009) estimates the percentage of the rural population living below the Poverty Datum Line (PDL) is 61% in Latin America and the Caribbean, 60% in sub-Saharan Africa, 31% in Asia and 26% in North Africa and the Near East. The growing negative impact of poverty among other global problems brought about the Rio Declaration in 1992. Principle 5 advocates that communities must be made responsible and must play a pivotal role in the management of resources (Thorpe, 2005).

Another United Nations conference was held and a Code of Conduct for responsible fisheries was adopted concerning sustainable management of inland fisheries (World Bank, 2004). The code was prepared under the guidelines of FAO as a result of initiatives by the Rio Summit to the consideration of sustainable fisheries management. Among the

principles adopted at this conference, principle 8 recognises the importance of the contribution of the small scale fishing to employment and security of food supplies. It also states that, priority must be given to the nutritional needs and income generation of local communities. The management of fishing will progressively include the direct involvement of those involved in the fisheries and the allocation of user rights (FAO, 2012).

The Rio declaration gave birth to the Millennium Development Goals (MDGs), and poverty was the Millennium Goal number one. All the countries strove to reduce poverty levels in rural areas. Zimbabwe is an agricultural based economy, with about 70% of its population residing in rural areas and earning a living largely from subsistence agriculture (ZMDG, 2004:15). The end of MDGs in 2015 will create a stage for Sustainable Millennium Development Goals (SDGs) in which all nations will strive for sustainable development. Almost the entire world's societies acknowledge that they aim for a combination of economic development, environmentally sustainable ability and social inclusion (Sachs, 2008:18). Zimbabwe, among other countries, introduced different programmes at national and local community levels, using the Participatory Development Methodologies (PDM).

Targets were set for the accomplishment of the targeted goals. To deal with issues of poverty, natural resource conservation and utilisation programmes were introduced, especially at the community level as another option towards improving the livelihood status of the people (Good, 2009). Fish conservation and utilisation programmes were introduced as roadmaps towards improving the livelihoods status of the people, especially in rural communities. According to FAO (2004), worldwide about 3.8 million people are estimated to be fishers and fish farmers, about 36 million (95%) are from Africa, Asia and Latin America. Of these 25 million (68%) are estimated to be involved in marine and inland small scale fisheries. According to Kurien (2005), these fish conservation and exploitation programmes have been implemented as they can provide income and as a source of proteins for the marginalised rural people.

In many Low-Income Food Deficit Countries (LIFDCs), for instance Africa and Latin America, fish is well known and frequently consumed and traded for food products in the poorest communities and is therefore a source of income (FAO, 2004). Fish conservation is the protection of wild fish populations. The aim of fish conservation is responsible management of fisheries so that they will multiply in numbers. It also involves protecting and cleaning up the environment where fishes live by limiting access to them. An

increase in fish population brings benefits both to the environment and communities. For instance, in Asia sixty per cent of the people involved in fishing activities obtain approximately forty-five per cent of their goods and services through fish selling. Fishing as a secondary or complementary activity can thus be essential for rural households both in terms of income and food security.

1.3 PROBLEM STATEMENT

Rural communities in Zimbabwe are involved in various natural resource conservation and utilisation programmes. These programmes have been introduced after the realisation that most rural communities, especially those in semi-arid areas are affected by severe droughts due to erratic rainfalls. Besides considerable provision of donor funds, the situation in Zimbabwean rural areas is deteriorating. These problems have been exacerbated by lack of empowerment and capacity building by the government, non-governmental organisations (NGOs) and the responsible local authorities (Clarke, 2012). All these dynamics have resulted in the marginalisation of most rural communities in terms of developmental or income generating programmes. As a result, rural communities have indulged in natural resource exploitation activities, which manifest themselves in severe problems of environmental degradation, not only in Zimbabwe, but also worldwide.

So the idea behind the sustainable fish farming programme was to try and improve the livelihood status of the people living in Mwenezi, Zimbabwe. There has been low agricultural productivity in most dry areas of Mwenezi district due to low mean annual rainfall patterns. Ultimately, the area experienced severe problems such as food shortages and lack of capacity to access basic needs. The researcher would like to examine whether the inception of the fish conservation programme spearheaded by local authorities, the rural people and non-governmental organisations, has made any strides in improving the livelihood status of the people. An analysis of the fish conservation programme's contribution to livelihood status justifies the present research. This research is being done after the realisation that some schools of thought such as Douma's (2009) argue that small-scale farming conservation is less attractive as a poverty alleviation mechanism from an economic point of view. In his argument, he believes that no significant income is generated from such activities. So the rationale behind this research is to assess whether fish conservation is a viable option for improving rural livelihoods and to look at the power of indigenous knowledge in local development.

1.4 AIM AND OBJECTIVES

1.4.1 AIM

The study sought to assess the impact and contribution of fish conservation project as a development initiative towards improving the livelihoods of community members at the household level in Mwenezi.

1.4.2 SPECIFIC OBJECTIVES

The specific objectives for the research were to:

- Assess the contribution of the fish conservation programme in transforming the livelihood status of the people in Mwenezi, Ward 9.
- Ascertain challenges in fish conservation including access to fishing activities and make the necessary recommendations to improve policy and practice.

1.5 RESEARCH QUESTIONS

- What is the contribution of fish conservation programme as a strategy towards livelihood status of the people in Mwenezi?
- What challenges do communities face in fish conservation including access to fishing activities?
- What recommendations can be made to improve policy and practice with regard to fish conservation?

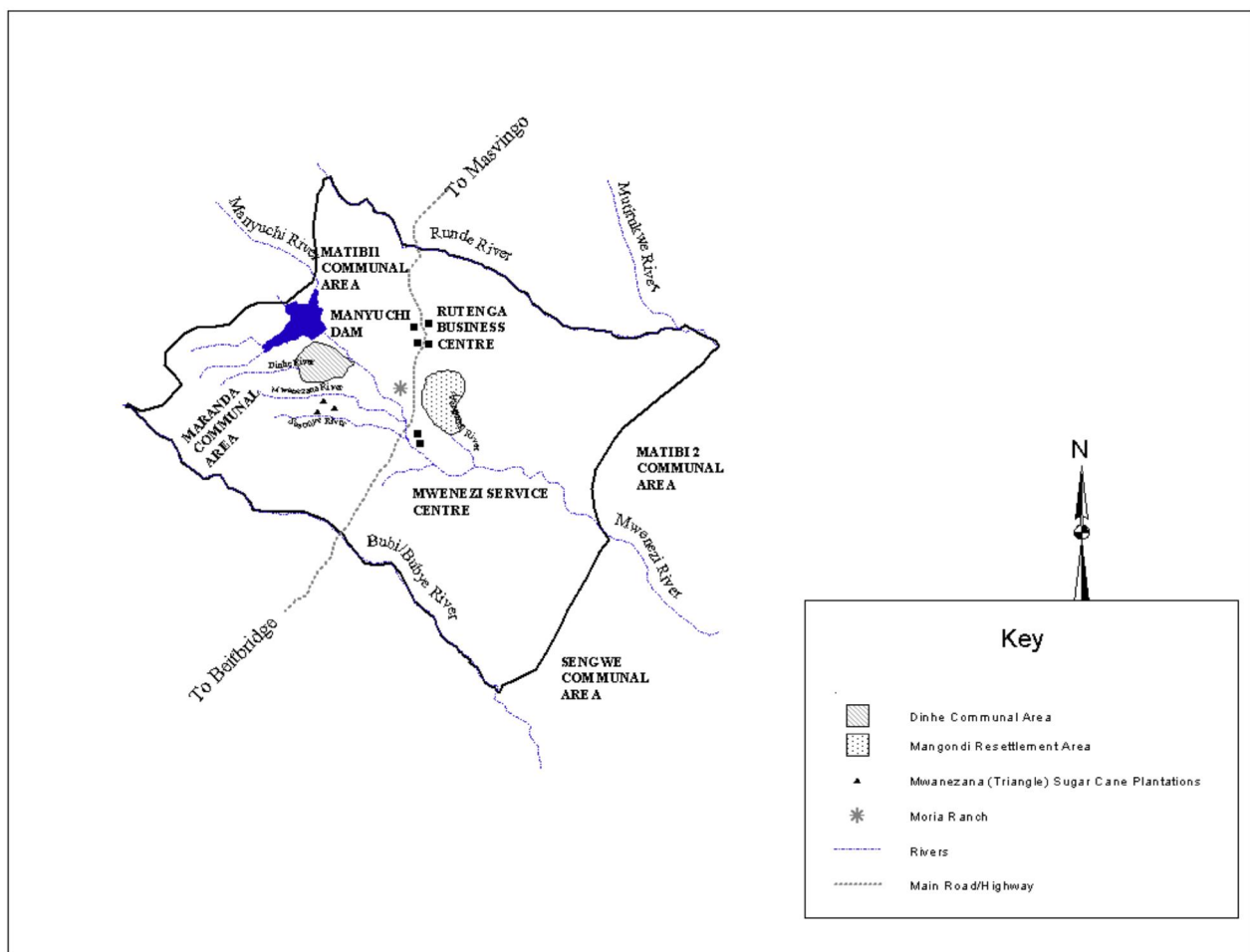
1.6 RATIONALE OF STUDY

The research is concerned with investigating the impact and contribution of fish conservation as a developmental strategy towards poverty alleviation at the household level. It draws lessons from this experience and formulates strategies for improving the livelihoods of rural communities by exploring the capabilities of the communities to sustain their own lives using available resources.

1.7 STUDY AREA

Mwenezi district lies in the Masvingo province in southern Zimbabwe and is 164 kilometres South of Masvingo town. It is found between 18 degrees and 19 degrees south of the Equator. It shares borders with the Chiredzi district to the east and northeast, Beitbridge district to the south and west, Mberengwa district to the northwest, and Chivi district to the north (see map below).

Map 1: Location of Maranda Ward 9 in Mwenezi District



Source: Manganga (2007)

Mwenezi District is divided into 16 wards. This study is going to be conducted in Ward 9 in which fish conservation is taking place in one of the largest dams in the country, Manyuchi. The dam has great irrigation and commercial fish farming potential. Mwenezi

has been selected for this study because of fishing practises in Manyuchi Dam and also because of the existence of favourable resources and conditions such as availability of water bodies, low lying agricultural land, warm climate, cheap and abundant labour, and it is the main thoroughfare that connects the town Beitbridge on the border to South Africa. The district is prone to droughts and experiences low mean annual rainfall. The majority of households in Mwenezi depend on agricultural production like livestock rearing. The small amounts of rainfall have created a desire amongst households in Mwenezi to shift towards livestock farming, especially cattle and goats (Manganga, 2007). Furthermore, some of the households are operating income generating activities such as brick moulding, coffin making and beekeeping.

1.8 SIGNIFICANCE OF THE STUDY

The research sought to add more knowledge on theories such as the basic needs approach by exploring the notion that it is not a matter of merely supplying the basic needs to individuals but to empower them so that they will, in a sustainable manner, access the basic needs to improve their livelihoods. In addition, the study is of fundamental importance because it helps in surfacing the benefits associated with sustainable fish conservation and the challenges associated with the activities of such an endeavour.

The research also sought to unpack the fact that although the project is not given much support and attention in communities, there are certain achievements it has made in influencing the livelihood activities and the development of the community. It unveils opportunities and constraints brought by the fish conservation scheme. The research outcomes inform government about the hardships and potential solutions to those problems which are currently being faced by fish farmers. Ignoring their hardships and potentials will widen the gap between rural and urban areas. Furthermore, the findings are useful to non-governmental organisations and local authorities such as the Parks and Wildlife Authorities and the local Rural District Council as they might use them to assess other programmes in their area. The study would help challenge humanitarian agencies, government and local communities to begin to involve and interact for the benefit of all inhabitants. Increased participation of beneficiary communities in programmes that are

meant to benefit them is more likely to result in sustainable interventions. Therefore, the study has both theoretical and practical significance.

1.9 DEFINITION OF CONCEPTS

Livelihood: A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks to maintain or enhance its capabilities and assets, while not undermining the natural resource base (Scoones, 2009). It is all the activities that the household engages in to earn a living (Ellis, 2009). Ellis further postulates that livelihoods comprise assets, activities and access to these that together determine the living gained by households or individuals.

Sustainability: Sustainability is a complex concept. UN Brunt Land Commission defines sustainable development as: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” In the charter for the UCLA Sustainability Committee, sustainability is defined as: “The physical development and institutional operating practices that meet the needs of present users without compromising the ability of future generations to meet their own needs, particularly with regard to use and waste of natural resources. (UNESCO, 2010)

Income generation: It means gaining, increasing money or the immediate getting of money although in the end money is used to place a measurable value on goods and services people produce. Income can be generated by self-employment, by working for others or by adding to personal resources through investment (UNESCO, 2010).

A community: a group of people who resides in a specific locality and who exercise some degree of local autonomy in organising their social life in such a way that they can, from that locality best satisfy the full range of their daily needs (Swanepoel & De Beer, 2006:43).

1.10 CONCLUSION

The chapter looked at the background of the study which laid the platform for the problem statement and research objectives. It outlined the significance of the study as well as rationale under which the study was carried out. Definition of concepts was given as well as highlights of the limitations and ethical issues of the study. The study sought to assess the impact and contribution of the income generating project on rural livelihoods specifically in Mwenezi. The next chapter explores the subject further through an extensive review of literature, which then guided the field work.

1.11 OUTLINE OF THE REPORT

The dissertation is divided into 5 chapters including an appendix section with interview guide, questionnaire and focus group discussion guide. The first chapter offers a brief background to the study, statement of the problem, aims and objectives and justification of the study. Chapter two presents a comprehensive review of the literature on the issue of fish conservation as a strategy for improving rural livelihoods, how it has managed to improve the livelihood status of rural people and reflects on basic needs approach and sustainable livelihoods frameworks. The third chapter outlines the ways and techniques used by the researcher to collect data from the field and its subsequent analysis.

The instruments used by the researcher to collect data from the field were questionnaires, in-depth interviews, focus group discussions and field observations. Aspects such as research design and the instruments used for data collection, sample design and target population are the focus of this chapter. Chapter 4 focuses on the presentation of results from the area under investigation. The results were based on the respondents' views on the contribution of the income generating project in Maranda Ward 9 in Mwenezi district. Chapter 5 presents the conclusion and recommendations.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Neuman (2010:45) states that literature review is based on the assumption that we learn and build on what others have done. Scientific research is a collaborative effort of many researchers, who have their results with others and pursue knowledge as a community. For the purposes of this study, the literature review was obtained from sources such as books, journals and conference proceedings as well as research publications. Bless (2006:24) states that the purpose of the literature review is to sharpen and deepen the theoretical framework of the research, familiarise the researcher with the latest developments in the area and identify gaps in knowledge as well as weaknesses of previous studies.

The chapter reviews related literature on the impact of income generating projects specifically fish farming in rural areas, how it has managed to improve the livelihood status of rural people. It also focuses on the strategies that have been put in place to ensure sustainability of such programs, impact on natural resources and the environment. Issues of poverty and the concept of income generation would be broadly discussed.

2.2 THEORETICAL FRAMEWORK

2.2.1 Sustainable livelihood approach (SLA)

SLA is a conceptual framework that aims at reducing poverty and creating self-sustaining livelihood, is applied to understand the contribution of fish farming in Mwenezi, Zimbabwe. The research used the SLA framework as an analytical to identify ways to advance the livelihood of rural people through income generating activities. The SLA is prominent in recent development programmes that aim to reduce poverty and vulnerability engaged in small-scale fish farming (Edwards et al., 2012). The approach tries to improve rural development policy by recognising the seasonal and cyclical complexity of livelihood strategies (Corney, 2006). It embraces a wider approach to people's livelihood by looking beyond income generation activities in which people engage (Sharkland, 2002). Figure 1 show the sustainable framework and its various

factors, which constrain or enhance livelihood opportunities and show how they relate to each other. The framework provides a way of thinking through the different influences (constraints and opportunities) on livelihoods and ensuring that important factors are not neglected (Corney, 2006). The framework also indicates how, in different contexts, sustainable livelihood in Mwenezi area can be achieved through access to a range of assets which are combined in the pursuit of different livelihood strategies. Lastly, the diagram below provides an analysis of the range of formal and informal organisational and institutional factors that influence sustainable livelihood outcomes such as NGOs, political parties, commercial enterprises and judicial bodies.

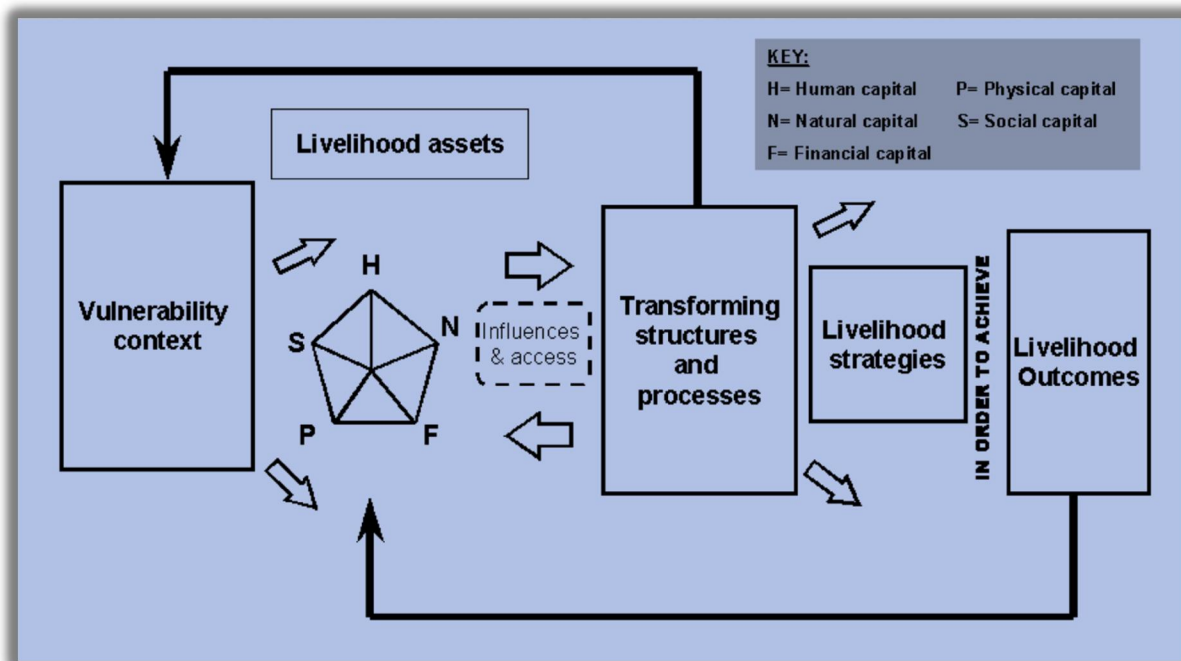


Figure 1. Sustainable livelihoods framework (Source: Ellis, 2000)

Fish farming is one of the livelihood strategies in rural areas and it requires a range of assets to successfully achieve positive livelihoods. People in Mwenezi get fish from the dam and supply nearby restaurants and individuals for meals. Farmers need a combination of capital assets to achieve a positive livelihood outcome. Absence or presence of various components of capital assets hinder or promote respectively, the likelihood of fish farming success in Mwenezi. The sustainable livelihood framework indicates five types of capital, namely:

- (i) Human capital - represents skills, knowledge, ability to work and good health that enable people to pursue their livelihood strategies and achieve their livelihood objectives (DFID, 2004). The experience with some of the community members in fishing can contribute towards attaining the desired outcomes.
- (ii) Natural capital - it is in the form of land, water and wider environment goods which are important for farmers in fish production. Manyuchi dam is currently used for fish conservation project in Mwenezi. Farmers heavily rely on rainfall and groundwater.
- (iii) Financial Capital - refers to the incomes, savings and credit. Fish farming has got potential to generate considerable amounts of financial capital. Farmers can sell fish to restaurants and hotels around Runde, Beitbridge and to motorists visiting Zimbabwe. Furthermore, farmers receive loans from NGOs, such as World Vision and Care International, Agribank in Zimbabwe and money lenders.
- (iv) Physical capital - refers to transport, road, market, electricity, water supply, sanitary and health facilities. These will help community members to achieve better livelihood strategies. Electricity supply is a challenge in Mwenezi and roads are in a bad state.
- (v) Social capital- capital in the form of networks, cultural norms and other social attributes significantly help in exchanging experiences, sharing knowledge and co-operation among rural households (Fine, 2009). Farmers receive training from the Ministry of Environment and other NGOs.

2.2.2 Income generating projects (IGPs)

Income generating activities refer to activities focussed on creating opportunities for communities to productively use locally available resources to develop less state dependent, more self-reliant households and communities able to care for themselves. Income generating activities focus on productively using locally available resources to the benefit of the entire community (Richard, 2012:14). The definition that will be adopted for this study is taken from the background paper prepared for a workshop in IGPs in Zimbabwe in 2002 by the Zimbabwe Women's Resource Centre and Network. This

definition is appropriate as it suits the projects that will be the focus of this study. IGPs will be defined as those projects that are:

Small-scale, utilising limited financial and technical resources and assisted by a government department or an NGO, which in turn is supported by a donor or a group of donors and benefit the community.

Income refers to the total money received from an activity, such as the sales from a business or money received for performing a service or selling a product in this case, fish from the project. In support of ZWRCN 's view on income generating projects, external support is very important and needed for continual existence of these projects. Chigudu (2007:2) observes that these interventions may include the provision of capital through grants; savings and credit schemes, and training or advice in skills or business management and other support services for small businesses, such as assistance with marketing and the provision of temporary trained staff. In many instances, the staff members involved in IGPs have little technical expertise and the project beneficiaries are poor rural or urban communities who pay a contribution which is used as seed money. Mitlin (2010:205) observes that both rural and urban economy depends on cash, as its people have to pay for food, fuel and transport to and from work, water, shelter, and essential health services.

Satterthwaite (2012:6) contends that the most direct form of poverty reduction in most rural areas is raising incomes and creating room for new employment opportunities, as higher incomes will allow low-income households to meet their consumption needs, to increase their assets and to afford better-quality housing and basic services. Income generating projects attempt to reduce poverty levels through increasing labour productivity and employment opportunities.

Mitlin (2010:207), however, notes that this approach should not be used in isolation, as in times of economic recession or other adverse economic changes, this may not be effective. For instance, in Zimbabwe during the recession in the 1990s, a group of low-income women involved in sewing, knitting and hairdressing found that there was no longer any demand for their services and products, as their regular customers no longer had any disposable income. According to Mitlin (2010:207), the Zimbabwean government

adopted the economic structural adjustment programme in 1992, which resulted in the removal of food subsidies and the rise in cost of living by 45%. These adjustments meant that people had to work harder and longer, sometimes crossing the border to sell goods in South Africa and Botswana for cash or second-hand goods.

According to Ashburn (2008), income generation attempts to address poverty, unemployment and lack of economic opportunities to increase participants' ability to generate income and secure livelihoods. These interventions can take a wide variety of forms including micro-credit programmes that provide small loans to individuals. An income generating project's main purpose is to generate a financial profit. However, some scholars aired out failures of income generating projects. Due (1991:81) argues that lack of education can limit entrepreneurs' ability to venture into complex projects or to expand their activities to more remunerable productive levels. Lahiri-Dutt and Sil (2004:267) observe that most of the poorest people prefer wage employment since they lack the necessary assets to start IGPs and are risk averse.

2.3 Poverty and natural resource utilisation nexus

Wrobel et al. (2010) indicate a close relationship between poverty alleviation and natural resource utilisation. The households become more sensitive to decreased availability of water resources, for example animal husbandry and agriculture require more precise use of water, with strict requirements for water quantity, water quality, and irrigation timing; any changes directly affect crop yields and prices, thereby affecting household income. According to Kunene (2012) the relationship between poverty and the environment has not been given serious consideration it deserves. The poor are both the victims and unwilling agents of environmental damage. Chenje (2011) points out that a large and growing population of rural people still struggling to survive in a limited land resource base, has led to over exploitation of natural resources. Coping strategies for the poor majority include generating income from livestock and crop production (Baland and Platteau, 2006). For example, before the 1992 drought in Zimbabwe, demands on livestock grazing resources far exceeded the carrying capacity in almost all the communal areas (Addison, 2007). This caused a lot of deterioration in the range conditions. Loss of vegetation cover brought about high rates of erosion on grazing lands (Chenje, 2009). Crop production has also been seriously affected by unreliable rainfall.

According to Chenje (2009) crop production yields have been falling due to loss of soil fertility. In order to increase production, farmers have expanded land under cultivation due to increased population and effects of land clearance have been on the increase in most developing countries. Most rivers and dams have been silted and high levels of water pollution have been witnessed. Aquatic wildlife was over exploited in Kariba and Lake Chivero and other dams (Makumbe, 2010). This has resulted in the extinction of both indigenous and exotic fish species at an alarming rate. Fisheries have bad reputation nowadays in the international community.

FAO recently estimated that worldwide 18 per cent of the fish stocks or species groups are overexploited, while 10 per cent have become significantly depleted, or are recovering from depletion (FAO, 2002). For the World Environment Day (5 June 2004), the United Nations Environment Programme (UNEP) chose the slogan “Wanted! Seas and Oceans, Dead or Alive?” and recently the World Bank posted on its front webpage an article by Ian Johnson entitled “One World, One Ocean. It’s time to save it” (World Bank, 2004).

The responsibility of fisheries (both large- and small-scale) in this situation is undisputable and it is likely that it will affect and influence the way development agencies and governments will consider initiatives related to the support of fisheries in the near future. At the same time, food security and poverty alleviation are now back on the top of agenda of these development agencies and government. Through initiatives such as the Millennium Development Goals as a normative framework at the international level, or the design and implementation of National Poverty Reduction Strategies (NPRS) at the national level, these agencies and governments are attempting to reduce the rate of poverty and to improve the livelihoods and the food security status of the 1.2 billion people living below the poverty line (Farrington et al., 2011:48).

In that context, where environmental degradations and poverty are recognised as major and urgent issues to be addressed, it is tempting to make an explicit connection between them through the “downward spiral” of the “environment-poverty nexus”, where poverty is seen as a cause of fish stock exploitation and fish stock depletion as contributing to deeper poverty. One of the implications of the adoption of this environment-poverty nexus is the widely accepted perception that economic development and poverty reduction

should help improve the conditions of fisheries resource and vice versa, that development of fisheries resources can be an important vehicle for poverty reduction. At the last World Fish Congress in May 2004 for instance, it was stated that:

Conservation of the world's oceans can only be achieved if larger problems of poverty, hunger and underdevelopment are adequately addressed. Implementing stronger conservation measures and more sustainable fishing practices in these areas hinges on addressing the root causes of poverty and food insecurity there (Cochrane, 2004).

2.4 Expanding sustainable access to fish farming

Fisheries, likely more than any other natural resource, suffer from chronic problems of open access. The livelihoods of approximately 200 million people depend on fisheries, an estimated 41.4 million of these are full- and part-time fishers, 20 per cent of whom earn less than \$1 (U.S.) per day (FAO, 2006; World Bank, 2008). A large proportion of the world's fisheries are already heavily exploited. It has been recently estimated that 25 per cent of the world's marine fish stocks are over-exploited and another 50 per cent are fully exploited, while the number of people involved in fishing and fish farming (for example aquaculture) has quadrupled since the 1950s (FAO, 2006; World Bank, 2004). In this environment, the critical issues of access are more ones of trying to assure better *security of access* to marine and inland fisheries, and less one of expanding access to a resource that is already under enormous pressure.

A World Bank review on the current global fisheries crisis states unequivocally that, "the root cause of this crisis is poor governance" (World Bank, 2004 : 23). Conflicts over marine and inland fishery resources are endemic, in large part due to its typically open access nature, weak institutions and enforcement. These problems have increased over time with the growing scarcity and higher prices of fish and seafood products and continuing degradation of coastal and inland resources (Thorpe, 2004) As a result of these problems and the growing pressures on fisheries worldwide, there has been growing acceptance of the principle of "rights-based management" of fisheries. Effectively addressing the open-access nature of fisheries, given increasing conditions of scarcity, means in many cases that access has to be limited and some must be excluded. Rights-

based fisheries management can take different forms, but is based on the principles of security of title, exclusivity, permanence and transferability.

The number of different allocable rights in fisheries is striking: catch limits, size limits, area fished, season, methods and gear, tenure, aggregation limits, minimum quota holdings, foreign vs. domestic ownership, and transferability (Edwards, 2012). Although the ultimate goal of introducing these mechanisms in fisheries management is to expand the sustainable access to fisheries, in the short run, this typically means limiting or rationing access to fisheries, whether through regulatory or market-based measures (Thorpe, 2012).

2.5 IMPACT OF INCOME GENERATING PROJECTS ON RURAL LIVELIHOODS

Productive and income-generating activities utilise local available resources and generally aim to benefit the entire community. The activities mend the standard of living of a community through availability of income to cater necessary expenditures such as health, food and education. These activities tend to reduce poverty, add to the feeling of well-being and economic independence in rural communities (Mehra, 2009). Improved well-being (and the reduction of social vulnerability) is as a result achieved by the management of diverse assets including physical, human, financial, natural, intellectual and social assets (World Bank, 2012). Well-being (and in essence social vulnerability) is often more readily measured in terms of tangible aspects such as income and consumption, savings, food security, nutritional and health status (Siegel, 2005). Intangible measures of well-being, such as perceptions of self-esteem and empowerment, hope for the future; and leisure and recreation are mostly neglected when trying to understand social vulnerability (Wisner in Shaw & Krishnamurthy, 2009).

Intangible measures of rural development assist in understanding social vulnerability; it is the tangible measures which directly reduce vulnerability. These include an understanding of household indicators such as age, income, gender, employment, other assets, disabilities, debt or savings and health insurance. Examples of an Australian government report on Quantifying Social Vulnerability include social participation, cooperation, community support, network size, emotional support, common action, bonding, bridging, linking or isolation (Dwyer et al., 2004:5). Small and micro-enterprises

are often the key players in rural development, due to the fact that they provide social structure and can address the difficulties which rural communities face (Fielden et al., 2013).

Community members form groups, initially to provide a solution to unemployment or to supplement their current income. As a result of this action, income generating projects are formed with added benefits such as coherence, network forming, social integration, emotional support, but also social participation (Ashburn, 2008: 63). These are indirect benefits very important in locally initiated projects not recognised by donors and government agencies when they impose projects to communities.

Income generating projects create a strong relationship between rural development and participation, with the assumption of the existence of a community and their ability to participate in their own development. Commitment of people is high when they contribute in solving matters affecting them. It also helps through utilisation of indigenous knowledge from them. Collins and Ison (2006) go one step further in describing the impact of income generating projects, where community needs such as those of rural farm dwellers are often neglected by the state. Income generating projects with a people centred approach provide communities with the opportunity to generate an additional income, gain self-respect and dignity. People-centred activities ensure that individuals become active participants (inclusivity), thus providing themselves with opportunities and not receiving benefits.

The definition of a livelihood proposed by Chambers and Conway (1992) has come to be used (with minor modifications) by many authors: "The capabilities, assets (stores, resources, claims and access) and activities required for a means of living". Central elements of the livelihoods concept are that it includes non-material aspects of well-being, and that it is dynamic. The concept of sustainable livelihoods and the sustainable livelihoods framework or approach was developed during the 1990s as a tool to help integrate the livelihoods perspective into research and development projects (Chambers and Conway 1992; Farrington et al. 1999; Scoones, 1998) and has become widely adopted by researchers as well as bilateral and multilateral agencies and NGOs, though there has also been criticism of the approach.

The concept of sustainability should in this context be interpreted broadly, as social institutions and people's capacities to generate new activities need to be sustained as well as the natural resource base. Scoones (1998:1) writes: "A livelihood is sustainable when it can cope with and recover from stresses and shocks, and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base". The researcher adopted the sustainable livelihoods approach to develop research questions and gain a better understanding of local situations. An important part of livelihoods research has been to determine not only what type of livelihoods rural people in poor areas have, but also the relationship between various livelihood activities and the strategies that people use when combining and choosing between these activities.

2.6 THE GENERAL CONTRIBUTION OF FISH CONSERVATION ON LIVELIHOOD STATUS OF RURAL PEOPLE

Food and Agricultural Organisation (FAO), through its Advisory Committee on Fisheries Research (ACFR) and its Committee of Fisheries (COFI), recognised that small scale fisheries had not received the attention that they deserved considering the important contribution that they seem to make to nutrition and food security, local economic development, sustainable livelihoods and poverty alleviation, especially in developing countries. According to Thorpe (2012) the fishery sector plays multiple roles in the economies of West Africa and Central African Countries, some which are not well documented by national statistical systems.

Nevertheless these contributions are important for achieving food security and poverty reduction, which are two essential elements of global food development strategies expressed in the Millennium Development Goals (MDGs Progress Report, 2004:48). This has also been added in Sustainable Development Goals by 2030, to ensure that all men and women, particularly the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership, and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services including microfinance. This explicitly indicates total support of income generating projects by various stakeholders with the aim of fighting poverty. This

research will seal a gap of knowledge by exploring important factors that drive all the communities towards sustainable development.

2.7 CONTRIBUTION OF FISH FARMING AT THE LOCAL LEVEL

2.7.1 *Income contribution*

Fish farming is just like another small business which brings profits from the sales. The money received will help different households to meet life costs. In market-remote areas, this subsistence component may be more important for the household economy than cash income not simply for the poorest but for the whole community. Aquaculture is increasingly being recognized as the generator of good income for households, particularly cash income to subsistence and semi-subsistence households in rural farming settings, although it is not necessarily the main source of income (Ahmed et al., 2007:130). The sector has often been a national poverty reduction strategy for example in countries like Ghana and Ivory Coast (World Fish Centre, 2005). At household level, the money will be used to meet other expenses such as school fees, medical expenses and transport. In fact in some places the number of persons who receive a regular income from fishing is actually only a tiny proportion of the overall number involved in fishing activity.

In his socio-economic profiling of the fishing community of the Mutshindudi catchment in northeast South Africa, he found that less than one per cent of the people engaged in fishing in the area derive a regular income from fishing. In this area a major portion of the fishers consist of scholars (for the younger) and unemployed (for the older) who fish on a part-time basis. For these people, the relatively low catch per unit effort precludes the generation of a significant income.

2.7.2 *Poverty alleviation*

Fish farming contributes to the livelihoods of the poor through improved food supply, employment and income. There are few projects which targets the poor people. The consumers of fish (including farmers themselves) receive a good value of fish which is food security. Basavara (2008:20) indicates that fish farming can make a contribution towards improving the livelihood status of the people and food security in many

developing countries. In November 2001, an international Workshop on “Small-scale fisheries, Poverty and the Code of Conduct” was organised in Cotonou, which brought together experts from the South and North to debate and deliberate their experience about fish farming in West Africa and their relation to poverty (Neiland and Bene, 2004). The focus on poverty reduction has been reflected in the programmes of multilateral financial institutions, most notably the international Monetary Fund (IMF) and the World Bank (Food and Agricultural Organisation, 2006).

Since 2000, these organisations have made concessional lending and subsequently eligibility to the Heavily Indebted Poor Countries (HIPC). Initiatives, conditional upon countries submitting Poverty Reduction Strategy Paper (PRSP) that should evolve from a highly participatory and transparent consultant process prescribed a combination of macro-economic and sectoral policies consistent with poverty reducing outcomes at local levels (FAO, 2006). Likewise, the role of fishing (and related activities such as fish processing and trading) in poverty alleviation cannot be treated in isolation from the economic role of these activities and from the interactions that exist between the sector and the other rural activities. In some cases, small-scale fisheries can be a very remunerative activity and the wealth generated through fishing (or related activities such as fish trading) may be a powerful factor of poverty reduction for those involved in the sector (Ahmed et al., 2014:134).

2.7.3 National and Economic development

FAO ACFR Working Party on Small-scale Fisheries proposed, in December 2003, a useful descriptive paragraph that can be used as a basis to better refine the concept of small-scale fish farming and development:

Small-scale fish farming can be broadly characterized as a dynamic and evolving sector employing labour intensive harvesting, processing and distribution technologies to exploit marine and inland water fishery resources. The activities of this sub-sector, conducted full-time or part-time or just seasonally, are often targeted on supplying fish and fishery products to local and domestic markets, and for subsistence consumption. Export oriented production; however, has increased in many small-scale fisheries during the last one to two decades because of greater market integration and globalization. While

typically men are engaged in fishing and women in fish processing and marketing, women are also known to engage in near shore harvesting activities and men are known to engage in fish marketing and distribution. Other ancillary activities such as net-making, boat-building, engine repair and maintenance, etc. can provide additional fishery-related employment and income opportunities in marine and inland fishing communities (FAO, 2003).

More so, fisheries output may also generate tax revenues, allowing more public investment in infrastructure, the demand of which may be stimulated by the growth of the fishing sector. Small-scale fisheries can therefore play an important role for rural development: they create wealth within the sector, which may then spread to the rest of the local community, or even trickle up to the national economy through tax revenues and foreign exchanges generated by regional or international trades. It is therefore important to realise that there are three economic levels (household, local and national) at which poverty reduction mechanisms can operate, and which depend on different mechanisms and therefore relate to, and require, different policies. Allison (2011) proposes a distinction which explicitly divides up the overall contribution of small-scale fisheries to poverty reduction into:

- *Wealth generation at the household level and its distribution within households – to men, women and children;*
- *A rural development engine at the community level, and*
- *Economic growth at the national level.*

Fish conservation generates extra income, which is used to purchase goods and services from other sectors of the economy, thus making fisheries an important engine driving local economic development (European Commission, 2005). The community can acquire assets using the income gained from fish selling such as kitchen utensils and farming gear. This clearly indicates the strong and productive interrelationship between the primary, secondary and the tertiary sector.

2.8 Fish farming and food security

2.8.1 Nutritional input

Protein from fish contributes to the overall protein intake significantly as the digestibility of protein from fish is approximately 5–15 % higher than that from plants. Furthermore, protein from fish helps in the absorption of protein from plant (Bene, 2008). Rural areas normally have poor nutritional levels; children are at a greater risk of being underweight or stunted. Furthermore, inadequate intake of food and unbalanced diets results in micronutrient deficiencies. Fish conservation has health benefits of poly-unsaturated fatty acids from fish and fish oil, which are thought to lower blood pressure and reduce the risk of heart disease. In developing countries, the focus has been on the role of fish in tackling under nutrition, maternal and child health (FAO, 2005). Fish farming is directly linked to food security concerns through analysis of its contributions to protein supply; it is much more important as a source of micronutrients and lipids. More than two billion people in the world are undernourished through deficiency in essential vitamins and minerals, especially in vitamin A, iron and zinc (World Fish centre, 2011:7).

These deficiencies have got serious negative effects at key stages of human life (pregnancy, breastfeeding, childhood) and can have severe and often irreversible impacts for health and physical and mental development. This is the so-called 'hidden hunger'. Fish can potentially contribute to reducing micronutrient deficiencies and reducing this health burden (Neiland et al., 2004:48). Worldwide, more than 1 billion people rely on fish as an important source of animal proteins, especially where other sources of animal protein are scarce or expensive. Fish is essential in East Asia and Africa, for instance, where it supplies more than 50 per cent of the animal protein intake in the diet of the 400 million living in some of the poorest countries of the world such as Gambia, Ghana, Equatorial Guinea, Indonesia, Sierra Leone, Togo, Guinea, Bangladesh, the Republic of Congo and Cambodia (FAO, 2008).

2.8.2 Contribution of fish farming to food security

Food insecurity remains one of the most visible dimensions of poverty and is generally the first sign of extreme destitution. Most rural communities are poverty stricken and people do not afford decent meals. Food security means all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (McGoodwin, 2007).

The fishery sector provides vital and unique benefits such as protein, vitamins, minerals and micro-nutrients. Therefore, it is apparent that the sector has a significant impact on food and nutrition security in areas close to Manyuchi Dam. In addition, studies have revealed that fishing communities are better in terms of meal frequency, meal composition, meal diversity, availability of household assets and the level of income with which they buy food to ensure household and nutrition security. As a result, the project employs a significant proportion of fishers, processors and marketers enabling them to earn income for purchase of food to meet their household food and nutrition security. Households which vend in fish find it advantageous to sell fish and purchase other food items to improve their household food security and nutritional status (FAO, 2005).

The yield, trade and processing of fish add indirectly to food security by increasing buying power at individual or household level. Fish farming and its role in food security is usually evaluated through the market value of the fish. For those who cannot afford buying food in the community (usually the poorest and most marginalised) rely on their own catch and that makes the difference between good and bad nutrition, between recovered health and prolonged illness or between food security and starvation (FAO, 2005).

2.8.3 Empowerment

The World Bank defines empowerment as “the process of enhancing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes” (WB 2010). It further elaborates that empowerment is the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable those institutions that affect their lives (WB 2010). Empowerment refers to the means by which entitlements (access to resources) are maintained and

defended. Chambers (1983) and many others (for example Friedmann, 1992) have stressed that the poor - especially in rural areas usually suffer from a low level of socio-political organisation and that their capacity to make their voice heard is consequently weak, resulting in exclusion from political and decision-making processes. In these conditions the necessity for coordination and collection decisions within the fishing sector represents an important potential for political empowerment of those fishing communities. Through collective actions and coordinating mechanisms set up in the forms of fishers' organisations, community-based or co-management arrangements, local fishing communities are able to organise themselves and raise their political voice to defend their access or rights to the resource against other users within the sector (for example larger-scale fleet) or outside the sector (for example agricultural or tourism sectors) (Ahmed, 2007:140).

Inclusion of rural communities in issues of their welfare is a fundamental factor that should guide all development processes that seek to improve their livelihoods. It is through their active participation that their needs, desires and goals are likely to receive proper attention (Dube, 2012; Mashangwa, 2012; Moyo and Francis, 2010; Moyo, Francis and Ndlovu, 2012). This empowerment, which is particularly important for the poorest and most marginalised communities, may actually be the way to be formally (legally) recognised as legitimate users of the resource. It is a bottom-up approach to development unlike the top-down approach.

2.9 CONTRIBUTION OF FISH FARMING TOWARDS ENVIRONMENT CONSERVATION

People depend on and exploit natural resources every day for their continuous survival. Fish farming contributes towards environment protection. Much of environmental degradation results in some cases from inadequate coordination and management of development and irresponsible practises by communities such as dumping babies, urinating and eutrophication. Fishing, by its very nature, is a collective action activity; it allows communities to come together and take responsibility of their available resources and exploit them sparingly. Although fishers can exploit the resource individually, the interaction, crowding effect or possibly conflict between individuals' fishing gears soon creates a need for coordinating and organising collectively through fishing activity (Thorpe, 2004).

There is need for coordination, which is initially related to technological aspects (interactions between fishing gear), is further reinforced by the limiting nature of the resource. The community coordination and unity will make the people to agree on ways to exploit resources sparingly for future generation, for instance shun unfriendly fishing methods. This project supports the SDGs, by 2030, water quality will be better because of reduced pollution, less dumping and low release of hazardous chemicals and materials into water bodies with potential to improve the lives of people. In a nutshell, fish farming allows a strong interaction between flora and fauna.

2.10 CHALLENGES IN FISH CONSERVATION AS STRATEGY TO IMPROVE LIVELIHOOD STATUS OF THE PEOPLE

According to the World Fish Centre (2011: 76), the sustainable harvesting of fish stocks has ecologically determined upper limits for increasing the contribution of fisheries towards improving the livelihood status of the rural people and economic growth. In most developing countries, the current contribution of fish conservation towards the livelihood status of the people are less than they could be, because the resources are already over exploited and harvests are reduced (Agrawal, 2009). Often much has to be done to ensure maximum benefits from this activity and to maintain equilibrium between exploitation and the benefits obtained in order to avoid over exploitation of the resource (World Fish Centre, 2005). For example, market demands may exceed the capacity of the resource to sustain the necessary levels of catch (FAO, 2002). The precautionary measures and policies should be put in place to avoid the extinction of fish species (Chenje, 2009). There must be equilibrium between the needs of existing generation and the forthcoming one.

According to Thorpe (2005), the fishery sector is dynamic and reactive to its local, national and international environment. The policy formulation process should therefore be built on the various existing roles that the fishery sector plays in both national and local economy (World Bank, 2004). One important concept to guide policy formulation, according to Bene (2006) is to device mechanisms on how the fishery sector can provide the greatest contribution in the livelihood status of the people.

Similarly, lack of commercially produced feeds and employment of low pond management practices, has resulted in stagnation of fish farming leading to food insecurity in the study area (GOK, 2010). Pollution, environmental degradation, shortage of land, fresh water and suitable baby wild fish to build brood stocks of farmed fish are also associated with constraints (Richardson, 2010)

Once policies to enhance the contribution of fish conservation towards improving the livelihood status of the people have been identified, it is important to ensure that the fishery sector is adequately represented in poverty reduction policy. In most cases, the current and potential role of small-scale fisheries in improving the livelihood status of the rural people is poorly recognised in the African region (European Commission, 2005, 45) and limited support is given by external agencies which have a greater role to play.

According to the study of the contribution of Fish Marketing (2004) in the countries of the lake Chad Basin, supportive actions can be considered to increase awareness of the role of small-scale fisheries on improving the livelihood status of the people. Governments, universities, rural district councils and NGOS do not give enough support to locally initiated projects. These actions will be a strengthening of the collaborative ties between those ministries responsible for fisheries, the PRSP and finances, local decentralised governments, development partners and NGOs and other members of the civic society (FAO, 2008 :34). Livelihood studies have to be carried out and sectoral value chain analysis to identify the distribution of benefits and multiplier effects in terms of income (World Bank, 2004). Appropriate methods and operational tools to better assess the poor income distribution and growth potential of the sector should be put in place. These should target the fishing dependent communities in household surveys aiming at poverty assessment. The challenge here is that, most deserving households which are poverty stricken are left out because they are physically weak in the community. In this way the gap between the haves and the have-nots end up wide in rural areas.

Another problem is that many governments evince an interest in the participation of “community” owing to political economic exigencies (Thompson and Lele, 2000). Fishing households in general and poor fishers in small-scale fisheries in particular, are prone to very high level of vulnerability closely related to their activity (fishing) and the livelihoods associated to it. This vulnerability affects them through various sources of risks: first and

foremost a high occupational risk, as recalled by McGoodwin (2009:27). Few land-based occupations confront their participants with the risks of losing all of their productive capital, as well as their lives, every time they go to work. This happens when there are conflicts between project beneficiaries and other households not benefiting. Some community members will end up stealing from those households benefiting for them to survive. Yet these possibilities are commonplace among many small-scale fishers. McGoodwin (2009) goes on to assert: “Both large- and small-scale approach to fishing comprises some of the most hazardous and economically risky occupations in the world”.

More fundamentally fishing is by nature an unpredictable activity, although there undoubtedly exists a “loose” relationship between capital investment and returns to investment in fisheries, this relationship is particularly uncertain and variable in small-scale fisheries both in the short and longer terms. The yield (and therefore the revenues) that fishers derive from fishing is not simply a function of the number of nets or the time spent at sea. It largely depends on exogenous factors, and in particular the availability or catchability of the resource – which fluctuates on a daily, monthly, seasonal and annual basis. This uncertainty represents a major difference between fisheries and other major rural activities such as farming, even if some would argue that farming activities are also unpredictable (Eldin and Milleville, 2009). Finally, this uncertainty affecting capture fisheries is also transferred perhaps to a lesser extent – to the fisheries-related activities (processing, trading), thus affecting some other members of the same community (and sometimes of same households).

For all these reasons, it is often stated that fishing-related communities are probably amongst the most vulnerable socio-economic working groups, in particular in developing countries – where both institutional and human capacities to address the inherent uncertainty of fishing activity are lower than in developed countries (Munialo, 2011). People become more prone to poverty because they are more vulnerable; and they are more vulnerable because of the type of activities they pursue, namely fish farming. Another challenge is that, “more than a billion people living in 40 developing countries risk being deprived of their main source of protein because of the overexploitation of fishery reserves associated with an increase in export demand for animal foods and oils, to the detriment of domestic consumption”(Adewuyi, Phillip, Ayinde and Akerele, 2010). In

support of this view, most people in small income generating projects end up enjoying profits forgetting their dietary needs.

2.11 CONCLUSION

The chapter outlined diverse views from a range of academics about means of improving rural livelihoods through community participation. Approaches like sustainable livelihood has been tried and tested in different areas and regarded as one of the effective ways to make rural livelihoods sustainable. Furthermore, the chapter indicated means of generating income in rural areas practised by other countries. The economic status of rural people has an effect on natural resource utilisation. Income generating projects positively change rural livelihoods in several countries although different challenges are experienced. Policy implementers are supposed to alter their policies in so far as fish farming is concerned. The next chapter will explore the research methodology and sampling methods used in this study to gather the necessary information.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The chapter outlines the techniques used by the researcher to collect data from the field and its subsequent analysis. The research instruments used by the researcher to collect data from authorities and institutions were questionnaires, interviews, focus group discussions and field observations. Aspects such as research design and the instruments used for data collection, sample design and target population are the focus of this chapter.

3.2 RESEARCH DESIGN

In this research, the researcher used both qualitative and quantitative research approaches. The researcher adopted a case study design. Case study design is more of a choice of what to study. Qualitative case study methodology provides tools for researchers to study complex phenomena within their contexts (Yin, 2013: 21). According to Creswell (2007:73), a case study involves an exploration of a “bounded system” (bounded by time, context or place), or a single or multiple case, over a period of time through detailed, in-depth data collection involving multiple sources of information.

A case study research method assists an empirical inquiry that investigates a contemporary phenomenon within its real life context when the boundaries between and context are not clearly evident and in which multiple sources of evidence are used (Kathryn, 2014: 56). These designs ensured that the data collected would meet the research objectives and more importantly, the information needed for decision making in order to assess the impact of income generating activities on sustainable rural livelihoods

3.3 POPULATION AND SAMPLE

A population is the totality of persons, events, organisation units, case records or other sampling units with which the research problem is concerned (De Vos AS et al., 2011). The population consists of households participating in fish conservation in Maranda Ward 9. Welman et al. (2005:46) define population as the study of object, which may be individuals, groups, organisations, human products and events or the conditions to which they are exposed. According to Sibanda (2002) the population size of the ward was

approximately 5 232 and the total number of households was 795, which gave an average of 6 members per each family. The target population for the questionnaire was the village households. In all, 795 households were selected from the 10 villages, but due to the heterogeneity of the population size among the 10 villages, the researcher selected a proportional 10% sample size from each of the 10 villages as shown in Table 1 below.

3.3.1 Sample

A sample comprises elements or a subset of the population considered for actual inclusion in the case study, or it can be viewed as a subset of measurements drawn from a population in which we are interested (Creswell, 2013: 222). Stratified sampling was used with classes formed basing on villages to select a sample from a total of 795 households in Maranda Ward 9. This sampling procedure was preferred because it covers as much ground and area as possible, whilst maintaining a balance in the status of the villages in the ward through selecting equal respondents from all the villages regardless of its population size. The stratified sampling technique was used for all the 10 villages in the ward, selecting a proportional 10% sample size for each of the 10 villages. According to Neumann, (2012), a sample of at least 10% of the total population is enough to give a true representation of the total area.

Table: 1 Sample size from each village

| Name of Village | Number of Households | 10% of the households |
|------------------------|-----------------------------|------------------------------|
| Chirongedze | 88 | 9 |
| Bonda | 59 | 6 |
| Magomana | 64 | 6 |
| Chiwarure | 86 | 9 |
| Bhadhagi | 123 | 13 |
| Muzvare | 60 | 6 |
| Rambudha | 109 | 11 |
| Mudyavavana | 56 | 6 |
| Ruvengo | 96 | 10 |
| Gwenhamo | 54 | 5 |
| Total | 795 | 80 |

3.4 METHODS OF DATA COLLECTION

The researcher used both primary and secondary sources. Primary data according to Leedy (2006) is data extracted from the field in its raw state, while secondary data is information that has already been collected for other purposes (Donald, 2003). The use of these instruments embodies the collection of data from the concerned target population and great care was taken in making sure that the survey was tailor made to the specifications of the research problem

Table 2: Data collection procedure

| Objective | Respondents | Instruments |
|--|--|---|
| Objective 1 Assess the contribution of the fish conservation programme in transforming the livelihood status of the people in Mwenezi, Ward 9. | Households | 80 Questionnaires |
| Objective 2 Ascertain challenges in fish conservation including access to fishing activities and make the necessary recommendations to improve policy and practice. | Households Key informants Parks and Wildlife Officer | 80 Questionnaires Interviews Interviews |

3.4.1 Primary sources

Data refers to the rough materials researchers collect from the world they are studying; they are the particulars that form the basis of analysis (De Vos et al., 2011). Primary data is data which is specifically gathered for a specific purpose and has not been manipulated by initial researchers. The data gathered was specifically for assessing the impact of income generating projects on rural livelihood. Data on impact of fish conservation was gathered through questionnaires and interviews.

Collection of primary data has the following benefits:

- (i) It is free from the bias that arises from initial researcher`s influences.
- (ii) It provides up to date data that is gathered for the problem at hand.
- (iii) It gives a reliable picture since it is directed from parties involved (Alan, 2014).

However, collection of this data type requires a lot of time, especially when conducting interviews and waiting for responses from the questionnaires. It has also proved to be expensive in the distribution of questionnaire and conducting interviews.

3.4.2 Questionnaire

The researcher used both open and closed questions in order to maintain simplicity, gather as much information as possible and at the same time maintain control over the information gathering process. The questionnaire has the following benefits:

- (i) Collection of objective data as there is no influence from the respondent.
- (ii) They provide documental evidence that can be used by the researcher.
- (iii) It is an easy way of collecting large amounts of data (Alan, 2014).

However, questionnaires may not be able to bring out the exact data that the researcher expects to use as some respondents withhold certain information or fail to understand the question as a whole and deviate from the scope of the question.

According to Creswell (2013), a questionnaire is a set of well formulated questions to probe responses from respondents. In this research, both open-ended and close-ended questions were used. According to Bryman (2014) open-ended questions are those questions that require elaboration and expression of personal views by the respondents. Close-ended are questions that do not give room for the respondents to answer questions the way they perceive; they do not provide response choice to the respondents (Bryman, 2014).

The researcher used questionnaires (Appendix D) to gather data on income generation from fish conservation, asset accumulation, cash dividends from fish and other savings from the programme. Data on household income was used to investigate the impact of the project towards the livelihood status of the people in Maranda Ward 9. Information on asset accumulation and dividends was used to analyse whether fish conservation in Maranda Ward 9 has contributed towards improving the livelihood status of the people. Other information which was gathered through the questionnaire is on the challenges people faced in fish conservation including access to fishing activities

Also, in-depth interviews were conducted with the parks and wild life authorities, NGO programme officers to collect data on the best way to undertake fish conservation. A focus group discussion (Appendix C) was held with the village health workers, councillors, headman, kraal heads and project committee members to ascertain the usefulness of the programme.

3.4.3 Interviews

The researcher used face-to-face interviews with individuals, and interviews have the following benefits:

- (i) Questionnaires allow identification of crucial areas with non-verbal communication.
- (ii) They allow immediate and reliable feedback.
- (iii) They allow confirmation and probing further into the problem area (Alan, 2014).

However, conducting interviews may result in bias of information as the respondent may shape the answers to be favourable to the interviewer and neglect the crucial matter the

researcher may wish to unfold. The reliability of the information depends on the degree of co-operation by the respondent.

Babbie (2009) describes interviews as face-to-face question and answer conversation between the interviewer and interviewee. During data collection, two interviews were conducted, one with the Parks and Wildlife Officer, and the other with Care International Programme Officer. These two were purposively chosen with the hope that they would give information that would be input in analysing the impact or contribution of fish conservation towards poverty alleviation.

3.4.4 Interview with the parks and wildlife authority

The semi-structured interview was used between the researcher and the Parks and Wildlife Officer (Appendix A). The semi-structured interviews enabled the researcher to probe for more information and the interviewer could elaborate during the interview session. The interview with the Parks and Wildlife Authority Officer helped the researcher to gather information on how fish conservation impacted on rural livelihoods. It was also used for investigating the contribution of the project to people in the ward and the challenges faced by the community. The information assisted to ascertain challenges in access and conservation of fish resources. The information also helped to make a critical assessment on the impact of fish conservation project towards poverty alleviation.

3.4.5 Interview with the Care International programme officer

Another interview was carried out between the researcher and Care International programme officer based in Maranda Ward 9 (Appendix B). This individual was purposively chosen because the organisation is the one which is funding the programme as part of its mission to alleviate poverty in vulnerable communities. The aim of the interview was to gather information on the success of the programme to fight poverty at the household level and to find out the challenges faced in the implementation of the programme.

3.4.6 Focus group discussion

The focus group method is an interview with several people on a specific topic or issue. It is a form of group interview which consists of several participants (in addition to the

facilitator or moderator); emphasis in questioning is placed on a particular and fairly tightly defined topic, and the intonation is upon interaction within the group and the joint construction of meaning (Bryman, 2012:473). Focus groups usually comprise between 6 and 10 people. I have selected 10 members, namely two village health workers, councillors, headmen, kraal heads, two officers from NGO and Wildlife Park authorities and three project committee members to ascertain the usefulness of the programme.

3.4.7 Secondary sources

The researcher used secondary data sources to gather pertinent information. In this case secondary data was obtained from the Parks and Wildlife records. The information obtained consists of the policies and measures to ensure the smooth running of the project. Statistics were also collected from the health workers pertaining to changes in malnutrition, child mortality rates and income levels per household.

3.5 ETHICAL CONSIDERATIONS

Research should be based on mutual trust, acceptance, cooperation, promises and well accepted conventions and expectations between all parties involved in a research project (Strydom, 2011:113). The researcher ensured that the research did not harm the partakers or collecting the information at the expense of the participants. More so, participation in the research was subject to an individual's interest to participate on own volition. No one was coerced to take part in it. All the participants were treated equally and with all due respect. In addition, misleading information to participants was avoided at all costs. The information collected from the participants was handled in a confidential manner and the source of information was not disclosed to third parties.

3.6 LIMITATIONS

The main limitation was the inability of certain households to read and write and the services of interpreters had to be used. Some of the respondents might have been uncomfortable or even unwilling to disclose some personal details such as assets acquired from the project. Efforts to minimize the negative impact of these limitations were made by watching the respondents closely. Though the study has some benefits,

there were certain limitations which the researcher faced. Scarcity of funds limited the research excellence.

The researcher needed to travel from South Africa to Mwenezi in Zimbabwe which is about 650km. In addition, the researcher did not have sufficient time to collect data from all the targeted participants. Interpretations of questionnaires amongst the respondents were different which resulted in bias. Some community members in Mwenezi were not interested in the research and thereby making their responses questionable.

3.7 CONCLUSION

The chapter served the purpose of outlining the research design, sources of data, the research instruments and the sampling procedures used. It also described the research methodology used and the manner the information was presented. The following chapter will look at data presentation and analysis.

CHAPTER 4

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

This chapter focused on the presentation of data collected from the ward under investigation. The data was based on the respondents view on the contribution of fish conservation as strategy towards changing the livelihood status of the people in Maranda Ward 9 in Mwenzi District, the income and assets from fish farming and the challenges in fish conservation and access to fishing activities.

4.2 PRESENTATION OF RESULTS

4.2.1 The general livelihood status of the people before and after fish conservation project

Most members of the group indicated that the livelihood status of the people greatly improved after the introduction of the fish conservation project. The various aspects of improvements that were witnessed include food security, income levels cases of protein deficiency related diseases and general reduction in school drop outs as shown in Figure 2 below:

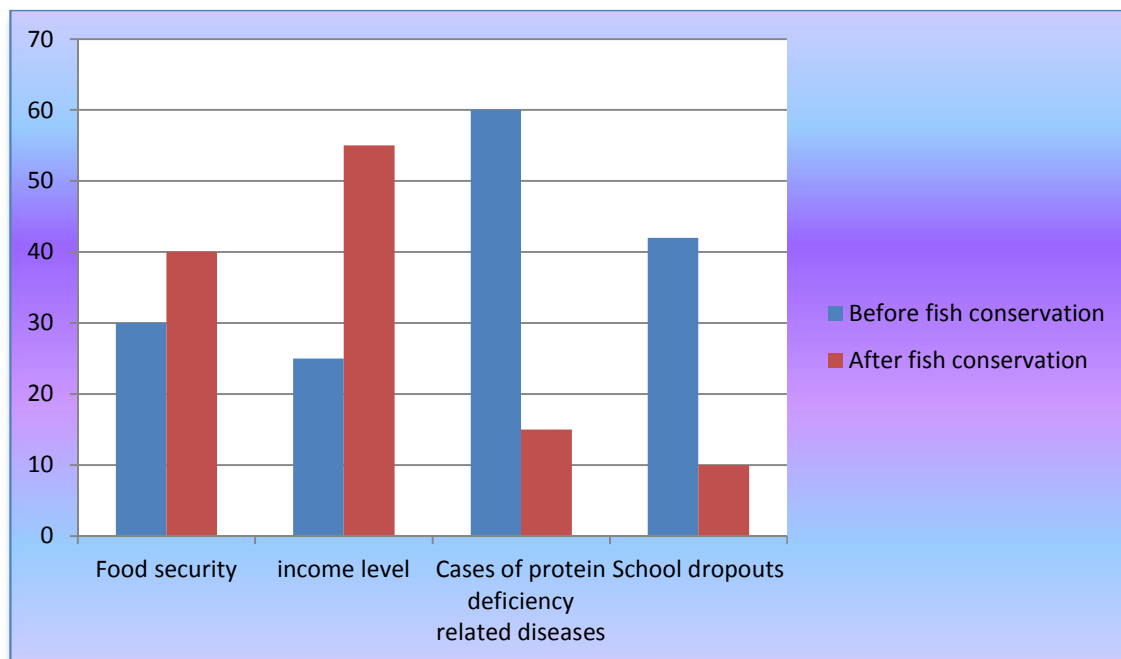


Figure 2: Livelihood status of the people before and after the fish conservation project

According to the respondents some of the reasons for the improved food security include supplementary purchases of food using money generated from fish selling, and similar reasons were given on the issue of decreased school dropouts. They also indicated that the project strengthened the protein base of the community as was supported by the village health worker. However, all members complemented the contribution of other resources towards improving the livelihood status of the people. They all agreed that the programme improved the livelihoods of the community, as there were other programmes that were also undertaken which were also important in delivering the same goal.

4.2.2 Impact of fish conservation project on local people’s livelihood

There were varying responses on whether the fish conservation programme was a success or not in improving the livelihood status of the people in the ward. Of the 80 questionnaires that were answered and returned, the responses are shown in Figure 3 below:

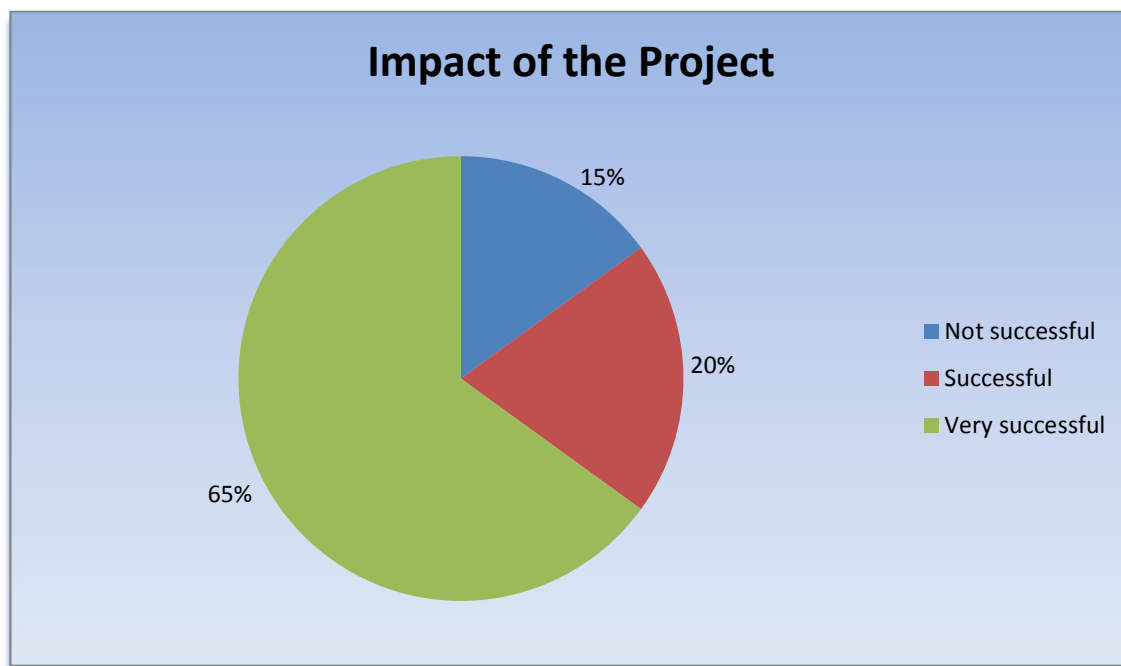


Figure 3 : Impact of fish conservation on income generation levels

As shown in Figure 3 above, 65% of the respondents indicated the fish conservation project as very successful in improving the livelihood status of the people, and 20% regarded it as successful while only 15% regarded it as not successful. The research findings conform to those of Mali where inland fishing increased the income levels of poor rural people. The variations in the responses can be attributed to the differences in the level of participation, where those who regarded it as very successful are very active members in the programme and these household members enjoy direct benefits in the project than other people.

4.2.3 Comparison of income generated from fish conservation and other project/activities

There were varying responses on income generated from the fish conservation project in comparison with other income generating programmes/projects which are carried out in the areas such as cooperative gardening, caterpillar harvesting and so forth. One of the participants said, “The money I received from this project is better compared to other projects of Care International, World Vision and Dachicare”. However, the responses indicated that the fish conservation programme had the highest share as far as income generation in the area was concerned as shown in Figure 4 below:

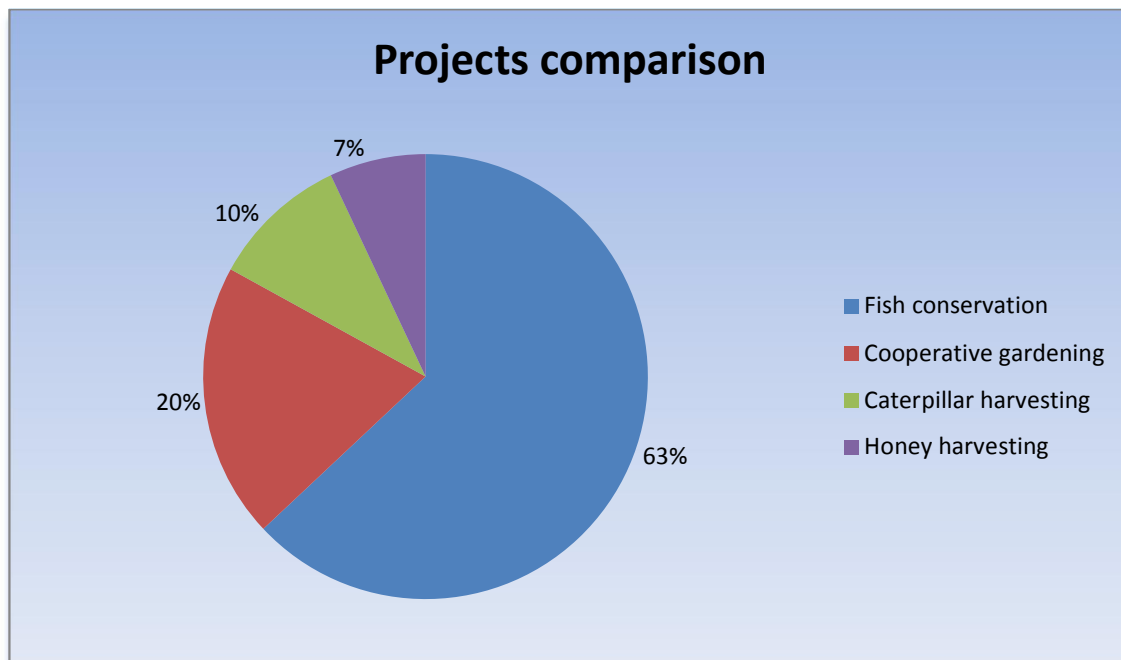


Figure 4: Levels of income from fish conservation compared to other natural resources

Figure 4 indicates that of the 63% of the questionnaires that were answered and returned, fish conservation was the major source of income in the ward; 19% indicated cooperative gardening, 10% favoured caterpillar harvesting and 7% favoured bee harvesting as the major source of income. The variations in the responses may be because the benefits from these programmes were not homogeneous; they varied from one person to another depending on the type of the programme. This means that those households, for example, who were very active members in cooperative gardening than in say, fish conservation, opted for fish conservation as the major income-generating programme because they were deriving most of their benefits from the programme hence had a bias towards the activity.

4.2.4 Assets accrued from fish conservation

Out of the total of 66% of the respondents who indicated that they had more than one asset acquired from proceeds from selling fish, 14% were women and 52% were men. Amongst and the 22% who indicated that they had at least one asset obtained through fish selling 6% were women and 16% were men and for the 10% that indicated that they had none, 2% were women and 9% were men.

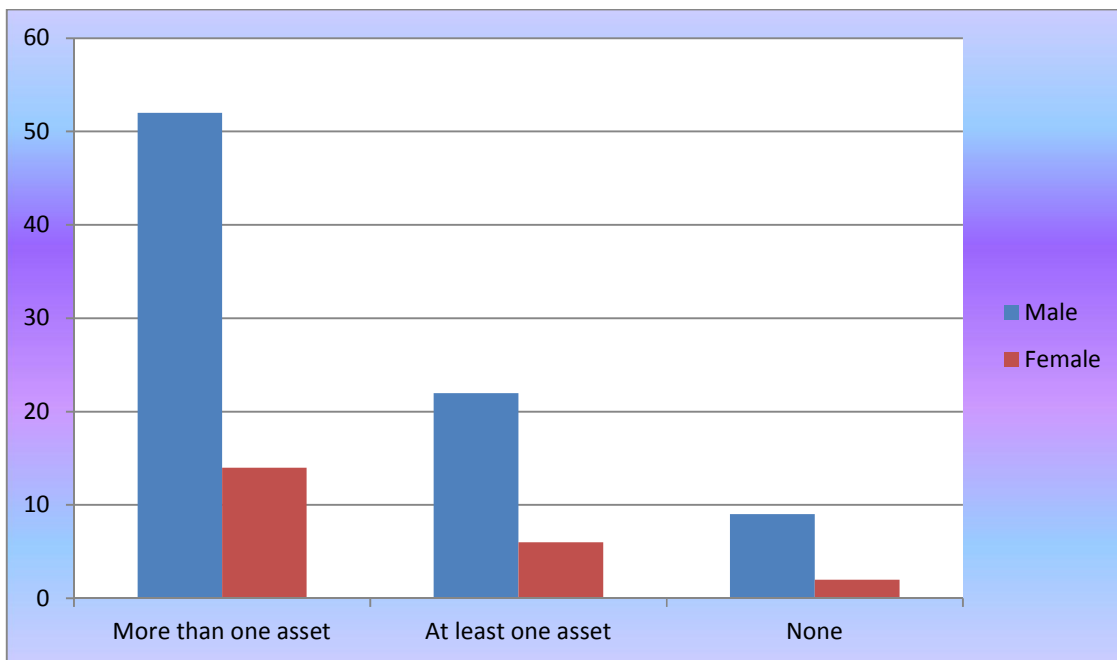


Figure 5: Asset bought using proceeds from fish conservation

According to the respondents most assets indicated by men include ploughs, scotch carts, harrows and bicycles while the common items with women included pots, plates, kitchen units, cups and other feminine related goods. However, assets like harrows and scotch carts tend to be common to both sexes because these assets are useful to both sexes in terms of socio-economic importance.

4.2.5 Benefits from fish conservation to the community

The interview responses from the Care programme officer indicated that the fish conservation programme had brought considerable benefits to the community. He indicated some socio-economic improvements and these are summarised in Table 2:

Table 3: Benefits of Fish farming to the community

| ECONOMIC BENEFITS | SOCIAL BENEFITS |
|--|--|
| Dividends are now creating extra income to pay school fees. | Improved food security through fish selling and the money was used to purchase maize from the nearby GMB substation. |
| Now the households are able to pay taxes like livestock levies. | Improved agricultural input supplies. |
| Payment of medical/health consultation fees. | A balanced diet. |
| Extra income can be used to purchase other basic commodities like sugar, salt, soap, cooking oil among others. | Community cooperation and cohesion. |

The above mentioned improvements have been brought about by incomes generated from fish conservation and other income generating programmes, but the programme officer indicated that the fish conservation project contributed much in the socio-economic status of the community. The respondents gave the indicators as follows:

- Decreased school dropouts;
- Improved medication services, and
- Improved agricultural outputs.

4.3 CHALLENGES IN THE COMMUNITY FROM FISH CONSERVATION PROJECT

The Parks and Wildlife officer highlighted many challenges that are associated with the fish conservation project:

4.3.1 Fish poaching

The officer reported an increase in illegal, unregulated and unreported fishing taking place during the night and not adding value towards the project, only maintaining individuals' fate. The officer said, "People from other communities like Ngundu come during the night to fish and it is difficult to patrol during that time because of crocodiles and hippopotamus in the dam." Fish mongers operate late at night and this affects the fish stock.

4.3.2 Vandalisation of fishing equipment

Vandalism refers to the conspicuous defacement or destruction of project equipment. The Parks and Wildlife officer reported that, some of the community culprits deliberately damage the fishing equipment and fish drying structures. The reason for the destruction is to disturb the benefits accruing from the project to beneficiaries.

4.3.3 Poor record management

The officer indicated poor record management as one of the setbacks of fish project. Proper record keeping is one of the biggest challenges experienced by project beneficiaries. The problem hinders sustainability of the project and for every project to be successful there ought to be proper record keeping. One of the members echoed that, some of the funds meant to cater for the project were also used for other personal uses such that the project could not raise enough funds for its continual existence. "Not all of us know exactly, the amount of money received monthly and the number of assets bought for this project", a participant indicated (Male, 27 years old, project member).

4.3.4 Unsustainable fishing practices

Unsustainable fishing methods are ways of catching fish that are not considered sustainable in the long term because they threaten the fish stock itself by overfishing, or because they threaten the environment the fish need to thrive. Good examples of this practice include the use of fishing nets and poisoning the fish. The officer indicated that these pitiable and wicked practices were taking place in Manyuchi dam.

4.3.5 Flooding

Floods have an adverse effect on people's lives, thousands can become homeless, crops in the fields get destroyed and infrastructure is severely destroyed. The Parks officer indicated that, heavy rains destroy roads, bridges and structures for drying fish. The destruction of infrastructure adversely affects the transportation of fish which ends up rotten. Among the problems provided by the Parks and Wildlife officer, are fish poaching and non-compliance with the stipulated fishing regulations which are major problems. This was because the community was ignorant of the stipulated fish regulations. The situation was also worsened by lack of enforcement which was one of problems stated in the Fish World Centre (2006) report. He indicated that people who were involved in fish poaching were people from other communities beyond Ward 9, since there was poor monitoring of the activities.

4.4 CHALLENGES IN FISH FARMING AS INDICATED BY THE VILLAGERS

The respondents (village households) indicated various problems which are associated with fish conservation from a rural participatory point of view. The problems appeared to be different to those given by the Parks and Wildlife Authority.

4.4.1 Transport

Some of the respondents indicated that, transport to ferry fish to the markets beyond Ward 9 is one the challenges they experienced. To transport fish for a long distance required refrigerated containers which are expensive for them. Fish is a perishable product and cannot remain fresh in hot areas like Mwenezi.

4.4.2 Preservation methods

Most of the households are using traditional ways of preserving fish like drying, salting, pickling and smoking. All of these techniques are still being used but that is far from being competitive in the current global environment. The modern techniques are freezing and canning which are very expensive for them. These techniques allow the catch to be distributed to markets outside Mwenezi because of increased shelf life.

4.4.3 Prices of fishing materials

Project members indicated that prices of fishing equipment (fishing rods, hooks, lines, sinkers, floats, reels, baits, lures, spears, nets and traps) are very high because they need to be imported from South Africa. Furthermore, some of the materials of fish preservation like salt (coarse salt) and vinegar get out of stock in local shops.

4.4.4 Water pollution

The project is also being affected by eutrophication (wastes with toxic chemicals washed away from the inland and deposited into water bodies). There are also nearby projects next to the Manyuchi dam such as gardening. They apply a variety of chemicals and also fertilisers which affect water quality in the dam. There is a positive relationship between water quality and fish farming.

4.4.5 External support

The project members and beneficiaries indicated limited support from other external agencies/institutions. Support services, facilities and infrastructure are critical in sustaining fish farming and the marketing of the products. Members indicated limited support from universities, research institutions, transport providers, financial institutions, and mentioned much more support was needed to sustain the project. "Inform the government ministries or even banks to help farmers with money", a participant begged the researcher. In general, the project does not rely on labour only, but on service providers who offer a wide range of labour intensive support services such as dam maintenance as well as training of members in the theoretical and technical aspects of fish conservation.

4.4.6 Intra-project conflicts

Clashes of ideas and disagreements in decision making are part and parcel of group work. It was reported that members have disagreements during the allocation of duties and sharing of the proceeds from the projects. It was also claimed that some members do not want to work hard, but when it comes to profit sharing they are in the forefront.

4.5 FIELD OBSERVATION ANALYSIS

During the five days of staying the study area, the researcher managed to observe the challenges that were being faced by the implementation of the fish conservation programme and access to fishing activities. The researcher managed to take some photos in an attempt to summarise the whole situation at the fishing sites as shown on Pic 1:



Pic 1: Fish ready for preservation in the preservation shelters

The picture shown in Pic 1 above shows how fish is processed and preserved at the fishing site. The drying method was the major method of fish preservation used by most people in the community.

4.5.1 Fishing practices used by the community

The researcher during the period of stay in the community also took some time to observe the fishing methods used by the community. The whole situation is summarised in Pic 2:



Pic 2: The fishing practices

The major problem observed by the researcher was that most people in the community regarded the resource as a common property resource, so there was little care taken on the sustainable utilisation of the resource. The problem of over fishing was one of the chief problems observed by the researcher and the fishing methods used by the people were not sustainable. Most of the people use nets for fishing and these nets capture both premature and mature fish.

4.6 DISCUSSION

4.6.1 Livelihoods and fish conservation

According to Edwards et al. (2012) livelihood can be recorded when communities experience increased wellbeing and reduced vulnerability through high incomes, improved food accessibility and the more sustainable use of natural resources.

4.6.2 Income creation and fish farming

Overall, fish farming played an important role in income creation in all the surveyed households. Rural and urban economies depend on cash because the people have to pay for their food and other necessities such as fuel and transport. This view goes parallel to (Mitlin's (2010) point that money is needed for an individual to access basic needs. However, the income from the other income-creating activities, such as, agriculture was needed to sustain fish farming. Half of the surveyed households indicated that the project is self-supportive. The researcher made an observation that, combining agriculture and fish farming can produce better results. Very few self-supportive projects in rural areas continue to exist after the donor has departed. Households with no other means of support relied very much on fish farming as their primary source of income. From the interest shown by the households, they may have had to drop or reduce, other income creating activities in order to start engaging in fish farming.

However, expenditures are high in households without additional extra and enough sources of income. In support of Chigudu's (2007) view, interventions including the provision of capital through grants as well as savings and credit schemes have the potential to improve project implementation. Even though local markets in the study area were available, market access was often difficult due to bad road conditions and the fact that most have their own transport. Public transport is costly, possibly hindering farmers from selling the fish on the external markets to increase their profits.

On one hand, the study shows that on a regional scale, some employment was indeed created through fish farming. Income generating projects aim to address poverty, unemployment and lack of economic opportunities. Such initiatives have the potential to increase household and individual income, enabling them to secure their livelihoods. However, small scale activities often do not create full time employment all year round. This contradicts Satterthwaite's (2012) view that employment creation raises incomes for low income households. On the other hand, not all households take this as an income generating activity; some take it as a recreation activity which ultimately dilutes the impact of the project. Future studies can be done on this area assessing the contribution of this activity as recreational and on the sustainability of the jobs created.

4.6.3 Food security

The fish conservation project, just like any other project, contributes towards the livelihoods of poor people through improved food supply and income. Availability of food, changes in protein consumption and overall diet diversity as perceived by the respondents are looked at in this section. McGoodwin (2007) also indicates that access to sufficient, safe and nutritious food makes an individual active and healthy. Before the project, the main proteins consumed were low-cost proteins such as beans. Higher cost options like purchased fish and meat were consumed less frequently by all farmers. After the project, fish from the project were rarely used for home consumption which contradicts the observation by Dey et al. (2006) that fish farming households frequently consumed home-farmed fish. Almost all fish produced and received by households in the study were sold on the market.

During the site visit, about four vehicles came to fetch all the fish. The improvements in the consumption of animal protein in sampled households might be the result of increased food accessibility which was also observed by Hishamunda and Ridlee (2006). Another reason for the increase in meat consumption by households could be that farmers now had more money to keep livestock for own consumption because certain farmers used their income to buy goats, cattle and chickens. Also, households do not use fish from the project for home consumption to increase their dietary diversities. Diet diversities possibly also increased through food items bought with the income generated. When an individual has money, the potential of buying anything he/she wishes is very high.

Availability of fish from the project might have affected other issues in the communities such as ensuring a balanced diet in households. Under-privileged households may end up taking fish every day or the whole day and this might be wrong in terms of their health. Some wanted to take fish every day; the research indicated that, it is difficult for the households to have fish every day because it is a perishable product which needs advanced storage facilities. Incomes are then used to buy staple food, (Jahan et al., (2010) as well as non-staple foods. However, further research is needed to assess the actual nutritional situation of the fish farmers since the increased availability of food items does not equal better nutrition.

4.6.4 Sustainable use of natural resources

The only way to use natural resources sustainably is by exploiting them to satisfy both the current and future generations. This can be achieved by integrating fish farming with other agricultural activities in exploiting the natural resources. The project can make use of maize as an ingredient for the fish feed which is cost effective and readily available in the community. Another way of integrating fish farming into agriculture is through the use of water from the dam to supply cooperatives for gardening. Higher crop yields could increase the farmers' income or nutrition which would in turn better the livelihoods as argued by Dey et al. (2006).

4.6.5 Other aspect

Empowerment of women and the young people

Fish farming, since it is an activity with many different stakeholders, can provide employment also to women and young people. Based on the findings, the project incorporated males as well as old farmers. Incorporation of the underprivileged group will open doors for employment opportunities and provide income to the people as established by Hino (2011) and Jagger and Pender (2001). This point is supported by FAO (2005), on their presentation on Working Party on small-scale fisheries which indicates that both women and men must play a role in the project. Men will be responsible for fishing and women will take part in fish processing and the young ones can try to come up with marketing strategies. Dube et al. (2013) also indicated that, this empowerment allows the poorest and marginalised individuals to be formally recognised and use resources profitably. In order to further assess the role of these groups, more research needs to be done incorporating additional groups of stakeholders.

Changes in other livelihood parameters

Changes in other certain livelihood parameters which reflect improved well-being include better health care, increased possession of household assets and increased ability to pay schooling fees. These shed more light on livelihood changes of the fish farmers in the study area. Overall, the livelihoods of the households in terms of the above stated livelihood parameters improved largely as a result of fish farming. Profits obtained from

the project resulted in these improvements. However, these parameters are too personal and might have induced the participants to give 'appropriate' answers in order to impress the researcher about their wellbeing.

4.6.6 Future challenges and opportunities

In order to help fish farmers to increase their production and profits, production and livelihoods, their problems need to be addressed such as funding, marketing and expertise. Financial setbacks were mentioned primarily by most households. Backing the idea of Agrawal, (2009), the community might have a challenge on balancing resource exploitation and benefits obtained in order to avoid over-exploitation. Financial problems might have escalated the expenditures because of a lack of government subsidies. Training in financial management to solve such problems might help them in the long run. However, some farmers may have exaggerated financial setbacks with the hope of receiving support. Training also helps in educating the farmers on sustainable fish farming practices.

The profits of fish farming could be achieved by improving the marketing of the fish through improved availability of storage and cooling facilities. Improving road infrastructure would possibly help to alleviate the problem. Some of the households were aware of this challenge because they suggested "better market access" and "availability of storage and cooling facilities" as support needed in future. A positive outcome from fish farming is public investment in infrastructure from tax revenues generated from such initiatives. This will play a crucial role in rural development.

4.7 CONCLUSION

In a nutshell, this research shows that the livelihoods of Maranda households have indeed improved in terms of increased protein consumptions, incomes and food security. However, the research revealed some of the indirect improvements, such as the generation of income from the project. Efforts need to be made from different stakeholders in order to expand the potential of the project, especially from the external agencies. Training and financial support, short term loans can help the communities immensely.

Other ways of promoting higher productivity include the promotion of sustainable and integrated aquaculture-agriculture practices and using locally available and cost effective fish farming inputs such as maize, manure from cattle, pigs and chickens. However, the output of intensified fish farming, where lots of inputs are injected such as rice bran, oil palm fibre is not the same as an extensive farming/production system which relies on natural processes.

More so, other fish farming technologies have not been adopted in the community such as the use of ponds. In this case, it would be recommended that farmers should make use of ponds to keep fish. This method will allow them to re-use the water from ponds for agricultural activities. Also, it allows them to have more control on fish and be able to upgrade the type of fish they have through breeding as it allows farmers to manipulate their production. The problem is that, if pond productivities are not well managed they become expenditure to them of maintenance.

CHAPTER 5

SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

This chapter seeks to interpret and discuss the empirical findings in a deliberate and logical manner, give recommendations and explain the impact of the study results on both practice and policy. The conclusions drawn from the research are indicated and the major findings are outlined. The recommendations and implications of the study for policy action to improve the livelihoods of rural people are discussed. They are expected to help policy makers and implementers to play a more effective role in the development of the country. Lastly, issues that still need further research are also presented in this chapter.

5.2 SUMMARY OF CHAPTERS

Chapter One presented the introduction of the research and reflected on the background, context of the research and background of Zimbabwe, problem statement, research questions, objectives, the purpose and significance of the study.

Chapter Two dealt with literature related to the impact of income generating projects towards transforming the livelihood of rural people. Other means of transforming the livelihoods of communities were identified followed by a discussion of their weaknesses. The chapter reviewed literature on the sustainable livelihood of rural communities. The literature indicated how projects should be initiated and implemented at the rural level. It also indicated the ways in which the rural people can be supported through income generating projects. In addition, chapter two indicated that communities really know their problems, and involving them in initiating projects can be a good idea. There are many projects which were introduced by the government in the district but failed. For communities to improve their lives, they must identify and exploit available resources.

Chapter Three covered the methodology adopted for collecting data for the study as well as the techniques used to obtain the views of community members and project beneficiaries. The research adopted a case study method which assisted with empirical evidence. The research instruments used by the researcher to collect data from the field,

authorities and institutions are questionnaires, interviews, focus group discussions and field observations. As such, both primary sources and secondary sources of data have been used. A sample of 80 households was used out of 795 households from the 10 villages in Ward 9. Also, the ethical considerations were addressed in this chapter as well as the limitations.

Chapter Four dealt with the presentation of data supplied by the respondents of Ward 9 to find out the impact of fish conservation towards improving their livelihoods. It also indicated the status of people before and after the project. The dominant view of people has been that the project successfully improved their lives. In addition, the chapter presented the challenges experienced by project members and community members and recommended ways for sustainable project management and implementation. The chapter also outlined the analysis made by the researcher during data collection, the findings of the study as well as the recommendations made by the respondents.

Chapter Five focused on the research findings obtained from the data collected during the site visit. Conclusions were drawn on the impact of fish conservation as a strategy to improve the lives of people in rural communities. The chapter indicated that fish conservation as an income generating project has great potential to bridge the gap between urban areas and rural areas. The findings of the study led to the tabling of recommendations that can be employed by different development agencies across the country. The area of future study has also been indicated to bridge the gap between the findings and also re-examine other factors that can contribute towards successful implementation of income generating projects

5.3 REALISATION OF OBJECTIVES

Objective 1: Assess the contribution of the fish conservation programme in transforming the livelihood status of the people in Mwenezi, Ward 9.

The project positively contributed towards transforming the livelihoods of rural livelihoods. The majority of the respondents indicated that, their lives relatively changed since the project was introduced. Based on the findings, the project allowed community members to have income from selling fish. The households were able to afford medical bills, build houses, buy decent clothing, have a balanced diet, pay school fees and send their

children to tertiary institutions. According to Abraham Maslow's (1943) hierarchy of needs, the development of a human being occurs in five stages, namely physiological, safety, love/belonging, esteem and self-actualisation. Maslow mentions that, the physiological needs, which are the physical requirements for human survival, must be met in communities. These include water, food, clothing and shelter. Through fish conservation project, several households managed to access food (porridge and fish), clothing and shelter. Availability of physical needs gives a strong foundation for other needs and when a community moves up the pyramid of needs, it explicitly indicates a positive growth at the local level.

In addition, households in Maranda Ward 9 now own a lot of assets: pots, plates, kitchen units, wardrobes and so forth to scotch carts, ox-drawn plough and cattle. Zeroing in on the premises of the Asset-based approach to development, a community can develop much better if it identifies and utilises available assets effectively. Through the use of land and water and social assets (gifts and talents) of community members, the project successfully managed to transform the lives of people in Maranda.

OBJECTIVE 2: Ascertain challenges in fish conservation including access to fishing activities and make the necessary recommendations to improve policy and practice

The research indicated some of the challenges experienced by community members during project implementation. Challenges which hinder the success of the project have been identified as limited support from several institutions (research institutions and universities), conflicts, poor record keeping, poaching, transport problems, flooding, poor security and management. The researcher posits a number of recommendations which can be adopted to facilitate the smooth running of project such as training of community members, spot checks by Parks and Wildlife Authorities, involvement of community members in decision making as well as government intervention.

5.4 CONCLUSION

In Zimbabwe, rural communities have been affected by the social and economic policies of the past. There is a wide gap between urban areas and rural areas in so far as development is concerned. Rural areas largely depend upon the proceeds from urban

activities. There was inequitable distribution of resources, migration patterns and development pace. Few people own mean of production; young people left for urban areas and further under developing their areas. All of these created negative effects to rural social life.

The research provided a critical overview of the contribution, role and importance of an income generating project to the livelihoods of rural populations in Mwenezi. Positive contributions have been identified such as poverty alleviation and food security. Project beneficiaries managed to buy a variety of assets. However, the community faces challenges which range from poaching, conflicts among beneficiaries to mismanagement of community assets. The researcher tabled a variety of recommendations which could assist the running of the project smoothly and sustainably.

From the findings, it is vividly clear that there was a lack of community involvement and participation in most of the projects. A lot of projects which were initiated by government agencies and donors failed in rural areas. A holistic approach to development at the local level should be followed to tackle challenges faced by rural communities. This research indicated that the fish conservation project contributed positively towards improving the livelihood status of the people in the ward. The successes of this programme can be attributed to proper and organised coordination between all stakeholders, which include non-governmental organisations, Wildlife Authority and the community at large.

The researcher also observed that the income levels of most community members improved after the inception of this programme. This was mainly because fish had a ready market in the area and even beyond. So most community people could sell their fish easily and generate income. The findings of the research also indicated that most of the village households managed to acquire various assets through the selling of fish ranging from kitchen assets to agricultural assets. However, there were also some challenges that were encountered in the exercise and these include high cases of poaching and conflicts among the beneficiaries.

5.5 RECOMMENDATIONS

It is clear from the findings that the fish conservation programme has managed to improve the livelihood status of the people. However, there were some challenges that community members faced in the implementation of the programme that are likely to reduce the benefits from the project. Therefore, the following specific recommendations among others should be adopted in an attempt to sustain the income generating projects as a livelihood strategy for rural communities:

According to the research findings, the implementation of fish conservation project is associated with a number of challenges some of which relate to a lack of empowerment. So there is a need for the training of Village Community Facilitators (VCF) who by means of Participatory Development Methodologies will be responsible for assisting local communities to develop their development plans through fish conservation. These would be the empowerment facilitators at the village and ward level, which will be selected by village community members after agreeing on the suitable criteria for selection. They will magnify their efforts in the local community with a view to helping their fellow grassroots members realise their potential in contributing to the attainment of the Sustainable Development Goals.

The Parks and Wildlife Authority also indicated mismanagement, poaching and conflicts among the community members as another challenge in fish conservation. So there is need for the formation of a Community Action Plan that will be formulated through PDM and should be within this strategic planning context. This means all the activities will be fully participatory, SDG, local asset driven, easily tailored into Local Level Integrated Systems (LLIS), decentralised, monitored and evaluated in a participatory fashion.

To address the issue of vandalisation of community fishing property and equipment, the non-governmental organisations together with other stakeholders should empower the communities on Asset Based Community Development (ABCD), which is basically a subset of the PDM, which looks at mobilisation of and utilisation of community asset for economic development and information sharing. It is a Participatory Project Management Tool that aims at discovering community strengths by collecting information and explaining to the community successes leading to the augmentation of appreciative

enquiry that defines the community's common dream, discover the establishment of the local communities that map assets and identify individual skills, natural and physical assets, and eventually mobilise and link these assets for their own economic development. Enforcement of laws that govern the use of this equipment should also be put in place to punish the offenders (Alkire, 2012).

Income generating projects is one of the strategies to reduce unemployment in rural areas. The government is supposed to take these projects as a strategy to fight unemployment both in urban and rural areas. A greater number of the respondents indicated that the project assisted them with income. The government's main agenda is to fight poverty and support self-empowerment. The much needed support from the state is capacity building through business workshops to equip members with important skills such as financial management, conflict management and problem solving as well as giving the necessary financial support.

Lastly, Fish World Centre (2006) recommended specific actions to enhance the subsectors' contribution which could include:

- Strengthen the organisational capacity and participation of fishing communities in the policy formulation and implementation process.
- Addressing the factors that make small-scale fisheries vulnerable and currently reduce their capacity to poverty reduction.
- Enforcement of laws in order to reduce poaching activities and put in place strict punitive measures to offenders.

5.6 AREAS OF FUTURE RESEARCH

This research focused on a specific area. For generalisation of my findings across the country, it will be much helpful and interesting for future researches to look at other communities. Communities vary, especially in their levels of education and interest in research participation. Some of the households in Maranda at first were not interested in answering the questionnaires and welcoming the researcher. This will make an easier comparison of my findings from Maranda Ward 9 with other communities in Zimbabwe. In

addition, the research indicated a positive contribution of community participation in improving own lives through fish conservation.

Further research is required in areas such as determination of fish consumption patterns of poor households, the nutritional value of fish compared to other sources and the impact of fish intake on improved nutritional status in developing countries where under nutrition is a major public health problem. More so, research can be conducted focussing on the impact of culture towards the success of income generating projects. Such research need to look at the influence of collectivist culture in transforming rural lives. The researcher would like to recommend future researchers to examine the influence of culture towards success of projects in rural areas because people tend to have a variety of norms, beliefs and values. Some of these might be adding value to the project and others are stumbling blocks, like individualistic tendencies.

Based on my research questions, the findings did not address the challenges towards accessibility of income generating projects. The researcher realised that not all households had access to the project and also not all are enjoying its benefits. In fact, the researcher realised certain disparities which are being created by these income generating projects. The individuals benefiting from them tend to break the vicious cycle of poverty and those not benefiting remain trapped in poverty and dependency. It is also worth re-examining the potential of these income generating projects in transforming rural areas so that they thrive socially and economically.

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APPENDIX A

INTERVIEW FOR THE PARKS AND WILDLIFE AUTHORITY

1. As the Parks and Wildlife Authority, are you actively involved in the daily activities of the fish conservation programme? If yes, what are your daily duties?
2. What benefits has this programme brought towards improving the livelihood status of the people?
3. What challenges are you facing as an authority and what are the challenges faced by the community in the implementation of this programme?
4. What measures have you put in place as an authority to ensure equitability, sustainability and accountability to the programme?
5. Are the communities complying with the stipulated measures to ensure maximum benefits from the programme?
6. What do you think needs to be done to improve the continual smooth running of fish conservation programme?

APPENDIX B: INTERVIEW WITH THE CARE INTERNATIONAL PROGRAM OFFICER

1. What was the major aim of your involvement in the fish conservation programme?
2. Among the programmes that you are carrying out as a humanitarian organisation, can you say that the fish conservation programme is a success in improving the livelihood status of the people in the ward?
3. What challenges are you facing and the community in the implementation of this programme?
4. How best can these challenges be addressed from your organisational point of view?
5. What benefits has this programme brought in this area in transforming the livelihood status of the people?

APPENDIX C: FOCUS GROUP DISCUSSION GUIDE

1. How was the general livelihood status of this community before and after the fish conservation programme?
2. Can one generally say that the fish conservation programme improves the livelihood status of the community?
3. If yes, what major improvements and in which spheres of life can you say are more significant in this ward?
4. What are the challenges faced by the community and the best way to encounter them for successful implementation?

APPENDIX D: QUESTIONNAIRE FOR THE HOUSEHOLDS

HOW TO COMPLETE THE QUESTIONNAIRE

Some of the questions can be answered by simply ticking the box (☑). Very little information will need to be looked up. If you cannot give or obtain a precise answer, make your best guess or approximation.

If you think that additional comment is necessary, please use the space provided at the end of the questionnaire.

If you have any queries, please contact the researcher at:

Mr Pardon Mufudza

PO Box 738, Thulamahashe 1365 South Africa

Cell: 0839989640 /083 3707196

E-mail: pmufudza@yahoo.com

This questionnaire is purely for academic purposes on assessing the impact of fish conservation on rural livelihoods. The researcher Pardon Mufudza is a Master of Development studies student (201429448) at the University of Limpopo, Turfloop Graduate School of Leadership. The research is being conducted to fulfil the requirements of the programme.

Your cooperation is highly appreciated.

SECTION A: PERSONAL INFORMATION

Please tick where appropriate and fill in the spaces provided

1 (a) Name of village of the respondent.....

(b) Gender: Male Female

(c) Education level:

| | |
|-----------|---|
| None | 0 |
| Primary | 1 |
| Secondary | 2 |
| Tertiary | 3 |

SECTION B: ASSESSING THE CONTRIBUTION OF FISH CONSERVATION IN TRANSFORMING RURAL LIVELIHOODS

2(a) Are you participating in the fish conservation program?

Yes

(b) If yes, what is your role in the project?.....

(c) What benefits are you getting from this program since inception?

(d) Compared to before you joined the project, how is your economic situation? (**Mark only one option**)

| | |
|--------------------|---|
| Better than before | 1 |
| Same as before | 2 |
| Worse than before | 3 |

(e) Do you have any assets obtained through selling fish?

Yes

No

If yes, please explain

.....
.....
.....

(f) Which natural resources are of great importance to you?

.....
.....

(f) Which one of the resources generates more income to you?

.....
.....

3(a) How do you rate the fish conservation program in terms of its success in improving the income status of the people?

| | |
|-----------------|---|
| Not successful | 1 |
| Successful | 2 |
| Very successful | 3 |

SECTION C: ASSESSING THE PROBLEMS/CHALLENGES EXPERIENCED BY COMMUNITY AT LARGE

3 (a) What challenges are you facing with regard to fish conservation?

| | |
|---|--|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |

(b) What are the possible suggestions for sustaining rural livelihoods?

| | |
|---|--|
| 1 | |
| 2 | |
| 3 | |
| 4 | |

(c) What recommendations can you provide to solve the problems or challenges encountered during implementation of the programme?

.....
.....
.....
.....