IMPLICATION OF FISHERS’ LIVELIHOODS ON POVERTY REDUCTION ALONG LAKE VICTORIA BASIN: A CASE OF MBITA SUB-COUNTY, KENYA

BY

KETA KIDA JACOB

(B. A PHIL – Urbaniana)

A RESEARCH THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES IN PARTIAL FULFILMENT OF THE AWARD OF MASTER DEGREE IN DEVELOPMENT STUDIES OF THE FACULTY OF ARTS AND SOCIAL SCIENCES, DEPARTMENT OF SOCIAL SCIENCES, KISII UNIVERSITY.

NOVEMBER, 2017
DECLARATION
I declare that ‘Implication of fishers’ livelihoods on poverty reduction along Lake Victoria Basin a case of Mbita sub-county, Kenya’ is my unaided work and that all the sources that I have used or quoted have been indicated by means of complete references. I further declare that the thesis has never been presented before for examination for any degree in any other University.

Name: Keta Kida Jacob Reg. No. MAS21/60052/15

Sign________________ Date________________

DECLARATION BY THE SUPERVISORS
This research thesis was prepared under our joint supervision and guidance and is marked as part of the university examination by us being the joint supervisors appointed by the Kisii University, Development Studies.

Dr. George Mose Signature________________ Date
________________

Senior Lecturer
Department of Social Sciences
Faculty of Arts and Social Sciences
Kisii University

Dr. Linet Hamasi Signature________________

Date________________

Senior Lecturer
Department of Social Sciences
Faculty of Arts and Social Sciences
Kisii University
DECLARATION BY STUDENT

i. I declare I have read and understood Kisii University Postgraduate Examination Rules and Regulations, and other documents concerning academic dishonesty.

ii. I do understand that ignorance of these rules and regulations is not an excuse for a violation of the said rules.

iii. If I have any questions or doubts, I realize that it is my responsibility to keep seeking an answer until I understand.

iv. I understand I must do my own work.

v. I also understand that if I commit any act of academic dishonesty like plagiarism, my thesis/project can be assigned a fail grade (“F”)

vi. I further understand I may be suspended or expelled from the university for academic dishonesty.

Name__________________________
Signature_____________________
Reg. No____________________________
Date_________________________

DECLARATION BY SUPERVISOR (S)

i. I/we declare that this thesis/project has been submitted to plagiarism detection service.

ii. The thesis/project contains less than 20% of plagiarized work.

iii. I/we hereby give consent for marking.

1. Name__________________________
Signature_____________________
Affiliation_______________________
Date___________________________

2. Name__________________________
Signature_____________________
Affiliation_______________________
Date___________________________
DECLARATION OF NUMBER OF WORDS

Name of Candidate: _____________________________ ADM

NO_____________________

Faculty___________________________

Department_______________________________

Thesis Title:

_____________________________________________________________________

_____________________________________________________________________

I confirm that the word length of: 1) The thesis, including footnotes, is __________ 2) the bibliography is ______________________and, if applicable, 3) the appendices are _______________

I also declare the electronic version is identical to the final, hard bound copy of the thesis and corresponds with those on which the examiners based their recommendation for the award of the degree.

Signed: __________________________Date_____________________________________

(Candidate)

I confirm that the thesis submitted by the above-named candidate complies with the relevant word length specified in the School of Postgraduate and Commission of University Education regulations for the Masters Thesis.

Signed:_________________________ Email__________________________ Tel________________

Date________________________

(Supervisor 1)

Signed:_________________________ Email__________________________ Tel________________

Date________________________

(Supervisor 2)
COPY RIGHT
All the rights are reserved to the author. No part of this thesis herein may be reproduced, stored in a retrieval system or transmitted in any form or by any means electronic, mechanical, recording or otherwise without prior written permission of the author or Kisii University on that behalf.

@ 2017, KETA KIDA JACOB
DEDICATION

The thesis is dedicated to several fishers who continue to wallow in poverty and hopelessness despite their daily struggle, whose sweat and profits are enjoyed by middlemen abroad. It is equally dedicated to my late Dad, Alex and Mom, Margret and to my Grandy Augustine Ogola who guided me with wisdom early enough. I dedicated it to my loving wife Beryl Adhiambo, who withstood with me in every minute of writing, and to our son Alex, bro. Daniel and Sr. Anne for whom this thesis was done.
ACKNOWLEDGEMENT

I would like to sincerely give thanks to those who contributed towards the completion of this thesis especially my family members and classmates Naomi Ongiri, Robert Obonyo and Chris Amasava. I will forever be grateful to William Onyango Agembo, Duncan Okoth and Olivia Klemek for their continuous support during the writing. I would thank my Supervisors Dr. George Mose and Dr. Linnete Hamasi for their unreserved guidance through this thesis writing.

Finally, I thank the almighty God for the gift of life and strength during the time of writing.
ABSTRACT

Small scale fisheries play an important across the world in their contribution to food security, nutrition, sustainable livelihoods and poverty alleviation. While, it’s widely accepted that these contributions are central to sustainable development, there hasn’t been proportionate investment in the sub sector to realise these outcomes. In Kenya, populations living along the lake, are among the poorest in the country. This is because of the climate variability and water hyacinth weed that has choked fishing areas that have pushed many fishers into poverty while others have had their incomes dwindle in the recent years. Livelihood diversification is recognized as one of the coping strategies used by households across the world when faced with such challenging situations. The main objective of the study was to understand the livelihood diversification choices of small scale fishers in Mbita Sub-County and the implication of the choices on their progress out of poverty. The study adopted mixed methods involving the use of both qualitative and quantitative techniques. Multi stage sampling technique was used to select a total of 240 respondents from the four beaches of Mbita Sub-County. Quantitative data collected included the Progress out of Poverty Index (PPI) tool kit, a tool commonly used for poverty assessment. The PPI index, is based on international and national poverty line benchmarks that objectively estimates the likelihood of an individual falling below or above the poverty line categories. The results of this study showed that fishers in Mbita Sub-County, made livelihood diversification choices including casual labour, mining, informal and formal employment and farming even though each category of fishers were motivated differently. Furthermore, fishers who earned <$1.25 a day tended to diversify their labour to earn extra income to cushion them of the risk of no income at all. This was also observed to serve as a safety net for possible seasonal shocks such as low season occasioned by water hyacinth menace. In contrast, Fishers who earned >$2.6 a day were more motivated by desire to accumulate more wealth for the future of their children rather than to cushion them from seasonal shocks. The study found a strong positive correlation r=0.305, 0.01 between the highest level of education attained and progress out of poverty. This suggests that interventions that increased the level of education of household head had a higher likelihood of helping households move out of poverty. The respondents’ perceived causes of poverty were climatic variability, lack of support by local authorities, market access, exploitation and anti-social behaviours leading to high infections of HIV/AIDS, drug usage and bad debtors. The ways to improve the lives were diversification livelihood activities, improve access to assets to improve production, improve access to financial institutions, strengthen society organization, build human capacity through educating them and skills and the introduction of aquaculture.
TABLE OF CONTENT

DECLARATION ....................................................................................................................... ii
DECLARATION BY STUDENT ........................................................................................... iii
DECLARATION OF NUMBER OF WORDS ........................................................................ iv
COPY RIGHT ............................................................................................................................ v
DEDICATION .......................................................................................................................... vi
ACKNOWLEDGEMENT ....................................................................................................... vii
ABSTRACT ........................................................................................................................... viii
LIST OF FIGURES ............................................................................................................... xiii
LIST OF APPENDICES ........................................................................................................ xiv
LIST OF ABBREVIATIONS .................................................................................................. xv
LIST OF ACRONYMS .......................................................................................................... xvi
CHAPTER ONE ........................................................................................................................ 1
  1.1 Background of the study ...................................................................................................... 1
  1.2 Statement of the problem ..................................................................................................... 5
  1.3 Justification of the study ..................................................................................................... 6
  1.4 General Objectives of the study ........................................................................................... 7
  1.4.1 Specific objectives ............................................................................................................ 7
  1.5 Research Questions .............................................................................................................. 7
  1.6 Assumptions of the study ................................................................................................... 7
  1.7 Scope of the study ............................................................................................................... 8
  1.8 Limitation of the study ....................................................................................................... 8
  1.9 Conceptual Framework ..................................................................................................... 9
  1.10 Operational Definition of terms. ...................................................................................... 12
CHAPTER TWO ..................................................................................................................... 13
LITERATURE REVIEW ........................................................................................................ 13
  2.1 Introduction ..................................................................................................................... 13
  2.2 The Livelihood strategies for the fishers .......................................................................... 13
  2.3 Causes of Poverty among the fishers ................................................................................. 20
  2.3.1 The concept of poverty. .................................................................................................. 20
  2.3.2 Perception of the fishers ............................................................................................... 22
  2.3.3 Exploitation by Middlemen .......................................................................................... 23
  2.3.4 Unfavourable weather conditions ................................................................................ 23
2.3.5 Over – dependency on the fish stocks................................................................. 24
2.3.6 Low Income ........................................................................................................ 24
2.3.7 Open access.......................................................................................................... 25
2.4 The challenges of small scale fishers.................................................................... 26
2.4.1 High cost of fishing gears ...................................................................................... 26
2.4.2 High rate of unemployment ................................................................................... 26
2.4.3 Mismanagement of the resources.......................................................................... 27
2.4.4 Weather and climatic conditions......................................................................... 28
2.4.5 Marginalization of the fishers .............................................................................. 28
2.5 Ways to improve the living standard of fishers........................................................ 29
2.5.1 Diversification of Livelihoods ................................................................................ 30
2.5.2 Good Governance ................................................................................................ 31
2.5.3 Improvement of the country’s overall GDP......................................................... 33
2.5.4 Good Market Policy ............................................................................................. 33
2.5.5 Promotion of fish farming...................................................................................... 34
2.5.6 Strengthening community organization................................................................. 35
CHAPTER THREE .......................................................................................................... 38
RESEARCH DESIGN AND METHODOLOGY .............................................................. 38
3.1 Introduction............................................................................................................... 38
3.2 Research Design....................................................................................................... 38
3.3 Study Area ............................................................................................................... 39
3.4 Target Population .................................................................................................... 39
3.5 Sample size ............................................................................................................. 40
3.6 Sample and Sample techniques.............................................................................. 41
3.7 Data collection instruments...................................................................................... 41
3.7.1 Questionnaire........................................................................................................ 42
3.7.2 Interview guide .................................................................................................... 43
3.7.3 Focused group discussion guide ......................................................................... 43
3.8 Data Collection Procedures..................................................................................... 43
3.8.1 Questionnaires...................................................................................................... 43
3.8.2 Interviews............................................................................................................. 43
3.8.3 Focus Group Discussions...................................................................................... 44
3.8.4 Document Analysis.............................................................................................. 45
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1.0 Number of registered fishers in Mbita sub-county</td>
<td>40</td>
</tr>
<tr>
<td>Table 2.0: Factors leading to single parenthood</td>
<td>51</td>
</tr>
<tr>
<td>Table 3.0: Number of years respondents have been in the fishery</td>
<td>53</td>
</tr>
<tr>
<td>Table 4.0: Poverty category of the fishers</td>
<td>54</td>
</tr>
<tr>
<td>Table 5.0: Poverty category and level of education correlation</td>
<td>55</td>
</tr>
<tr>
<td>Table 6.0: Poverty category and fishing experience</td>
<td>56</td>
</tr>
<tr>
<td>Table 7.0 other sources of livelihood</td>
<td>57</td>
</tr>
<tr>
<td>Table 8.0 Other sources of livelihood poverty category crosstabulation</td>
<td>61</td>
</tr>
<tr>
<td>Table 9.0: Poverty category and other sources of income correlation</td>
<td>62</td>
</tr>
<tr>
<td>Table 10.0: Monthly/ annual income is enough</td>
<td>64</td>
</tr>
<tr>
<td>Table 11.0: Adequate provision of educational needs from fishery</td>
<td>64</td>
</tr>
<tr>
<td>Table 12.0: Impacts of diversified livelihoods</td>
<td>66</td>
</tr>
<tr>
<td>Table 13.0: Crosstabulation of education needs and poverty category</td>
<td>67</td>
</tr>
<tr>
<td>Table 14.0: Who determines the price of fish in Mbita Sub-County</td>
<td>68</td>
</tr>
<tr>
<td>Table 15.0: Causes of poverty among the fishers of Mbita Sub-county</td>
<td>72</td>
</tr>
<tr>
<td>Table 16.0: Access to relevant information on fishery</td>
<td>80</td>
</tr>
<tr>
<td>Table 17.0: Acquisition of tools for production</td>
<td>83</td>
</tr>
<tr>
<td>Table 18.0: Hazards faced by the fishers in Mbita Sub-county</td>
<td>83</td>
</tr>
<tr>
<td>Table 19.0: Problems faced by the fishers in Mbita sub-county</td>
<td>85</td>
</tr>
<tr>
<td>Table 20.0: Solutions to the problems faced by fishers in Mbita Sub-County</td>
<td>94</td>
</tr>
<tr>
<td>Table 21.0: Poverty eradication assistance</td>
<td>97</td>
</tr>
<tr>
<td>Table 22.0: Future prospects of the fishery</td>
<td>103</td>
</tr>
</tbody>
</table>
### LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figures</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1.0 National fish productivity by fishery category</td>
<td>3</td>
</tr>
<tr>
<td>Figure 2.0 DFID conceptual framework</td>
<td>9</td>
</tr>
<tr>
<td>Figure 3.0 Age distribution</td>
<td>49</td>
</tr>
<tr>
<td>Figure 4.0 Marital status of fishers</td>
<td>50</td>
</tr>
<tr>
<td>Figure 5.0 The highest grade that female head completed</td>
<td>52</td>
</tr>
<tr>
<td>Figure 6.0 Livelihood strategies</td>
<td>58</td>
</tr>
<tr>
<td>Figure 7.0: Are you able to save</td>
<td>69</td>
</tr>
<tr>
<td>Figure 8.0: Where do you save</td>
<td>70</td>
</tr>
<tr>
<td>Figure 9.0: Are you able to access loans</td>
<td>71</td>
</tr>
<tr>
<td>Figure 10.0: Access to formal or informal training</td>
<td>79</td>
</tr>
<tr>
<td>Figure 11.0: Support from the Government</td>
<td>81</td>
</tr>
<tr>
<td>Figure 12.0: Support from the NGOs</td>
<td>82</td>
</tr>
<tr>
<td>Figure 13.0: Conservation of natural resources</td>
<td>92</td>
</tr>
<tr>
<td>Figure 14: Community organizations.</td>
<td>93</td>
</tr>
</tbody>
</table>
# LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix 1.0: Questionnaire</td>
<td>121</td>
</tr>
<tr>
<td>Appendix 2.0: Interview guide</td>
<td>125</td>
</tr>
<tr>
<td>Appendix 3.0: FGD guide</td>
<td>126</td>
</tr>
<tr>
<td>Appendix 4.0: The PPI guide table</td>
<td>127</td>
</tr>
<tr>
<td>Appendix 5.0: Map of Mbita Sub County</td>
<td>128</td>
</tr>
<tr>
<td>Appendix 6.0: Researcher’s Photos</td>
<td>129</td>
</tr>
<tr>
<td>Appendix 7.0: Introduction letter to NACOSTI</td>
<td>130</td>
</tr>
<tr>
<td>Appendix 8.0: NACOSTI Authorization</td>
<td>131</td>
</tr>
<tr>
<td>Appendix 9.0: Research Permit</td>
<td>132</td>
</tr>
<tr>
<td>Appendix 10.0 Plagiarism Report</td>
<td></td>
</tr>
<tr>
<td>Appendix 11.0 Publication</td>
<td></td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Dr.</td>
<td>Doctor</td>
</tr>
<tr>
<td>Hr.</td>
<td>Hour</td>
</tr>
<tr>
<td>Kg</td>
<td>Kilogram</td>
</tr>
</tbody>
</table>
**LIST OF ACRONYMS**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUC</td>
<td>African Union Commission</td>
</tr>
<tr>
<td>BMU</td>
<td>Beach management unit</td>
</tr>
<tr>
<td>FAO</td>
<td>Food agriculture organization</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>Human immune deficiency syndrome/ acquired immune deficiency syndrome</td>
</tr>
<tr>
<td>HPI</td>
<td>Human poverty index</td>
</tr>
<tr>
<td>IUU</td>
<td>Illegal unreported and unregulated</td>
</tr>
<tr>
<td>LVBC</td>
<td>Lake Victoria Basin Commission</td>
</tr>
<tr>
<td>LVFO</td>
<td>Lake Victoria Fishery organization</td>
</tr>
<tr>
<td>MoALF</td>
<td>Ministry of agriculture, livestock and fisheries</td>
</tr>
<tr>
<td>MT</td>
<td>Metric Tons</td>
</tr>
<tr>
<td>NACOSTI</td>
<td>National commission for science, technology and innovation</td>
</tr>
<tr>
<td>NEPAD</td>
<td>New Partnership for African’s Development</td>
</tr>
<tr>
<td>NGOs</td>
<td>Non-governmental organizations</td>
</tr>
<tr>
<td>PPI</td>
<td>Progress out of poverty index</td>
</tr>
<tr>
<td>SLA</td>
<td>Sustainable livelihood approach</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Science</td>
</tr>
<tr>
<td>UNEP</td>
<td>United Nations Environmental programme</td>
</tr>
<tr>
<td>UNDP</td>
<td>United nations development program</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollar</td>
</tr>
</tbody>
</table>
CHAPTER ONE

1.1 Background of the study

According to Mathew (2001), fishery activity has been passed on from generation to generation for livelihood and food security purposes. The rights of the fisher should be strengthened to a secure a just livelihood in order to harvest and manage local fish stocks (FAO, 2005). Securing of fishing grounds is an appropriate way to control over exploitation of fish stocks in coastal and inland fisheries. This way would help reduce the vulnerability of small scale fishers to poverty.

The vast majority of the world’s fishers and fisher farmers which is about 96.6% of the global total or 40 million people live in the developing countries. About 34 million of fishers are artisanal who use apparently small traditional craft powered by sails and fish closer to the shore (FAO, 2007). This means that majority of small scale fishers live in developing countries where they mostly use small crafts and boats that has made them not able to get more catch.

The fisheries industry occupies an important role in the global economy, eco-system and human diets. Fishery is a great foreign exchange earner in the world, a source of food security and a source employment opportunity to many people. Around 100 million people are estimated to be involved in the small scale post-harvest sector; processing, transport and marketing (FAO, 2007). Fish production has increased immensely at the global level in the last recent five decades from 20 million tones in 1960 to about 166 million tones in 2014. The global increment of fish consumption from 9.9kg in the 1960s to 20kg in the year 2014 has apparently increased the world
per capita. The increment has been attributed to the following factors; population increase, more incomes and urbanization and help by extensive fish production and excellent distribution of fish products (MoALF, 2015).

In African fishery is characterized by both large and small-scale fishing which contributes greatly to employment opportunities and source of livelihood to many people (FAO, 2014). Fishery is one of the major contributors to the GDP of most African countries. Marine small-scale fishery is contributing greatly to the GDP of some of the west African countries like Ghana, Mauritania and Serbia Leone, in central African countries where it is the inland small-scale fishery that contributes greatly to the GDP of countries such as DRC and Uganda and in South African countries, it is marine large-scale fisheries that contributes to GDP (FAO, 2014).

The Small scale- fishing in East Africa is mainly using traditional methods and it is subsistence in nature. It has been a source of food security to the people and created more employment opportunities to many people who are involved hence supporting the livelihoods of about 3 million people (LVFO, 2009). In the recent years the value of catch at some beaches is estimated at more than USD 550 million and export value of USD 260 million (LVFO, 2013). The fishery produce in East African is estimated to be 1 million tons per annum of which 14.8 percent produce come from the Kenyan, 66.6 percent from the Tanzanian and 18.6 percent from Ugandan (Regional Catch Assessment Synthesis Survey Report, 2005-2011). This indicates that fish catch has been increasing in the few years which can have an influence on the livelihoods people and reduce vulnerability to poverty.

Small scale fishery contributes to the GDP of the three countries of east African for example in Kenya it accounts for 2%, of the GDP and both Tanzania and Uganda it is
for 3% (World Bank, 2009). The governments of the east African countries also earn measurable revenue from licensing of fish-processing plants, registration of boats and issuing fish-dealers (LVFO, 2008).

In Kenya fishing is done in the following Lakes; Lake Naivasha, Jipe, Victoria, Turkana and Baringo: Rivers are Tana River dam and Tana delta: Indian Ocean. The production from the Lakes and Rivers of Kenya was about 143,828 MT in 2014 which translated to about Kshs 16,559,534,000 and this accounted for 86 percent of the national fish production in Kenya where 81.49 percent of the fish production is from Lake Victoria in year 2014 (MoALF, 2015). The Inland fisheries capture was about 81% (134.840 MT) and marine was about 5% (8,988) metric tones and aquaculture was about 14% (24,096) metric of the country’s total fish production in 2014 as shown by figure 1.0 below.

![Figure 1.0 National Fish production by fishery category (MoALF, 2015)](image)

Lake Victoria is the largest inland fishing ground in Kenya with the highest number of fish production for both export and local consumption. There are three main predominant commercial species in Lake Victoria, Nile perch (*Latesniloticus*), Tilapia (*Oreochromis niloticus*) and Dagaa (*Restrineobolaargentea*) (LVFO, 2013). In 2014 there was an improvement of fish production from Lake Victoria and aquaculture.
Despite all these important contributions of both large and small-scale fishing in the world local, the state of destruction cannot be understated as many studies on the livelihoods have indicated that most of the small-scale fishers are living in poverty where there are many problems like social ills and health related issues (FAO, 2007). According Payne (2000), small scale fishers are poor because they can’t access government facilities and the government policies have also failed to address their problems. They are poor due lack of opportunity to acquire physical assets like land and infrastructure (De Soto, 2000). Bene (2003) also argues that these people are poor because of open access to the natural resources which they depend. However, these might not be true causes of the poverty among the fishing communities as some of them might have joined fishery as the last resort and they had no access to the government institutions. At this point the fishers are recommended to have a diversified livelihood to capture and fight the growing state of vulnerability and poverty.

According to Ellis (2000) livelihood diversification is a process from which a given society built on a growing different portfolio of assets and activities to survive and increase their living standards. Livelihood diversification is a process by which households engage in a multiple income generating activities (Brugere et al., 2008). The livelihood diversification can only be achieved by improving people’s livelihood chances, developing a free flow of incomes in the rural areas, increasing human capital and decreasing dependency on one kind of natural resource (Ellis & Allison, 2004).

The small-scale fishers in Mbita Sub-County as other small-scale fishers in the developing countries use fishery as livelihoods plus other livelihoods to supplement or alternative livelihoods to reduce poverty (Odhiambo, 2013). Therefore, there is need
to generate specific knowledge to guide development of livelihood diversification to enable the communities affected by the over-depending on one kind of livelihood which makes them more vulnerable to poverty and lack resilience to poverty. The study aimed at generating new knowledge on the fishers’ livelihoods implications on poverty reduction along Lake Victoria Basin.

It was conducted among the fishers along Lake Victoria Basin which suitable for the study because fishery is the main source of livelihoods among other activities and so the study sought the implications of the livelihoods diversification, livelihood strategies, causes of poverty, livelihood challenges and poverty eradication processes which has been investigated by other studies.

1.2 Statement of the problem

Fishery is an important sector in developing countries economy especially Kenya where it provides employment, food supply and foreign exchange. Even though there is a big ability in fishery industry some of the small-scale fishers are still vulnerable to poverty. According to Pomeroy et al., (2006) the economic status of the small-scale fishers in developing countries is very fragile because they majorly depend on one natural resource. Alverson et al., (1994) argues that their crisis is adding due to the over dependency and over fishing of the stocks. These lead to low income which is very uncertain (Allison & Ellis, 2001).

The small-scale fishers in Mbita Sub-County also engaged in a diversified livelihood as other small-scale fishers throughout the world to reduce the vulnerability to poverty (Odhiambo, 2013). This study therefore sought to investigate the impacts of these livelihoods on poverty reduction among the community of fishers in Mbita Sub-County as this has not been captured by any study.
The study also looked at livelihood strategies used by these fishers, the causes of poverty among the fishers, challenges faced by the fishers in Mbita Sub-County and the solutions to the challenges faced by the fishes in Mbita Sub-county.

1.3 Justification of the study

This study will help the policy makers to fine tune their holistic policies in solving problems of the fishers. The findings from this study will alert the policy makers to review their policies and come up with the policies that can solve the problems of the fishers. The result of study is an important tool for policy makers when creating, integrating and embedding small scale fishers in the fishery industry.

The study would help the management board of fishing industry to review their laws and terms of fishing in order to help small scale fishers live a good life. It will also help the management by taking the tools used in this study to build fishing communities’ knowledge on issues concerning their livelihoods challenges.

The small-scale fishers need to develop their knowledge on diverse livelihoods to reduce vulnerability poverty and to increase resilience to poverty. This knowledge will also be used by the Government and other development partners to prioritize development interventions among the small-scale fishers and neighbouring people who depend on other exhaustible Natural resources.

The study will help in filling the gaps in literature by providing the impacts of livelihoods strategies of the fishers on poverty reduction. The study is also important as it has provided the livelihood strategies, causes of poverty and challenges faced by the small-scale fishers. The recommendations of this study will be used by future researchers in this field to fill the gaps that have not been filled by this study.
1.4 General Objectives of the study

The main objective of this study was to examine implication of fishers’ livelihoods on poverty reduction along Lake Victoria Basin; a case of Mbita Sub-County, Kenya.

1.4.1 Specific objectives

1. To find out fishers’ livelihood strategies along Lake Victoria basin; A case of Mbita Sub-County.
2. To investigate the causes of poverty among the fishers along Lake Victoria basin; a case of Mbita Sub -county
3. To determine the livelihood challenges of fishers along Lake Victoria basin; a case of Mbita Sub- County.
4. To explore the ways to improve the living standard of the fishers along Lake Victoria basin; a case of Mbita Sub-County.

1.5 Research Questions

1. What are the fishers’ livelihoods in Mbita sub-County?
2. What are the factors leading to poverty among the fishers in Mbita sub- county?
3. What are the challenges experienced by the fishers in Mbita- sub county?
4. In what ways can the living standards of fishers in Mbita sub- county be improved?

1.6 Assumptions of the study

The study assumed that fisher’s livelihoods does not reduce poverty among the fishers in Mbita Sub- County.

The study assumed that poverty among the fishers are caused by lack of saving by individuals in Mbita Sub- County.
The study also summed that challenges faced by the fishers is market for the fishers Mbita Sub-County.

1.7 Scope of the study

Artisanal fishing is important in the lives of various groups of people in the study area who are termed as fishers. The geographical scope of the study four selected beaches of Mbita Sub-County which are Nyamasare, Koguna, Litare and Lwanda Rombo. The study was conducted among fishermen, processors, Mongers, fish transporters, gear sellers, loaders, laborers, fuel and wood suppliers within the selected beaches of Mbita Sub-County. This is because fishery related activities are their main source of livelihoods of those living along the Lake basin even though there are other sources of livelihoods which they engage in to earn a living and so it was important to for the study to look at the implications of other livelihoods on the poverty reduction. This study however, did not capture the consumers of fish, non-fishers and religion of the fishers. The reason behind is that consumers are not affected by the fish supply as some of them do not know how to fish and livelihoods are not so much affected by the religion.

1.8 Limitation of the study

Accessibility was a limitation to the study as some of the beaches were not accessible due to poor roads network where one must use canoes /boats to access them. This is also contributed by the roughness of the lake due to high tides that made it hard for the boats /canoes to move from one beach to another. Sometimes the researcher had to wait until the muddy road is passable before going to the study area and in the case of rough lake the researcher had to wait for hours until the weather normalises.
The unavailability of the fishers was a limitation. This is because most fishers work at night and early in the morning while during the day they are asleep. This made it difficult to be interviewed and fill questionnaires. The researcher had to go early enough and wait for them. Though some of the came when they are already exhausted. For those were found already a sleep the researcher had to wait for them until they wake up.

The other limitation was false or exaggerated information with a view that they were going to receive material gain inform of stipends. The researcher explained the aim of the research to them.

Mistrust to the strangers was encountered as some of the fishers were not ready to share openly their economic status. This issue was tackled by the researcher through convincing the respondents that the information will be confidential. This was also solved by the help of research assistant, chief of the area and beach management unit recommendation.

1.9 Conceptual Framework

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Intervening Variable</th>
<th>Dependent Variable</th>
</tr>
</thead>
</table>

![Conceptual Framework Diagram](http://www.livelihoods.org/info/Tools/SL-Project.ppt)
The implications of fishers’ livelihoods on poverty reduction is based on the sustainable livelihood framework by Department for International Development. The independent variable of this study is fishers’ livelihood (five assets), Dependent variable of this study is poverty reduction (livelihood outcomes) and the intervening variables of the study are policies, structures, institutions and processes.

The livelihoods of the fishers are built on the five assets which are human, social, natural, physical and finance. These five assets are the ones that are influenced by the intervening variables to give us the dependent variable which is livelihood outcome (poverty reduction). In the event of good policies, good government structures and private structures, good laws and institutions then these five livelihood assets of the fishers will be increased and affected positively thereby increasing their well-being, increasing food security and reducing vulnerability to poverty and so in this case the poverty would be reduced.

When the policies, structures, laws, and institutions are bad then the five livelihoods assets of fishers will be affected negatively where the results are, increased vulnerability, reduced well-being, food insecurity, low income and unsustainable use of natural resource. The livelihood outcomes of the fishers depend on the livelihood strategies of the fishers which is based on the five assets. The intervening variables will only influence the existing livelihood assets to produce the outcome.

The human assets are education; formal and informal skills, health and knowledge. The Natural assets are land, forest, wildlife, water, fish and minerals. The physical assets are shelter, infrastructure, buildings, tools and fishing gears. Financial assets are cash income, credits and savings and the social capital is formal and informal.
institutions, associations, extended families, local mutual support mechanism (Schreckenberg et al. 2010). Strategies are those activities that people engage in to attain livelihoods. The livelihood strategies differ according to the ability of an individual. The livelihood outcomes are whatever people achieve after involving in the livelihood strategies which leads to good is improved livelihoods like more income and good health.

The vulnerability contexts are external environment such demographic, economic and natural that people live in. The lives of people are influenced directly or indirectly by the shocks and trends such as population growth, conflicts, and natural disasters, seasonality of prices or production and epidemics. Unfortunately, the poorest people of the world are unable to cope with these shocks and stress, which makes them even more vulnerable. Even when trends enhance economic growth the poorest are the last to benefit, due to lack of assets (DFID 1999).
1.10 Operational Definition of terms.

**Artisanal Fishing**- Small-scale fishing where they use traditional crafts, methods and hands to catch fish.

**Aquaculture**- Rearing or keeping fish in the dug ponds along the lakes or rivers.

**Fishers**- Men and women who are involved in catching of fish, processing, selling and owns fishing gears and boats.

**Poverty**- When one is not able to meet his/her basic needs from the economic activity they are undertaking and does not to live a good life.

**Livelihoods**- Capabilities, activities and assets (material and social) resources that contribute to a means of living.

**Livelihood challenges**- Things or conditions that hinders the exploration of livelihoods.

**Livelihoods strategies**- The ways and means that people use to earn a living.

**Living standards**- The socio-economic class that certain people belongs to. For example, low living standards earnings are below poverty line and high living standards means the earnings are above poverty line.

**Fisheries or Fishery**- One or more stocks of fish or any operations based on such stocks which is a unit for conservation and management, taking into account geographical, scientific, technical, cultural, economic and recreational.

**Access to resources**- livelihoods of many are based on equitable access to, and secure tenure of land, fisheries and forests.

**Sustainable**- Maintenance or enhancement of resource productivity on long-term basis.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter locates the study in the scholarly context by reviewing literature on the fishers’ livelihoods diversification in relation to the objectives of the study. This study is based on an exploration of published works, reports, documents and journals to gain insight into fishers’ livelihoods and poverty along Lake Victoria basin, a case of Mbita Sub-county. This section also discusses the following; livelihoods strategies of fishers, causes of poverty among the fishers, problems faced by fishers and ways to improve the lives of the fishers.

2.2 The Livelihood strategies for the fishers.

According to Allison (2000) the livelihood of an individual or a group of people as a concept composed of some factors that may affect the vulnerability or strength. In light to this, livelihood comprise of capabilities, assets both material and social resources, activities through which one earn a living and reduce risk in life. Allison and Ellis (2001) partly agreed with Allison (2000) that livelihood of the individual or household are availability of natural resource, physical resources, human resources, financial resources and social capital resources. The access to these livelihoods resources also forms part of the livelihood. When the Livelihoods are able cope with and recover from stresses and shocks and maintain its capabilities and assets both now and in the future, while not undermining the natural resource base then it will be sustainable livelihoods (Chambers and Conway, 1991 & DFID, 2006).

According Pameroy (2013), livelihoods strategies are of different kinds; there are those that enhance people living standards, those that diversify or supplements
people’s living standards and alternative livelihoods. Enhancing livelihoods do focuses mainly on adding value to the already existing traditional economic activities for example farming enhances fishing.

The enhancing livelihood Strategies increases the people involved up the value chain by increasing the income from the ongoing economic activities that are supporting, providing higher and sustainable income streams.

Supplemental or diversifying livelihoods strategies are meant to reduce household over-relying on one particular source of livelihood for income and food. Pameroy explained that diversification strategy sometimes may include some elements of enhancing the already existing livelihoods and adopting “supplemental” strategies making current practices more sustainable (Pameroy, 2013). This is not risky as alternative livelihoods which need larger investment than simply enhancing the ongoing livelihoods activities. The best example of supplement diversification of livelihood is when one engages in fishing at the same time engaging in other economic activities for an extra income.

Alternative livelihood is a situation where one needs to extend support to start and maintain themselves in terms of material support, finance support and technical support, and material input from the community members, business community and government (Pameroy, 2013). From the above, alternative livelihoods is a situation where one practices one economic activity for a living and when it goes down then the person may opt for another livelihood as for the case of fishermen then they can engage in farming.

When the resources are fluctuating, people are facing livelihood crisis, uncertainties and shocks and the poor are not able to withstand these shocks then the above strategy
may be adopted to reduce the vulnerability (Allison & Ellis, 2001; Macfadyen & Corcoran, 2002; van Oostenbrugge et al., 2004). In light to this, a strategy is a response to the shocks, crises and uncertainties that affects the livelihoods, the fishers form a livelihood strategy to respond to the fall of fish stocks, exploitations by middlemen and weather changes that affects fishing.

In studying livelihoods, one should use a known approach which is will enable them to understand livelihood strategies of the poor people, the approach is known as Sustainable Livelihood Analysis (SLA). According to Allison (Unpublished), Sustainable livelihood analysis (framework) is used to understand the adaptive strategies and management policy of artisanal fishers in the developing countries. SLA explains adaptive strategies by taking a fuller view of identifying and building on the existing assets of people and ensuring the fishers are at the centre of the framework (FAO, 2006), comprehending the difficulties that coastal people lives in and their livelihood adoption and results (Pameroy, 2013). It is a tool that is used to enhance our comprehension of livelihoods, especially the livelihoods of the people who have less income (DFID, 1999). The approach is community centred to save the natural resource from being over exploited, it identifies all assets that they own and from those assets it will be for them to come with a strategy that is sustainable.

Fishers in some parts of the world practice a semi- subsistence diversification where they combined fisheries with a series of activities like farming. They do farming along with fishing or engage in farming to have food for consumption and nutrition, ways of barter trade or participation in reciprocal exchange and social networks and diversification for jobs and consumption softening; risk reduction and coping strategies struggling against shocks (Smith et al., 2005) when the catch is low as a livelihood activity to prevent the vulnerability. A study that was done in Lofoten
islands between 1802-1920 among the fishermen confirms that fishers are actually fishers–farmers where youths engage actively in fishing, adults participate less in fishing but work on the small farms and elders rarely participates in fishing but concentrates on the farming Dyrvick cited in (Allison unpublished).

Allison & Ellis (2001) are in support of the study done in Indonesia where individual fishers switch in between rice-farming, tree- crop farming and fishing to respond to seasonality and inter-annual changes in the availability of fish catch. Pameroy (2013), also agrees with (Allison, unpublished & Allison & Ellis (2001) that fishery is not the only source of livelihood and indeed, when farming and fisheries are combined then there is capability of evading poverty and all the other sources of livelihoods from fisheries like fish processing plants to tourism put together can employ a good number of people. Farming, tourism and other economic activities help fishers to diversify their livelihoods in order to avoid the over dependency on fisheries resources. Over depending on one natural resource such as fisheries and minerals can lead to exhaustion hence makes it hard for the community depending on them to evade poverty.

Fishers with their family members engage in other income generating activities as supplementary source of livelihoods and these incomes generating activities varies with the regions. Allison (Unpublished) reports the findings of a study that was done in United Kingdom, Norfolk area between 1999- 2003, fishers with their family members run tourist boat trips, repair boats, look after holiday homes, work in bars and restaurants; farm in a small-holding, rent property, produce and sell paintings and crafts; car mechanics as a supplementary source of livelihoods. According to Pameroy (2015), fishing is a wide occupation, in some cases fishers are both multi-species and
multi-gear in nature. This would enable individuals to modify an existing livelihood strategies or new strategies to meet changing conditions.

In contrary to the above, some studies have shown that fishery together with other sources of livelihood recently thought to be of greatest importance to the fishers who are believed to the poorest members our of society (De merode et al., 2004), fishery and other sources of livelihoods are more important economic activity to the household of higher income and living standards than the poorest who are still poor (Allison and Ellis, 2001 & Smith et al., 2005). The diversified or alternative livelihoods strategies help the households with stronger economic power than the poor because of planning and disposition of them households.

This is in line with what Poulton et al., (2001) said that this money got by men from other sources apart from their main sources of livelihood can actually be spent on other things like alcohol and other consumable other than spent on the household livelihood. The poorest fishermen count other source of livelihood as surplus then it ends up in the hands of bar owners and other immoral actions rather than being spent on the household budget.

The fishers have adopted the ‘nomadic’ fishing as livelihood strategy where they move from one territory to the other looking for a place where there is more catch. The fishers move from one fishing area to another or one territory to another in search of good fishing ground and sometimes use their connections to get access to fishing grounds. Allison & Ellis (2001) reports that ‘nomadic’ strategy in North coast (Java Sea) villages where full-time fishers trace seasonal and spatial changes in the availability by long-shore and inter-island migrations. The idea of tracking fish stocks enables fishers and family members to substitute for their household livelihoods when there is low catch in their normal fishing ground. In line with this ‘nomadic’ fishing
where full time fishers follow fish stocks in Southern Bahia, NE Brazil they use ‘godparents’ maintains compressive personal networks extending their fishing flexibility ground to territories that belongs single villages Canoe fishery (Allison & Ellis, 2001). The non-rigid or free access territorial system is another form of ‘nomadic’ fishing system where fishers are allowed to move freely in search of catch distributions and maximizing the yields subsistence fisheries of the Cree in Northern Canada (Allison & Ellis, 2001). According to Hallaire (2015), some fishers engage in illegal fishing beyond the border, migrate permanently or sign temporary contracts with other fishers. This actually supports the point of nomadic fishing as a strategy used by some fishers. Fishers are able to use their personal networks, nomadic fishing, illegal fishing and flexibility fishing to gain access to the fishing grounds when a particular area where they usually fish has low catch. These methods are possible ways for the fishers to reduce the vulnerability to poverty for young people who have the energy to move, those with the network and ‘godfathers’ but for the old people who do not have energy, those who do not have networks and ‘godfathers’ will use not them a livelihood strategy hence they will continue to live in poverty or go down in the poverty index.

Fishers use the consumption pattern and size of the family as a livelihood strategy whereby they can reduce household consumption when the catch low catch and increase their spending on food when the catch is high. Allison and Ellis (2001), explains in the findings of the study where Danish small- scale fishers are ready to reduce the household expenditure or to earn extra coins outside fishing. The Fishers are able to look for cheap or free assistance within the fishing enterprise in time of need and change consumption patterns like one meal a day they are able to save a lot as small household means spending less which is a strategy to reduce vulnerability to
poverty. Fishers can also use cheap labour from the family to increase their household income and source of livelihood. This however, does not help to reduce poverty in way because if one changes consumption patterns and size of the family has no effect on the income of household. Changing consumption patterns means eating less or once a day that the body is not used to and also reducing size of family to ensure that you have few members in the family and spend less.

In some regions, small-scale fishers have used diversified marine harvesting as livelihood strategies to reduce vulnerability to poverty. One can only diversify the patterns of fishing ways in line to the species exploited, fishing areas and gears available. According to Allison (Unpublished), diversified marine activities like growing of mussel; boats crew for sporting, for crabs, lobsters, whelks; netting for sea bass and sea trout in coastal creeks; seining for white bait off the beach; shrimping and cockle dredging; bait-digging, winkle-picking and sapphire gathering in the intertidal zone reduces the vulnerability of the poorest fishers. Fishers use the diversified fishing to supplement for their household livelihoods but these diversified or supplements depends with a region where one lives, they are not the only form of diversified. Friere and García-Allut (2000) reports a study that was done in Galicia NE Spain which supports the diversified fishing where seasonal fishers’ supplements their incomes with range of activities for example retired persons, taxi drivers, shopkeepers and unemployed artisanal fishers to earn a livelihood. The diversified marine harvesting and supplementing activities have always increased the livelihoods of the small-scale fishers.

According Allison and Ellis (2001), fishers along Great Lake in New Cambodia use both private and public properties that which included fisheries resources, intra-household division of labour to optimize complementary livelihood activities. The
fishing communities use solidarity as livelihood strategy where the issues affecting a particular fishing household was also a concern for who live near them, visit, or influence the management of the coast. Policies, institutions and organizations can help by supporting the design of appropriate access regimes and by providing an ‘enabling environment’ comprising good, responsive public services to fishing communities (Allison, unpublished). Fishing is a very risky and unpredictable income generating activity which is also very prone to seasonal and cyclical changes in stock size and location. Diversification of livelihoods can reduce the risks and shocks of livelihood failure by spreading it over many source of income and this can also to help overcome the irregular use of assets like fishing boat caused by weather changes, to reduce vulnerability, to generate financial resources in the absence of credit markets, and confers a host of other advantages in the presence of widespread market failures and uncertainties.

2.3 Causes of Poverty among the fishers

According to Bene et al., (2000), it is usually assumed that most of the small-scale fishers who live in the tropics and developing countries are the poorest and live in the most disadvantaged part of the rural societies. They live in poverty despite the efforts of donor agencies, NGOs, national and local governments, and the communities themselves to alleviate poverty.

This is from the low income they get from fishery due to use of traditional fishing methods and over- depending on one source of livelihood.

2.3.1 The concept of poverty.

Poverty is a very complex and multidimensional concept which has many determinants and is much more than just low earnings. An explicit explanation of
poverty is therefore very necessary to give better definition and understanding, to measure progress towards poverty alleviation targets, to understand who it affects most and the best strategies to tackle it. The pioneer study done in London in 1880 on the poverty defined, the poor are those struggling to obtain the necessities of life and chronic wants (Odangkara, 2001).

According to Odangkara (2001), absolute poverty is measured against the least necessary livelihood to maintain an individual living, and relative poverty is reached against the average living standards of a particular society or by comparison to another society.

Sen (1981), introduced a new concept ‘entitlement’ approach while he was trying to redefine poverty where people’s command over food is not only tied on the production and availability in the market but is also dependent on various factors such as social, economic, cultural and political. Sen further argued that poverty should be seen as deprivation of primary capacities than the mere aspect of getting low income. Kikwani & Son (2006), added that Poverty which results from the lack of command over resources wanted to generate socially determined basic capabilities whereas capability deprivation which are more general and may be caused by many factors.

World Bank (2001), pronounced poverty as deprivation of well-being of an individual while Das Gupta (2003), fundamentally linked poverty to the lack of wellbeing. The wellbeing of an individual include food, good health, a job, having shelter, freedom and having self-esteem. The deprivation of well-being of people can also be seen in the following; social injustice, homelessness, hunger, powerlessness, unemployment, illness, victimization and health care.
For the United Nations Poverty is viewed as a human condition depicted by serious lack of power, security, capabilities, choices, and resources necessary for average living standards (UN, 2001). Poverty is not only manifested in the low income and household consumption but can also include poor health, lack of basic education and risk and vulnerability, a sense of voiceless and powerlessness among the poor (Odangkara, 2001).

According to Onyango, the new perspective recognizes poverty specific context and all the strategies to alleviate poverty. They should account on how poverty is really felt by the poor themselves Onyango et al., (2011). The knowledge on poverty must be gained based on locations, situations and places. This knowledge should be bottom up. The studies reviewed considered the following factors as causes of poverty among the small-scale fishers.

2.3.2 Perception of the fishers

Many small-scale fishing communities are believed to be generally poor, but this should not be the point of reference as they are necessarily poor because their livelihood is fishery. They might have been poor due lack of access to land therefore, opting to fishery for livelihood (Dun, 1989 cited in Bene et al, 2000). The above statement is a contradiction Bene (2003), who said that fishing communities are poor because they are fishers. This might not be true because when referring to fishing as a poor economic activity, one must think of other activities that are related to fisheries that are uncontrolled by fishers like weather conditions and the capability of each individual fisher. The small- scale fishers cannot be poor because fishing is their livelihood. This would mean that even if rich people invest in fishery, they will
become poor. When referring to poverty among fishers’ other factors such the background of fishers and the environment should be taken into considerations.

2.3.3 Exploitation by Middlemen

Abila (2000), small scale fishers are poor due to exploitation by the middlemen, who control the whole market with a lot of money they get from the sale of fish while the fishers themselves are languishing in poverty. This is because fishers are forced to sell to middlemen cheaply thereby incurring huge losses. According to Wedathanthrige (2013), when a fisher can’t get a fair price for catch then they are likely to be poor. This limits the capability of the fishers to generate more income to make them be rich. They therefore continue to be poor due to exploitation. Fishing like any other business where there are expenses, salaries and expected profit but if the profit is negative, it means they are making losses which makes them live in poverty as they are deprived their well.

2.3.4 Unfavourable weather conditions

The unfavourable weather conditions are bad weather, natural disaster like cyclones and hurricanes and high tides. They are very dangerous to fishermen’s lives and so they cannot go out to fish. The changes are raising sea levels, increasing water temperatures, changes in salinity and currents, and more frequent extreme weather affects the movement of fish (Auc-Nepad, 2014). Climate change and disasters are impacting on Africa’s aquatic systems and economies that depend on them (Abila, 2000). These extreme conditions have caused injuries, death and loss of property worth millions hence leading to poverty (Wedathanthrige, 2013). The fishers cannot go to fish during these unfavourable weather conditions due to lack of the fish stock, the gears can be destroyed by the strong winds, big waves can destroy boats and even cause death so during all these periods they will depend on the savings which might
not be there in most cases. During these periods that are uncertain to fishers because they are not sure when they go to fish again as their well-being depend on fisheries therefore they live in poverty.

2.3.5 Over – dependency on the fish stocks

The over dependency on fisheries due to high population and unemployment which has caused heavy reliance on fish stocks. It has led to significant pressure on the resources in many developing countries and in turn make them live in poverty (Auc-Nepad, 2014). Those small scale -fishing communities meet different social and economic challenge as they depend on one specific natural resource as source of income and employment opportunity (Florence, 2012). When more and more people utilize one specific natural resource and there will be over-exploitation. This is known as over dependency on the natural resource that has led to the over exploitation of the fish stock due to unemployment opportunities and this in turn affects living standards of for small-scale fishing households, which represent many people who fully depend on fishing for a living (Khomsatum, 2012). Ogello et al., (2013) argues that lack of clear cut and strictly rules of engagement, common property resources will be subjected to economic stress and shocks such exploitation, which usually results in biological damage to the system.

2.3.6 Low Income

In most developing countries, small scale fisheries do not have the necessary skills to access more lucrative sectors of the economy and get high income to sustain their dependents instead they depend on nature of both marine and inland water capture fisheries which carried as occupational (Auc-Nepad, 2014), of hunting and gathering that leads to low income and in turn makes fishers live in poverty. The low income
earned by fishers is related to exploitation by middlemen (Abila, 2000), unfavourable weather fishing weather conditions (Abila et al., 2000 and Auc- Nepad, 2014). The exploitation by the middlemen leads to low income that cannot make their household live in a better condition and during bad weather fishers will have a rough time during fishing hence have less catch. The signs of low income of fishers are explained by Abila, (2000), when you look at the fishers in the beaches, they look very weak, poorly dressed, drunk and live in poor housing structure.

2.3.7 Open access

‘Open access’ activity in fishery where people have free access to utilize the natural resource that in turn has led to over fishing. Consequently, the fisher’s income remains low. According Clark (1988 cited in Khomsatun, 2012), the problem of overfishing in economic term and the Gordon’s theory of the common property fishery. Over fishing which results into depletion of future fish stocks as a negative externality that can be easily avoided and this is known as the tragedy of the commons (Ogello et al., 2013).

Among these is the open access of the resource itself, which leads to over fishing in coastal and inland waters and results in dwindling stock, poor catch, and a perpetual cycle of poverty among fishermen. According to smith if a resource remains “open-access” in nature, permanent solutions to the double tragedy of over-exploitation of the resources and low incomes are not within but outside the fishery industry by introducing alternative or supplementary sources of income (Smith, 1988 cited in Khomsatum, 2012). In addition to that FAO (2000), supported that open access activity is among many determinants of poverty, wide spread and persistent cause of poverty. In open access where everyone has right to take advantage of nature to
exploit which different with agriculture where people own land and the result of exploitation leads to poverty.

2.4 The challenges of small scale fishers

The challenges faced by small scale fishers are the total problems that fishers encounter from the catching to the last stage of processing the fisheries. These problems are high cost of the fishing gears, unemployment, mismanagement of resources, weather and climatic conditions, marginalization and insecurity.

2.4.1 High cost of fishing gears

The high cost of fishing gears and vessels is a challenge to many fishers as they cannot afford them (Jallow, 2009). As a result of this, some of the fishers have resorted to IUU fishing because they cannot afford the required fishing gears and vessels. According Yao (2013), illegal fishing and mesh has been on the raise with (61.3%) in Africa particularly in West African due to high cost of the required fishing gears and vessels. According to Ministry of Fishery, Livestock and Agriculture the total number of gillnets of all mesh sizes continued to increase between 2000 and 2012 (MoFLA, 2013). There is also increase in use of some non-elective gears especially mono filament nets (LVFO, 2013; Njiru et al., 2014 & Turyaheebwa, 2014). The usage of these unrequired nets has led to the catching of small size that should be allowed to grow.

2.4.2 High rate of unemployment

The high rate of unemployment in the developing is a challenge to fishing industry in most countries, everyone considering fishing as the only source of livelihood. FAO (1996), argues that population pressures and shortages of alternative employment opportunities has attracted many people to fisheries and lack of effective conservation
and management policies have increased the attraction of people to the fisheries as they consider the last resort employment opportunity. According Kofie and Yiborku (2005), over fishing is a major challenge in Ghana due to lack of employment opportunity in the formal sectors as many people turn to fisheries as the last resort. Fishing as the last resort has resulted to reduction in income, profit, increased competition and conflicts over fishing grounds.

According to conference paper no. (13), high growth rate has put pressure on natural resources. This is evident by, the increasing number of those involved in fishing industry now, putting pressure on fish stocks and declining fish stocks.

The lake waters are subjected to increasing environmental threats like industrialization, deforestation, agricultural expansion and increasing urbanization (Scullion, 2013). The sustainability of fisheries resources is basically challenged by the human increase in population and the intensive land use along the lake catchment areas. According to the Ministry of Livestock, Fisheries and Agriculture the number of fishers in Lake Victoria has increased by (4.3%) from (2000-2012) and the number of crafts have increased by (17.0%) from (2000– 2012) (MoLFA, 2013).

2.4.3 Mismanagement of the resources

Mismanagement of the resources by the author is a challenge faced by fishers as Bene (2003), explains that over exploitation of the fisher sources in Lake Volta has been due to management failures. Mismanagement of the resources has led to the over-capitalization of the fishing fleets and over-exploitation of fisheries, environmental deterioration especially degradation and destruction of breeding and feeding areas for many fishes and the use of fishing resources for recreation purposes. Management failure in Lake Albert Uganda has led to the decline in the indigenous type of fish
harvested and the statistics show that the size catch are small an indicator of biological change (Sarnowski, 2004). The fisheries management and authority should control the capitalization in fishing industry, control fishing to avoid the over exploitation and to manage environment to reduce the degradation.

2.4.4 Weather and climatic conditions

Unfavourable weather and climatic condition is a challenge to fishers. This exposes them to physical risks such as waves and high winds, accidents while hauling nets; climate induce risks impacts of global warming on fish productivity; health risks, currency devaluations and increased fuel prices and political and security risks theft and conflicts are eminent challenges faced by fisher Adger et al., (2004). The extreme weather conditions also prevent them from going to the lake fish on a regular basis (Wedathanthrige, 2013). Some areas within the lake area infested with aquatic weed such as see hyacinth and hippo grass due strong winds or floods which has blocked some landing sites or fishing grounds (MoLFA, 2013). Extreme weather conditions and infestation of sea plants have caused physical injuries to the fishers and even death of some and damage of their boats, nets and equipment and houses and property. They have caused economic loss to the fishers such declined catch (Wedathanthrige, 2013). This is a big challenge to most small-scale fishers in African and other developing countries leading to disappearing of fish stocks and landing sites.

2.4.5 Marginalization of the fishers

In some parts of the world, fishers are marginalized due to the nature of their occupation as FAO (2004), argues that fishers are usually marginalized. They cannot access other employment opportunities, access equitable land and access social
services like health and education because of weak political representation. Marginalization of the Fishing communities is evident because they are the major hot spot for HIV/AIDS due to male domineering culture, migratory nature with cash on daily basis, limited recreational opportunities and risky life style (Scullion, 2013). All these conditions are related the poor nature of fishers. According to Omom (2009), HIV/AIDS is a challenge around Lake Victoria as the disease has killed many best fisher, some fishers are weak and cannot with work. Due to the disease orphans and widows are left behind, who cannot do anything but to beg for food from people.

2.5 Ways to improve the living standard of fishers.

Since independence Kenyan Government had initiated several antipoverty policies for example (Sessional Paper No.10 of 1965) where poverty, diseases and illiteracy were identified as the hindrance to human economic development. There after various plans have been put down like Poverty reduction strategy paper (PRSP), Participatory Poverty Assessment Reports (PRAR), National Poverty Eradication Plan (NPEP), District Focus for rural development (DRFD), Mid- term expenditure Framework (MTEF), MDGS and Vision 2030 (Ongesa et al., 2014).

Despite these positive development, most of these policies and plans aimed at eradicating poverty have not succeeded in the past because they did not focus explicitly on improving the living conditions of poor people but on accelerating economic growth through technological, infrastructural development and market-oriented economic policies. The poor have been turned into passive participant in their own development; reducing their ownership of poverty reduction plans (Ongesa et al., 2014). Fishers being among the poorest people in the Country, the persistent existence of poverty among them require a fresh look by the fishers themselves, NGOs, County and National Governments and the world at large.
The Government and other bodies concerned with poverty reduction should use Bottom–Up approach where the communities are involved in formulating policies and identifying the specific projects that will raise the level of development. The poor should be adequately represented in various policy organisations and institutions fighting poverty at the grassroots because the problem and the solution are with them (Omiti et al., 2002).

The study has suggested the following measures as ways to improve the living standards of fishers thereby reducing poverty; Diversification of livelihoods, Good governance, General improvement a county’s GDP, Good market policy, promotion of fish farming and Strengthening of community organization. These factors should help the fishers to be more resilient to poverty and reduces the vulnerability to poverty.

2.5.1 Diversification of Livelihoods

To eradicate poverty among the fishers there is need train fishers the importance of diversification of livelihoods; this will reduce the pressure on one natural resource and spread the risks among many livelihoods. According to Wedanthantrige et al., (2013) diversification of livelihoods is a key element that can contribute to livelihood sustainability in order to bring employment, improve quality of life and life skills and eradicate poverty among the fishers. The diversification of livelihoods aims at reducing pressure on fishery (APFIC, 2010). This should be linked with good governance which is ready to help fishers to diversify their livelihoods to come out of poverty.

Fishing communities should alternative or supplement livelihoods with farming where possible to due presence of large body of water and this can make them avoid poverty as they will get income from the sale of farm produce and also food for the family.
Fish farming can be done to improve the supply of the fish in the market and enhances the individual income. Men can diversify their livelihoods by operating means of transport like the (boda boda) and taxi or using the motorized boats to ferry people to the islands. Women can operate salons, pubs, restaurants and sell second clothes (mitumba) or sell cereals and grocery. All these economical activities if used can spread the shocks and risks across many livelihoods hence increase the income of fishers and reduce community vulnerability from economic shocks as well as life risks.

2.5.2 Good Governance

There is need for administration that is very efficient and good governance at the middle poverty reduction strategies (Allison, 2005). The government must be effective in order to fully ensure that the fishers are no longer living in poverty. The governance reforms in the fisheries calls for the participation of fishers and government. An active participation of fishers in the planning, formulation of by-laws and enforcement of fisheries regulations creates a sense of belonging and legitimacy hence compliance to fisheries laws and regulations (Hollup, 2000 and Omiti et al., 2002). These by-laws and regulations when done together makes fishers come out of poverty.

The co-management will help in the decision making as the community will be allowed to elect their leaders of their choice and also those who can help the national governments in planning for the allocation of natural resource to the fishers. With effective collaborative efforts at different jurisdictional levels then it will help to control the aquatic resources and marine environment as part of preventing conflicts among the fishers (Torell, 2009). The good governance through the community
elected leaders will ensure the fishers use right gears, no one uses poison to catch fish, there is security and equity, fairness and democracy are there.

The government should control the access to fishing ground to avoid overfishing and over exploitation of the resources, to control the types gears used and to ensure that people maximizes the economic value of the resources (APFIC, 2010). The government should step efforts to remove these destructive gears and the effects of the long line fishery in particular need to be evaluated and the fishery regulated accordingly (MoFLA, 2013). This will reduce poverty among the fishing community as the fish caught is of the right size; stock is not depleted leaving people with nothing to catch and also controls the number of the boats at the beaches.

The management should give a coherence policy that help the fishers to access the natural resources and access to markets freely and fairy in order to poverty and improve lives of fishers (Bergen, 2014). In the situation where there is effective and flexible management will improve incomes by limiting entry to fisheries to avoid the tragedy of the commons. In most cases the management of public has been characterized by patronage, corruption and inefficiency (Ongesa et al., 2014).

According Allison (2005), the fishers need to avoid wasteful investments and over-capitalization to improve their living standards and by supporting sustainable exploitation practices which has improved incomes. Wasteful and over-capitalization in fishery leads one to poverty as the amount of money invested is more than the money one is able to get in return after many years leaving one in poverty or the gears and boats destroyed by storms can also lead to poverty so when there are coherent policies then one would be able to escape poverty.
The government should introduce a fair percentage of revenues raised from taxing and licensing of fisheries are used to towards reducing vulnerability in the fishing communities (Abila, 2000). NGOs and other civil society groups involved in the community development issues should become more engaged in the fisheries sector and to incorporate vulnerability reduction and social inclusion in their integrated conservation and development projects. Community based organisations should represent the interests of marginalized groups and identify appropriate means of addressing vulnerability and social exclusion at local level (Allison, 2005).

2.5.3 Improvement of the country’s overall GDP

The Poverty among fishers can be reduced through improving the general economic performance of a country. Allison (2005), argues that very strong economic performance of a country in labour sectors is significant for small-scale fishing communities because it can offer alternative employment opportunities. When there is improvement on a country’s economic performance which can be seen through the public service delivery like provision of markets, roads, political stability, better education system, better health care and good governance (Allison, 2005). If there is any economic progress in a country then it will automatically improve the living standards of the fishers and so if the government does this, then their lives are improved.

2.5.4 Good Market Policy

According to Bergen (2014), the Small-scale fisher needs empowerment to drive the necessary change to make their contribution to international trade and improved livelihoods.
The progress in information technology would provide new opportunities for innovative engagement with other value chain members and the markets for example the SMS-based price information systems, electronic self-help platforms to exchange trade and product, demand in growing regional markets.

There is need to organize small-scale fishers into groups to improve their bargaining power so that they can participate in the global value chains. When horizontal and vertical linkages are developed the fishers will be able to access the necessary services like education, finance, health and knowledge to reduce post-harvest wastage and losses using improved processing technology and markets (Bergen, 2014). The organizational knowledge of the fishers is way to improve their living standards they will know how to process their products and sell them in the international markets.

According to Allison (2005), the other three ways of improving the living standards within the fisheries sector are reducing or removing subsidies on production inputs may lead to the use of smaller boats and engines, reduced expenditure on fuel, and increased expenditure on labour. In the long-term, this should increase profits, create more employment and income for poor fishers and reduce debt. Support must be provided both for risk management and coping mechanisms that are used to deal with shocks and stresses. Support for effective organizations in fishing communities can benefit the poor by increasing access to credit, effecting policy change in favour of the poor, and reducing vulnerability.

2.5.5 Promotion of fish farming

The government should teach the fishers how to do fish farming or aquaculture as an alternative way of life to the fishers. The aquaculture has potential to eradicate the
poverty among the fishermen as the exploitation is controlled by the owner and harvesting is timed.

The government should also help in finding solutions to the fishers by removing constraints that prevent poor fishers from moving into aquaculture. The constraints may include high capital costs, lack of suitable sites, and the lack of access to land and water for the fishers. The findings of the study done by Musinguzi around Lake Wamala in Uganda revealed that fish farming is actually a way to diversify the livelihood of the fishers and reduce poverty (Musingizi, 2015).

2.5.6 Strengthening community organization

Strengthening of institutional capacity is the most important step in the fight against poverty and so there is need to emphasize capacity development agenda for fishers to as a means of overcoming the institutional gaps present in many countries (Ongesa et al., 2014). In many occasions fishers become poor because their rights are not protected and they lack organization to protect from exploitations. If their rights are protected within the institutions like market prices, access to fishing ground and access to social institutions then their living standards will be improved.

The government to support existing Saccos and cooperative societies train and provide them with capital to run. Through these societies fishers are able to get loans and learn ways of livelihoods that can enable them to reduce prevalence of HIV/AIDS-related deaths in communities engaged in fishing and fish trading and other ‘killer’ diseases such as Malaria and TB. Uniting themselves through the registered community society fishers should be able to raise their problem so that they
are also targeted in national Malaria and HIV/AIDS prevention and treatment and mitigation programmes (Allison, 2005).

The stakeholders of small-scale fisheries should include women in the whole fisheries industry and avoid limiting them to just processors and marketers but see them as one of the drivers of change in the fisheries industry to improve the living standards of the fishers (Bergen, 2014). Women should also be investors in this industry as they are household managers, credit manager, boat owners and they decide on the family nutrition. The role of women in the fisheries should not be overlooked for the fishers to live well and eradicate poverty. Fisheries should be opened like agriculture where men and women have the same opportunity for investment.

2.6 Knowledge Gaps

There is established causes of poverty among the fishers and livelihood strategies. Some authors have claimed that small scale fishers are poor because they do not diversify their livelihoods which is not true as some of the studies done around the world have shown that small scale fishers have diversified their livelihoods. However, the study concerning the implication of the livelihoods on poverty reduction along Lake Victoria, a case of Mbita Sub-county has never been done by anybody.

The studies done have tackled the issue of Small scale fishery and HIV/AIDS, causes of poverty and effects of weather and climate change on fishery along Lake Victoria. So, this study filled the gaps in the livelihood strategies of the fishers, challenges faced by the fishers and ways to mitigate poverty among the small-scale fishers in Mbita Sub-County. There is need to generate knowledge on the demographic characteristics of the fishers, livelihoods strategies, the causes of poverty, challenges
faced by the fishers and mitigation measures to make the communities cope and be resilient to poverty through diversified livelihoods.
CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction
This chapter presents research design and methods that were used in the study. The chapter comprises of the following sub-sections: the research design, target population, sample size and sampling techniques or procedures, data collection methods and instruments, data analysis procedures and ethical considerations. Research methodology provides the various systematic steps that are generally adopted in studying the research problem along with the reasons behind them.

3.2 Research Design
According to Kothari (2013), a research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis data. Research designs are plans and the procedures for research that span the decision from broader assumptions to detailed methods of data collection and analysis. The study employed mixed method design; quantitative and qualitative methods of study.

This study used cross sectional survey and Participatory rural appraisal. Cross sectional survey designs are normally intended to describe and report the nature of phenomenon as it. Descriptive design was applied because the study involves describing a relationship that exists between two sets of variables dependent and independent. Participatory rural appraisal is a family of approaches and methods which enable rural people to analyze their own life and conditions and choose their own means of how to make improvements (chambers, 1994). PRA may also be seen
as a method for research where the people being investigated are the ones who actually are the analysts of their problems (Holland & Blackburn, 1998).

They argue that it is the local people who have the knowledge and ability to be the subjects of their own development and that those who facilitate PRAs must pay particular attention to the way they behave when interacting with local people.

3.3 Study Area

The study was done along Lake Victoria basin in selected four beaches or landing sites of Mbita Sub-county; Koguna, Nyamasare, Litare and Lwanda Rombo. Lake Victoria is the largest Lake in Africa and second biggest tropical in the world with total surface area of 68,000Km² and water volume of 2760 Km³. The lake has catchment area of 193,000 Km² which extends to Rwanda and Burundi. The lake is also shared by three countries in this manner Kenya (6%), Uganda (43%) and Tanzania (51%) (LVFO, 2013). The Sub-County has a total population of 111,409 people according to Government of Kenya census (2009) and covers an area of 420,80 Kms sq. Mbita Sub-County lies within the geographical coordinates of 0, 25', 0"south and 13, 412' 0"east.

3.4 Target Population

A target population is a complete set of individuals, cases or objects with some common observable characteristics. The study was carried out amongst the fishers within the four selected beaches of Mbita Sub–County; the total number of the registered small fishers Mbita Sub-County Beach Management Unit was 520 (BMU, 2015).
Table 1.0 show the fishers who registered with the sub county beach management unit for the purpose of representation and management of the sector.

Table 1.0: Number of registered fishers in Mbita Sub–County.

<table>
<thead>
<tr>
<th>Crew</th>
<th>Processors</th>
<th>Gear Sellers</th>
<th>Boat owners</th>
<th>Traders</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>287</td>
<td>50</td>
<td>10</td>
<td>103</td>
<td>70</td>
<td>520</td>
</tr>
</tbody>
</table>

Source: BMU, 2016

3.5 Sample size

A sample is a small proportion of a target group selected using some systematic procedures for the study. The study employed formula for calculating sample size by Fishers et al., (1998).

The error of margin is 1.96 times the standard error and that the standard error is

\[ \text{z} \sqrt{\frac{p(1-p)}{n}} \]

Where; ME = Desired margin of error z-is the z score eg. 1.645 for 90% confidence interval, 1.96 for 90% confidence interval and 2.58 for 99% confidence interval. p- is our prior judgment of the correct value of p. n-is the sample size to be found?

So in this case i set ME equal to 0.045, z=1.96, p=0.15.

\[ \text{ME} = \frac{\text{z} \sqrt{p(1-p)}}{n} \]

\[ 0.045 = \frac{1.96 \sqrt{0.15(1-0.15)}}{n} = \frac{(0.045)^2}{1.96} = \frac{0.01275}{n} \]

\[ 0.000529 = \frac{0.01275}{n} \]
The sample size of the study is 240 as derived from the above calculations after the round off to the nearest ten.

### 3.6 Sample and Sample techniques.

According to Wilson (2007), sampling techniques provide a range of methods to reduce the amount of data that is necessary to collect, by considering only data from a subgroup rather than all cases or elements. The study took only a section of the population as a sample in the data collection. The study adopted two sampling procedures; simple random sampling, which is probability, and Convenience sampling, which is a non-probability sampling. Simple random sampling was used to select two wards within Mbita Sub-County; Kasgunga and Rusinga wards. Simple random was used to select 200 fishers to fill the questionnaires. Convenience sampling was used to select 30 respondents for interviews and 10 focused group discussions. The convenience method is opportunistic and allows a researcher to generate a sample that may be broadly based at a low cost.

### 3.7 Data collection instruments

The instruments used in data collection are questionnaires, open ended interviews and FGDS. These instruments were informed by the progress out of Poverty index (PPI) tool. The PPI was approved in 2005 and updated in 2011 by Schreiner Paper (2009). It is based on Kenyan 2005/6 integrated household budget to construct an easy to use scorecard that estimates the likelihood of household being below the poverty line. The scorecard had ten simple questions that the researcher used to collect the information from the respondents.
The PPI is a simple and accurate tool or approach for tracking the livelihood status and can be used measure poverty levels of a given households. It uses ten verifiable indicators (“What is the main occupation of the male head of the family?” and “Does the household own iron?”) to obtain a score that correlates closely with results of other, exhaustive poverty status surveys. Indicators are selected on the basis of being verifiable, not expensive to collect, easy to answer and that they correlate closely with poverty.

All points in the scorecard are non-negative integers, and total scores range from 0 (live below a poverty line) to 100 (above poverty line) (Jalil et al., 2012).

These ten questions were integrated within the questionnaire, interviews guide and focused group discussion guide. The reason why the researcher used these tools was because they were relatively simple to administer and manage, the researcher can generate large amount of data quickly and they facilitate cooperation between the respondents and researcher.

3.7.1 Questionnaire

The researcher used Questionnaires which are sensible way forward if not factual information is needed from a substantial number of people. It is also a powerful method when information about people’s attitudes and opinions are sought. Questionnaire was divided into two sections; closed and open-ended section. The closed section is to find out poverty level of individual using the progress out of poverty index PPI (2011) and was used to collect both quantitative and qualitative data and while the open-ended section was used to collect the qualitative data.
3.7.2 Interview guide

The interview schedule had both the structured and open-ended questions. The researcher was able to collect both the quantitative and qualitative data.

3.7.3 Focused group discussion guide

The focused group discussion guide had both the structured and open-ended questions which guided the discussions between the researcher and the respondents and from the group discussion the researcher was able to collect both the quantitative and qualitative data.

3.8 Data Collection Procedures

The researcher used the following procedures while collecting data for this study; questionnaires, interviews, focus group discussions and document analysis.

3.8.1 Questionnaires

The researcher administered 200 questionnaires by himself to the respondent households’ randomly to fill and was able to collect 175 questionnaires back after the exercise which represented 87.5% of the respondents and 25 could not be traced as those who took them disappeared.

3.8.2 Interviews

The researcher conducted in depth interviews to seek people’s opinions and attitudes towards the objectives of the study. In depth interview permitted the researcher to explore fully all the factors that underpins participants answers; reasons, feelings, opinions and beliefs. The researcher undertook interviews with beach leaders, government officials and as well as fishers. In total, the researcher conducted thirty (30) interviews for this study. These focused mainly on individual perceptions of poverty within their communities. However, the researcher experienced some
challenges like some respondents were expecting some allowances for answering the questions. Some respondents also thought that the researcher works with NGO that would assist them and some had to leave during the interviews to attend to their families or fishing activities.

The interviews did have a set of prepared questions. The questions included which groups of people are in fishery, does the fishery help them, at time of the year the catch is high and low, where do they get information concerning livelihoods, security of the lake and resources, livelihood strategies, causes of poverty, livelihood challenges and how to improve the lives of fishers. Interviews helped in capturing sensitive and complex issues such as incomes, making sense out of one’s activities and life, to gain new insights and perceptions. The interviews were undertaken in the Beach leader’s office to provide an environment that most of them preferred. Interviews were however undertaken between 09am and 5pm. Each interview lasted at least between 45 minutes to 2 hours at most.

3.8.3 Focus Group Discussions

The focused group discussions comprised of the crew members, beach leaders, gear and boat makers and menders, and women in the fishery industry. Each group discussions had around 10 to 15 people which lasted for about 45 minutes to 1 hour. The discussions were undertaken right in the beaches or under tree shades, some were held at the Beach leader’s office. The discussions were centred on fishers’ livelihoods, livelihood strategies, causes of poverty among the fishers, challenges faced by the fishers and the solutions to the problems facing them and from those discussions there was creation of knowledge out of seemingly familiar understandings. The discussions were often very lively as respondents listened and responded to each other’s
contributions. The interactive aspect (Cameron, 2005) provides opportunity to explore different points of view and formulate and reconsider their own ideas and understandings. The researcher had Ten (10) focus group discussions for this study.

3.8.4 Document Analysis

The researcher analysed the documents that have been published concerning the study to enrich the study. This method involved analysing published journal articles retrieved from the internet and authors of papers, books and technical reports from LVFO, LVBC. The researcher also retrieved published and unpublished research reports from the Lake Victoria Beach Management unit, local newspaper reports, official government reports, Unpublished and Published Thesis and Policy documents from the Ministry of Agriculture, Fisheries and Livestock. These documents also helped in developing questions posed to fishers in Lwanda Nyamasare, Lwanda Rombo, Koguna and Litare beaches.

3.9 Data Analysis Methods and Procedures

The quantitative data collected was analysed using statistical package for Social Sciences 21 (SPSS 21) (2010). The raw data collected were cleaned and coded in the SPSS programme in order to allow analysis to be carried out successfully. Descriptive statistics provided a systematic description that is as factual and accurate as possible. Descriptive statistics such as frequency and means of occurrences or central tendencies are used. The data collected was presented by use of statistical tables, graphs and pie charts to represent the various reactions by respondents to the different research questions.
The qualitative data collected were cleaned and analysed in themes derived from the objectives of the study. The data are presented in a descriptive form, to describe phenomenon as it is.

### 3.10 Reliability and Validity

Reliability is the measure of degree to which a research instruments yields consistent results after a repeated trial (Mugenda & Mugenda, 2015). To test the reliability of the instruments are test method was used. A Pilot study was conducted in Suba Sub-County beaches which are adjacent to Mbita Sub-County before actual study. After the pilot study, the questionnaire was adjusted accordingly to meet the desired purpose.

According to Mugenda & Mugenda (2003), validity is the degree to which results obtained from the analysis of the data represent the phenomenon under the study. For the validity of the instruments they were tested under guidance of the supervisors and department of development studies.

### 3.11 Ethical considerations

The researcher sought for an introduction letter from the University to NACOSTI to get research permit.

An informed written consent was sought from each participant. The purpose of the research was explained in a language that the respondents fully understand before signing the consent.

All respondents were promised anonymity as names would not be used in the questionnaire and discussion of the thesis.

All the respondents were treated with respect, dignity and confidentiality during and after the research.
The participants had freedom to withdraw from the study anytime without any explanation at any given time during the data collection due to any of their own reason or volition.
CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter deals with the analyses of data, presentation and discussions of the findings of in line with the objective of the study. The study was done in four selected beaches (landing sites) of Mbita Sub-County among the fishers in year 2016. The general demographic analysis was the first to be analysed followed by the analysis of PPI questions using the PPI scorecard. The presentations and discussions of the findings were done according to objective of the study thereby giving the communities of Nyamasare, Koguna, Litare and Lwanda Rombo a voice by sharing their perceptions on objectives of the study. The general demographic characteristics that were captured include: age, marital status, level of education for female head and how long the respondent has been fishing.

PPI is an internationally recognized approach for tracking the livelihood status of households based on globally accepted international poverty lines and nationally recognized poverty lines. By using this measure, livelihood status of households are categorized as follows Category A those living under the $1.25 day/PPP Category B living between $1.25 a day/ PPI index and category C living with more than $ 2.26 day/ PPI.
4.2 The general demographic and socio-economic characteristics of the respondents.

The first demographic variable that was considered in the study was age distribution of the fishers. Figure 3.0 is a summary of the findings on the age distribution of the fishers in the four selected beaches of Mbita Sub-County along Lake Victoria basin.

4.2.1 Age distributions of the fishers.

Figure 3.0 Age distributions of the fishers.

Source: Author’s field survey, 2017.

The figure 3.0 shows age distributions of the respondents where 24% of the respondents were in the category of (18-25) years old, 22% of the respondents were in the category of (26-35) and (10-17) years old, 18% were in the age bracket (36-45) years and 14% were above 46 years old. This implied that majority of fishers were in the age bracket of (18-25) years followed by (26-35) years and (10-17) years as these are the age when men and women are energetic and productive. Fishery is a tiring job that was why majority of those involved are young and energetic who are in the
bracket of (10-35 years) and very few people are in the age bracket of 35 and above. The other reason why there were young people in the fishery was due to the lack of employment opportunities in the country and county. When young boys and girls have completed primary education or secondary and have done well to further their education they ended up in fishing.

4.2.2 Marital status of the respondents

The second demographic variable that the study sought was marital status of the respondents and figure 4.0 is summary of the findings on the marital status of the fishers.

Figure 4.0: Marital status of the fishers

Source: Author’s field survey, 2016

Figure 4.0 is a summary of the finding on the marital status of the respondents. Majority of the respondents are single with 53% and 47% of the respondents are married. This shows that majority of the household respondents are living as either single fathers or mothers with children. The findings of the study revealed that the single parented household were majority due to the following factors; Husband and
Table 2.0 is a summary of the findings on the factors that led single parents. Some of these respondents were single parents because husband and wife divorced sometimes back, some were single because of the death of their spouses, some were not yet married and others were separated.

**Table 2.0: Factors leading to single parenthood**

<table>
<thead>
<tr>
<th>Factors leading to single parenthood</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widows/ Widowers</td>
<td>42</td>
</tr>
<tr>
<td>Not yet married</td>
<td>15</td>
</tr>
<tr>
<td>Divorced</td>
<td>25</td>
</tr>
<tr>
<td>Separated</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

**Source: Author’s field survey, 2016**

From the results represented in figure 4.0 above 47 percent were single parents/family and out of which 42% were either widows or widowers, 25% were divorced, 18% were separated and 15% not yet married. The percentage of widows or widowers were relatively high and this could be attributed to high HIV/ AIDS infections among the communities living along Lake Victoria. The husband or wife died sometimes back and left behind a widow or a widower with the orphans. Similarly, it was found that the nature and the promiscuous lifestyle of fishing communities that involved moving from one beach to another or regions made them to be predisposed to promiscuous lifestyle leading to high divorce rates. It was also found out that some of
the respondents were too young to get married, so this led to respondents who were not yet married. They just completed high school or primary school then joined fishery as a way of earning livelihood.

4.2.3 The highest grade of female head

The third demographic variable that the study sought was the highest school grade that the female head completed. Fig. 5.0 is a summary of the findings on the educational level of the female head of the family.

**Figure 5.0: Highest school grade that the female heads completed**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary form 4 or higher</td>
<td>38%</td>
</tr>
<tr>
<td>No female head/house</td>
<td>0%</td>
</tr>
<tr>
<td>Primary 8 and forms 1-3</td>
<td>22%</td>
</tr>
<tr>
<td>Primary 7</td>
<td>20%</td>
</tr>
<tr>
<td>Primary stds 1-6</td>
<td>16%</td>
</tr>
<tr>
<td>None or Pre Primary</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: Author’s field survey, 2016

Figure 5.0, shows that thirty eight percent (38%) reached primary 8 and Forms1-3, twenty two percent (22%) reached secondary form 4 or higher, the twenty percent (20%) reached primary 7, the sixteen percent (16%) reached primary Stds1-6 and four percent (04%) did not attempt or reached Pre- Primary and none of the household had no female heads. Majority of the female heads of the households either completed primary education or joined forms 1 to 3 but did not complete secondary education.

Generally, majority of the female heads had basic education with very few of them who did not go school or reached pre- primary education. This shows that they had
basic knowledge on the livelihoods diversification such as small business, agriculture and can manage household expenditure. The basic level of education could help them avoid being vulnerable to poverty through diversified livelihoods.

4.2.4 How long one has been in the fisheries

The fourth demographic viable that was asked by the study was the duration the respondents have taken in fishing. Table 3.0 is a summary of the duration of individual fishers had taken while doing fishery in Mbita Sub-County.

Table 3.0: Number of years respondents have been in the fishery.

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–5 years</td>
<td>86</td>
<td>40</td>
</tr>
<tr>
<td>6–10 years</td>
<td>55</td>
<td>26</td>
</tr>
<tr>
<td>11–15 years</td>
<td>44</td>
<td>20</td>
</tr>
<tr>
<td>Many years</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>215</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Researcher’s field survey, 2016

Table 3.0, shows the number of years the respondents had been in the fisheries where 40% of the respondents had been in the fisheries for the last 1–5 years and those who answered that question are 86 respondents, this was followed by 26% of the respondents had been in the fisheries for the last 6-10 years, 20% had been in the industry for 11–15 years that takes which had 44 respondent each. The remaining 14% of respondents have been in fishery industry for many years.

Majority of the respondents had been in this industry for at least 5 years. This was because fishery needs energetic people due its complexity and hardness therefore
many young people were involved while elderly people tend to retire. The other reason why the number of those who joined the fishery recently was higher than those who had stayed for a long time was due youth unemployment in the country so after school the majority ends up in this industry.

4.3 The poverty index of the fishers in the four selected beaches of Mbita Sub-County

The researcher sought to know the poverty index of fishers in the four selected beaches of Mbita Sub-County using the PPI scorecard. The questions on the PPI had choices and each choice had points awarded that ranges from 0-12. The researcher added all the points marked by the individual respondent household on the questionnaire to get the final average score of each respondent. The average scores were entered into the SPSS to generate the percentages and frequency.

The study categorised the average scores into three (0-45) those who earn less than 1.25 USD per day, (46-60) those who earned more than 1.26 and less than 2.5 USD per day and (61-100) as those who earns more than 2.6 USD per day. Table 4.0 is the summary of findings on the poverty index of the fishers in the four selected beaches of Mbita Sub-County.

Table 4.0: Poverty category of the fishers in selected four beaches of Mbita Sub-County.

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $1.25/ day</td>
<td>33.00</td>
</tr>
<tr>
<td>More than $1.26 and less than $2.5/day</td>
<td>51.00</td>
</tr>
<tr>
<td>More than $2.6/day</td>
<td>16.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: Researcher’s field survey, 2016
Table 4.0 show that 33% of the respondent households earned less than $1.25 day, 51% of the respondent household earned between $1.26 and $2.5/dollar and 16% of the respondent household earned more than $2.6 dollar a day. The implication was that 33% of the respondents are having 63% likelihood of being below the poverty line due to their low earnings. The 51% of the respondents who earn more than 1.26/dollar a day and less than 2.6/day dollar have the likelihood of 29% of being below the poverty line and the 16% who livelihood was then $2.6/day had a likelihood of 11% of being below poverty line. Those who earned less than $1.25/day were considered poorer than those who earned more than $1.26 and less $ 2.6/day. The 16% of the respondent fishers were considered to be richer because they earned more than $2.6/day and their likelihood of being below poverty line was 11%.

The researcher sought to know the correlation between poverty category and highest level of education for the female head of the family. Table 5.0 is the summary of the findings.

Table 5.0: A correlation between poverty category and highest level of education

<table>
<thead>
<tr>
<th>Poverty Category</th>
<th>Highest school grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.305</td>
</tr>
<tr>
<td>N</td>
<td>189</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>0.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>188</td>
</tr>
<tr>
<td>N</td>
<td>188</td>
</tr>
</tbody>
</table>

Correlation is significant at the 0.01 level (2-tailed).

Researcher’s field survey, 2016
A correlation significant at 0.001 level (2-tailed) correlations: Poverty category and highest school grade for the female head of the family. This printout indicates that the strength of association between the variables is moderate degree ($r = 0.305$) not so high and so low. The correlation coefficient is very significant different from zero ($p < 0.01$). we can also that 30% $(0.305)^2$ of the variation in the highest school grade for the female head is explained by the poverty category.

According Pearson when there was a positive correlation between the variables then we expect them to increase simultaneously. In this case when the female head of the family had higher level of education then the household would be in the higher poverty category. The correlation was not perfect but a moderate one with 30% significant. This was due to other factor other than the level of education.

The researcher sought to know the correlation between poverty category and fishing experience. Table 6.0 is the summary of the findings on the correlation between poverty category and how long they have been in the fishing industry.

**Table 6.0: A correlation between poverty category and fishing experience.**

<table>
<thead>
<tr>
<th>Poverty Category</th>
<th>How long have you been in fishing industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.074</td>
</tr>
<tr>
<td>N</td>
<td>189</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How long have you been in fishing industry</th>
<th>Pearson Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td>.074</td>
</tr>
<tr>
<td>N</td>
<td>188</td>
</tr>
</tbody>
</table>

**Source:** Author’s field survey, 2016
Table 6.0, shows that the strength of association between the variables is not significant ($r = -0.130$) and the correlation coefficient was very low but different from zero (0.074), however, it’s negatively correlated.

According to Pearson a negative show a perfect relationship between the variable where one variable increases while the other decreases and vice versa. We can also say that 67%. (0.130) of variations in the time one had taken in the fishing industry and the poverty category relation. There would be a reduction in poverty levels among the fishers as shown by the Pearson’s correlation with the increase in time one had taken in the fishery industry. Those experienced fishers would be in a position to acquire other assets through the fishery and other sources of livelihoods they engaged in. Some of the fishers who have been in this industry for long are the owners of the gears, boats and even landing sites this makes them avoid being in poverty.

4.4 Livelihood strategies of the fishers in Mbita Sub-County.

The first objective of the study was to find out livelihood strategies of the fishers and in order to test this objective the study sought to establish whether fishers have diversified their livelihoods or they solely depended on fishery. Table 7.0 is the summary of the findings on the question whether they had diversified livelihoods.

Table 7.0: Diversified livelihoods.

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>160</td>
<td>74</td>
</tr>
<tr>
<td>No</td>
<td>55</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Author’s field survey, august 2016
Table 7.0 shows that majority of fishers responded ‘Yes’ they had diversified their livelihood, meaning they do not depend on fishery as the source of income with 74% and 26% responded ‘No’ they do not have other sources of income, meaning they fully depend on the fisheries as their only source of livelihood.

The researcher further asked those respondents who had agreed that they had diversified livelihoods to mention whatever activities they engage as other sources of livelihood and then the following activities were mentioned by the respondents as livelihood strategies; Mining, Farming, Smallholder businesses and Informal employment.

Figure 6.0 is the summary of the finding concerning diversification of livelihoods by the fishers in Mbita Sub - County.

**Figure 6.0: Livelihood strategies of the fishers**

<table>
<thead>
<tr>
<th>Livelihood Activities</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>mining</td>
<td>25%</td>
</tr>
<tr>
<td>farming</td>
<td>30%</td>
</tr>
<tr>
<td>small holding</td>
<td>35%</td>
</tr>
<tr>
<td>informal employment</td>
<td>10%</td>
</tr>
</tbody>
</table>

Source: Author’s field survey, 2016
Majority of the respondents had small business as other livelihood strategies with 35% small holding business means operating means of transport like boda boda, motorized boats and taxi, selling of second hand clothes (Mitumba), vegetables, operating pubs, restaurants and kiosks. Thirty percent of the respondents are involved in the farming which include garden and subsistence farming, keeping of livestock for example goats, cattle and sheep. Twenty five percent (25%) of the respondents had mining as their other livelihood strategies; Sand and Quarrying. Ten percent (10%) of the respondents were employed in the informal employment sectors like construction sites, watchmen, home guards, housemaids and casual workers.

The finding was further reiterated by an interview held in Nyamasare with beach leader where he pointed out that:

“The income I get from fishery is good but not enough to cater for all my needs like paying school fees for my children, buying food for my family and paying for hospital or treatment bills and so I have to go out and look for other sources livelihood” (Interview response from Beach Leader in Nyamasare beach, 2016).

In another interview with a crew member at Koguna beach on whether they have other livelihood strategies and what are these livelihood strategies. He said that:

“The money I get from fishing is not enough to feed my family members and provide for all the basic needs. I do a lot of farming along the lake to supplement the household budget. I have planted tomatoes, cabbages, onions and kales to be able to feed my family. At the same time, I see most of the fishers especially the crews and gear owners doing other jobs to get surplus incomes for their families. The jobs include farming, running cafes, operating means of transport like motor cycle, motorized boats to islands and providing the sources fuels like charcoal and firewood” (interview response from a Crew member in Koguna, 2016).

In focus group discussion with fish processors in Lwanda Rombo beach on whether they have other sources of livelihood, all respondents agreed that they have other sources of livelihood and engagement in these other sources depends on their
individual ability. These other sources of livelihood include; selling cereals, second hand clothes (mitumba), charcoal or firewood. One fish processor pointed out that:

“During low season when the supply of fish is low I engage in selling cereals, hawking of (mitumba), sell charcoal or firewood to the people living in beaches or operating a café for snacks in order to provide for the household needs” (Focus group discussions in Lwanda Rombo beach, 2016).

Those fishers who were able to diversify their livelihoods; it to reduces vulnerability to poverty and mitigates poverty. A number of business activities were possible because there are many people along the beaches to buy these goods. This was also another way for them to earn income when the fish catch was low or when the lake was closed.

Some of the fishers engaged in farming to enable them reduce their vulnerability due to the presence of water for irrigation and good soil which makes them earn some good amount of income. Mining was also possible in this area because there was high demand for building sand and stones. A good number of people earning a living from both farming and mining to ensure they don’t fully depend on the fishery. Only few people engage in the informal employment (casual workers), this makes them survive and add to their livelihoods.

The findings of the study on whether the fishers have other livelihood strategies is actually confirmed by many studies. Smith et al., (2005) for example confirms these findings by pointing out that fishers practice a semi-subsistence diversification of activities like farming. Another study done in Lofoten islands confirms the findings of this study that fishers were actually farmers (Dyrwick cited in Allison unpublished). The study done in Norfolk between 1999-2003 among fishermen (Allison, Unpublished) and Friere and García-Allut (2000), show that fishers had supplementary source of livelihoods from a range of activity.
The cross tabulation between other sources of income and poverty category and the table 8.0 is the summary of the findings.

Table 8.0 Other sources of income and POVERTY CATEGORY Cross tabulation

<table>
<thead>
<tr>
<th>POVERTY CATEGORY</th>
<th>Other sources</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes %</td>
</tr>
<tr>
<td>&lt;$1.25</td>
<td>19%</td>
<td>54%</td>
</tr>
<tr>
<td>&gt;$1.26 and &lt;$2.5</td>
<td>49%</td>
<td>43%</td>
</tr>
<tr>
<td>&gt;$2.6</td>
<td>49%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Source: Author’s field survey, 2016.

Majority of those who had other sources of livelihood earned between $1.26/ day and $2.5/day with 54%, 27% of the respondents who have other sources of income earn more than $2.6/day and very few people had other sources of income less than $1.25/day with 19%. On the other hand, majority of those who do not have other sources of livelihood earn less than $1.25/day with 49%, those who earns more than $1.26 and less than $2.5 and 9% earns more than $2.6/day.

From this we can say that other sources of livelihoods have positive effect on the poverty index as majority of those who had other sources livelihood earns between $1.26 to $2.6/day with a cumulative percentage of 81% while majority of who did not have other sources of livelihood earns a low of <$1.25 and <$2.5 compared to those who have with a majority having cumulative percentage 92%. This is an indication that other sources of livelihood can be used to reduce the risks and vulnerability to poverty.
The income from fisheries was not enough sometimes to cater for all their needs therefore they diversify household livelihoods. These livelihood strategies depended on the household ability to react to shocks and trends that are there, some households do fishing alongside other economic activities while others go out to do other economic activities when the catch was so low and others moves from one beach to another or fishing ground to another in search of a place with higher catch.

On the question whether there is a correlation between poverty category and other sources of income. The table 9.0 below is the summary of a correlation between the poverty category and other sources of income using Pearson’s correlation.

**Table 9.0 A correlation between the poverty category and other sources of income**

<table>
<thead>
<tr>
<th>Poverty Category</th>
<th>Other sources of income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>189</td>
</tr>
<tr>
<td>Other sources of income</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>188</td>
</tr>
</tbody>
</table>

**Source: Author’s field survey, 2016**

The table 9.0, shows that the strength of association between the variables is not significant (r= -0.130), however, its negatively correlated. It is different from zero because when it is zero then there would be no correlation between the poverty category and other sources of income. We can also say that (-0.130)2 of the variations in others sources of income is explained by the poverty category.
According to Pearson’s negative correlation indicates that as one variable increases, so the other decreases and vice versa. Thus, when fishers diversified their livelihoods it’s likely the person would not be vulnerable to poverty. The poverty levels of households would be reduced by the diversification of the livelihood. The diversification of the household livelihood would enable them to acquire other assets, pay for their children education, pay for the hospital bills and even borrow loans. This would mitigate poverty among the fishers.

The researcher asked them what they used income from other sources of livelihoods? Seventy four percent had diversified livelihoods while 26% solely depended on the income from fishery. Majority of the respondents who had diversified livelihoods were in the second poverty category where they were earning between $1.2/day and $2.5/ a day. Diversification of livelihoods helped them to have access to banking institutions where could save and take loans with security of paying back. Others were able to buy other assets the income from other sources of livelihood, pay school fees to their children, pay hospital bills and help the less fortunate in the society. The rest of those who had other sources livelihood did not have a tangible income to associate with other sources of livelihoods. This showed that despite having other sources of livelihood some of them could not avoid living in poverty.

The researcher sought to know if the monthly/ annual income from fishery was enough to cater for their domestic expenses and Table 10.0 below is a summary of the findings.
Table 10.0: Monthly/ Annual income

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>46</td>
<td>20</td>
</tr>
<tr>
<td>No</td>
<td>184</td>
<td>80</td>
</tr>
<tr>
<td>Total</td>
<td>230</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Author’s field survey, 2016

Only 20% of the fishers are able to cater for their domestic expenses using the income from fisheries and 80% of the respondent said that the income from fishing cannot help them cater for their annual and monthly domestic expenses. The domestic expenses include buying food for the family, paying rents, buying clothes, fuels and paying for hospital bills. The income from the fishery can afford to pay for only one commodity of the domestic expense even though there are some which are bought once and a long time. One of the reason why they are not able to cater for their domestic expenses is that the income from fisheries is too little and unreliable.

The researcher sought to know if they were able to provide for their children’s educational needs with income from fishery. The table 11.0 is the summary of the findings of study.

Table 11.0: Provision of education

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>60</td>
<td>32</td>
</tr>
<tr>
<td>No</td>
<td>129</td>
<td>68</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Author’s field survey, 2016
Only 32% of the respondents are able to provide for their children’s educational needs using income from the fishery while 68% are not able to provide for their children’s educational needs using income from fishery. The educational needs include paying for tuition fees, buying uniforms, buying school shoe, buying texts and exercise books. Some of the educational needs are not bought or paid daily therefore with little income they can save or buy them during high season when the catch is more. The 68% of those who said No, they are not able to pay for their children’s educational needs using incomes from fishery because it is little and cannot be dependable.

The 68% of the respondents who said No, are not able to provide for their children’s educational needs with income from fishery alone explained that their children get donations from charitable organizations and well-wishers. In some, cases they receive bursaries from the national Government of Kenya through Constituency development fund to pay school fees for their children. They also get scholarships from NGOs wherever they cannot afford.

From Table 7.0 above where 74% of the respondents who said that they have diversified their livelihoods, the researcher sought to the contribution of the diversified livelihoods on the life of the people. Table 12.0 below is the summary of findings on the assets and access.
Table 12.0 Impacts of diversified livelihoods.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>78%</td>
<td>22%</td>
</tr>
<tr>
<td>Health</td>
<td>72%</td>
<td>43%</td>
</tr>
<tr>
<td>Help extended family</td>
<td>48%</td>
<td>52%</td>
</tr>
<tr>
<td>Land</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>Shelter</td>
<td>76%</td>
<td>24%</td>
</tr>
<tr>
<td>Fishing gears</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Increased income</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>Access banks</td>
<td>54%</td>
<td>46%</td>
</tr>
</tbody>
</table>

Source: Author’s field survey, August 2016

The summary in the table 12.0 shows that 78% can pay for their children’s education needs, 72% can also pay for their hospital bills and healthcare, 48% of the respondents said that they can help some of the extended family members, 59% said that they can acquire land through buying, 76% of the respondents said that they buy the recommended fishing gears, 51% of the respondents said that they have high income not like what they used to get during fishing alone and 54% said that they can access loans and even save with banks.

The findings shown above in the table 12.0 indicates that those who diversify their livelihoods have been able to benefits a lot than those who rely on fisheries alone. The respondents who diversify their livelihood are more resistant to poverty as seen through the higher income and assets acquired after engaging in diverse sources of livelihood as compared to those who solely depended on one livelihood.
The researcher sought to know the cross tabulation between provision for education and poverty category. Table 13.0 is the summary of cross tabulation between the poverty category and provision for the educational needs for the children.

**Table 13.0: Provide for education and poverty category cross tabulation.**

<table>
<thead>
<tr>
<th>POVERTY CATEGORY</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$1.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;$1.26 and &lt;$2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;$2.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide for</td>
<td>Yes</td>
<td>31%</td>
</tr>
<tr>
<td>education</td>
<td>No</td>
<td>33%</td>
</tr>
</tbody>
</table>

**Source:** Author’s field survey, 2016.

Table 13.0, 32% of the respondents who were able to pay for their children education (table 13.0), 31% of them are earning less than $1.25/day, 51% of them earn more than $1.26 and less than $2.5/day and only 18% of them earn more than $2.6/day while those who did not have other sources of livelihood were not able to adequately provide for their children educational needs, 33% earned less than $1.25/day, 52% earn more than $1.26 and less $2.5/day and 15% of the respondents earns more than $2.6/day.

### 4.5 Causes of poverty among the fishers in Mbita Sub-County.

The second objective of the study was to investigate the causes of poverty among the fishers in Mbita Sub-County, in order to test this objective, the researcher asked the following questions; Who decide on the prices? Where do you save your income? Do you access loans? What are the perceived causes of poverty? What are the signs of a poor person?
4.5.1 Who determines the prices of fish

When the respondents were asked who determines the prices of the fish in the beaches and market places, the following groups of people were mentioned by respondents to be the ones determining the prices of fish; traders, fishermen, beach leaders and the demand and supply. The table 14.0 shows the summary on the group that determines the prices of the product.

Table 14.0 Who determines the prices of fish.

<table>
<thead>
<tr>
<th>The group of people</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish mongers</td>
<td>40%</td>
</tr>
<tr>
<td>Beach leaders</td>
<td>30%</td>
</tr>
<tr>
<td>Supply and Demand</td>
<td>16%</td>
</tr>
<tr>
<td>Fishermen</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Author’s field survey, 2016

Table 14.0 show that 40% of the respondents said that fish mongers determine the prices, the 30% of the respondents said that beach leaders determine, the 14% of the respondents said that fishermen are the ones who determines the prices of fish and the remaining 16% of the respondents said that the fish prices are determined by the demand and supply relation whereby when the supply is high and demand is low then the prices will below and when the supply and demand is high then the prices will be high. There is standardised price of the fish at the beaches, the wages of the labourers are designed in standardised ratio and percentages. The produces or the providers of the community do not enjoy the freedom of bargaining of the wages or prices as there are already existing terms and rules which guides how they are paid.
The researcher sought to know whether the respondents usually save their incomes. Figure 7.0 is the summary of the findings.

**Figure 7.0: Are you able to save your income?**

<table>
<thead>
<tr>
<th>Saving of Income</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>53%</td>
<td>47%</td>
</tr>
</tbody>
</table>

Source: Author’s field survey, 2016.

Figure 7.0, shows that 53% of the respondents do some saving of the income from the fishery and other sources of income. The rest 47% do not save their income because either too little or the banks are far away. The majority who were able to save were not vulnerable to poverty as they could access to meet any eventuality that could arise. Saving with any financial institution is an indication the household likely to earn more than $1.2/day. This also could mean that the 53% of the respondents were likely to get the five assets that sustainable livelihood framework has presented. The forty-seven who were not saving anything were likely to be vulnerable to poverty.

The researcher sought to know how the respondents save their income and figure 10.0 is the summary of the findings.
Figure 8.0: Where do you save your income

Source: Author’s field survey, 2016

From figure 8.0 above 45% of the respondents save in M-Pesa, 30% of the respondents do not save, 15% of the respondents save in chamas and 10% of the respondents save in bank accounts. This was further highlighted in both interviews and focus group discussion with the fishers. In an interview with a fish processor at Litare beach where she said that:

“The income from fishery so little that I save in M-pesa or Chamas. Most of my fellow fishers also save in M-pesa or Chamas while others do not save at all because it is very small that they use all of it instantly and in the long run remain with nothing. This makes them to borrow continuously instead of saving” (interview response Litare beach, 2016).

In focus group discussion with the crew members and traders at Koguna beach on the modalities they save their income from fishing. They all accepted that they save many people save in the M-Pesa, Chamas, bank and others do not save (FGD, 2016). From this finding it clear that majority of the respondents save their income in the mobile account, chamas, banks and the rest do not save.
Saving in mobile phones is very risky as one can access account anytime to buy airtime and this interfere with the saving plans. Mobile banking is also not an effective way of banking as there is no security to your money. Saving with bank would be good as it can help the poor people with little incomes to access loans and learn many ways of doing business. Chamas or other community organisations are good ideas that should be encouraged a lot to change the lives of people in the rural areas whose incomes are little. Those who are not saving would be vulnerability to poverty.

The researcher sought to know whether the respondents access loans from the Government, NGOs and the Banks. The figure 9.0 below shows the findings on whether the respondents could access loans.

**Figure 9.0: Are you able to access loans**

![Accessing Loans Chart](image)

**Source: Author’s field survey, 2016**

Figure 9.0, shows that 65% of the respondents could not access loans while 35% of the respondents could. Majority could not access loans because of the unpredictability of catch, low, fear that banks could auction their properties in the case of defaulting,
lack of the physical assets that can act as security for the loans and some are illiterate about loans.

The small percentage who could access loans are the fish mongers and gear owners whose earnings are higher than that of the other members of the society because they were the bosses or the managers of most businesses. They also had security for the loans.

4.5.2 The perceived causes of Poverty

The researcher sought to know the causes of poverty among the fishers along Lake Victoria basin by asking them to name the causes of poverty. The respondents did not perceive poverty in the same way as their responses were varying. During the analysis the researcher grouped the responses into themes and that was how study got these themes and percentages. Table 15.0 is the summery of the findings on causes poverty among the fishers of Mbita Sub-county.

Table 15.0: The Causes of poverty among the fishers in Mbita Sub-County.

<table>
<thead>
<tr>
<th>Cause of poverty</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal changes</td>
<td>32%</td>
</tr>
<tr>
<td>Exploitation</td>
<td>19%</td>
</tr>
<tr>
<td>Perception</td>
<td>17%</td>
</tr>
<tr>
<td>Taxes</td>
<td>14%</td>
</tr>
<tr>
<td>Drugs and Alcohol</td>
<td>10%</td>
</tr>
<tr>
<td>Bad debtors</td>
<td>08%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Author’s field survey, 2016
Thirty two percent said that poverty was caused by seasonal changes, 19% of the respondents said that exploitation by the middlemen was a cause, 17% of the respondents said that perceptions of was a cause of poverty, 14% of the respondents said that government taxes was a cause of poverty, 10% of the respondents said that drug abuse was a cause of poverty and 08% of the respondents said that bad debtors are cause of poverty.

The findings show that majority of the fishers in Mbita Sub- county believe that poverty is caused by seasonal changes. This is because seasonal is comprised of various factors that interferes with fishing as unit. Seasonal changes result into poor weather conditions such as strong winds, rainfall and cloudy days. They form impediments to the fishery as strong winds affects fishing expeditions. During rainy seasons fishing may not take place due to high tides and strong winds. During cloudy days processing does not take place due to absence of sun to dry fish (Omena) and warm water for upward mobility. This finding was further highlighted in the focus group discussions in Koguna beach with the crew members and traders where they agreed that changes in season cause poverty. One crew member recounted that:

“Poverty is caused by seasonal changes and unpredictability of the weather. There are times when the catch is low and other times it is booming, this makes it unpredictable and impossible to plan. Sometimes one might use a lot of money for buying fishing gears and in fuelling the boat but gets little or nothing at all from fishing expedition. If a person is not able to get back whatever he or she invested in buying gears and fuel then it means the person has made a loss leading to poverty” (Focus group discussions in Koguna beach, 2016).

In an interview with beach leader of Litare beach who pointed out that

“Bad weather causes poverty in that during bad weathers no one can go for fishing expeditions. Lack of enough sunlight intensity to dry omena. This make omena to decompose, as it is a perishable commodity leading to massive losses. During such weather conditions, we spend savings on the household expenditure leaving us with no
The finding on the seasonal changes as the causes of poverty is similar to the findings of Auc–Nepad (2014) the changes of sea levels increase temperature, changes in salinity and currents, and frequent extreme weather are seasonal changes that affect the movement of fish hence less catch and poverty among the fishery. The study done by Khomsatun (2013) in Indonesia around Surabaya area confirms that seasonal changes cause poverty.

Seasonal or weather change affects most of the normal operations of people. Fishery being one of them could also be affected by the weather change a worse or a better. The study had only looked at the negative impacts of the weather change and did not highlight the positive effects of season and weather changes. When it rains, floods drain in the lake fish would tend to come out near the lake shore or upwards. This is so because floods come with food for fish and this benefit fishers due to booming catch.

The demerits of season change or weather are too much and can make fishers to be poor over period of time. During rainy season only very, few people can brave the bad weather to go for fishing expeditions and even if they manage the catch could not be good. Omena must be dried by the sunlight and in the absence of strong sunshine it will go bad and then they make losses. Strong winds have caused loss of the fishing gears, boats and even people. This means that whenever there is season or weather change then the lives of the fishers can also change tremendously.

The findings revealed the poverty among fishers in Mbita Sub -county was caused by exploitation of fishers by the middlemen as this was said by 19 % of respondents.
This is so because fishers are forced to sell unprocessed fish cheaply. The prices are also decided on by the buyers who tend to offer low prices which are not commensurate with the money invested and energy they used in capturing fish.

This was further explained during focus group discussions in Lwanda Rombo beach with the crew members, boat owners and gear repairers. The exploitation of the fishers by middlemen or the buyers in general was found to be one of the causes of poverty. One crew member said:

“We sell raw and unprocessed fish, this makes us vulnerable to exploitation by the middlemen. We sell cheaply because fish take a shorter time to rot. The prices of the fish are determined by the buyers who buy from us at a cheaper price. This is a form of exploitation from us(fishers) because we don’t get any profit from whatever we spend in fishery”. (Focus group discussions in Lwanda Rombo, 2016).

A study done by Abila (2000), along Lake Victoria beaches confirmed the above findings on the exploitation by middlemen and lack of cold storage facility where middlemen have captured the whole market with a lot of money got from the fish sale but the fishers still remain poor.

Lack of cooling storage and bargaining on the products makes the fishers to be vulnerable to poverty. The fishers do not have rights to bargain on the products, this starts with the crew members, mongers and even the gear owners. The mongers need to sell or else they will incur loss as the fish will go bad. So, this kind of situations gives the middlemen ground to come with money and exploits all the groups involved in the fishery sector. The effect of exploitation is reflected in the assets that they own, their savings and their household expenditure. Low or no savings, lack of assets and low spending on the household expenditure show that one vulnerable to poverty.

The perception of fishers was mentioned by the respondents to be a cause of poverty among fishers. This is a psychological mindset that is formed by most fishers that
because fisher in many countries are believed to poor and they are fisher. Therefore, they must live in poverty. This was further explained in an interview with a crew member in Nyamasare beach on the causes of poverty. He noted that:

“The society have a perception that we are poor because our colleagues in fishing industry are poor. We incur a lot of loss from the theft of our fishing gears.” (Interview response with a crew member in Nyamasare beach, 2016).

This is quite similar with Bene (2003), argument that fishers are poor because they are fishers. This is a bad mentality of fishers because it is an economic activity which should benefit people and not make them languish in poverty and it cannot be a cause of poverty among the fishers. Fishery is not synonymous to poverty; therefore, they should think differently as one doing business and not as one doing subsistence activity.

Fishing does not cause poverty in the lives of those take in it, but it is an economic activity that can be used to eradicate poverty when carried properly.

The findings of the study reveal that government taxation causes of poverty among the fishers of Mbita Sub-County. The government levies too much tax which interferes with household expenditure and saving plans of the person leading to poverty of the fisher. This was further explained by the interview with a crew member in Koguna beach where he pointed out;

“Our poverty status is contributed by heavy taxation levied by the government. The government does not support us with loans, grants or favourable marketing conditions and security to guard fishing gears in the lake from thieves” (Koguna interview, 2016).

This finding is similar with the findings of Abila (2000) along Lake Victoria that poverty among the fishers is caused by government officials soliciting bribes and confiscate their gears. The government officials and beach management unit take a lot
of tax from the fishers because of the illegal gears and unwanted boats. These taxes are too much that sometimes discourages people from investing in fishery or the little they get was sometimes paid as tax.

The findings of the study show that drug abuse was a cause of poverty among the fishers of Mbita sub-County. It came clear within group discussion that some of the fishers spend all the amount of money they get in a day on buying alcohol and bhang. The prevalence and usage of drug substance was so high among the fishers with around 80% of the crew members work under the influence of bhang, alcohol or tobacco due to cold conditions. The money they spent on these buying drugs could be on invested on something else that could generate more incomes. This was further explained in focus group discussion in Koguna beach with traders and crew members on the drug usage along the lake and how it causes poverty.

One trader recounted how the prevalence of the drug/substance usage in the beaches has been causing poverty.

“Some of us spend the money their income on buying drug such alcohol, bhang and cigarate without savings or doing an investment project. Drug abuse cut across all the economic classes within the society” (FGD in Koguna, 2016).

Drug and substance abuse among the fishers is a new theme that has never been captured in any study. Some of them spend all their daily incomes on the drugs and alcohol. This leads poverty as they cannot save anything on daily basis because their income ends in the hands of the bar owners and drug dealers. Some of them are not sober throughout the day after taking these drugs which impairs their judgement. This can also make them vulnerable to poverty because when judgement impaired then one cannot think constructively and solve the daily problems.
Eight percent of respondents said that bad debtors causes poverty among the fishers of Mbita Sub-county. These people come to the beaches with lorries to purchase fish and promise to pay later but fails to pay or takes a long before paying the debt. This has made many fishers to incur losses as the money that was used to in purchasing gears will not be recovered back. Bad debtors were mentioned in the interview with the Litare beach leader who said that:

"Some buyers purchase fish on credit but they delay to pay the debts while other disappears with money completely. This makes us to incur a lot of losses" (Interview with beach leader of Litare beach, 2016).

The fishermen with trust let them go with fish but then they fail to pay in time making the fishers to live debt every time and sometimes they disappear with a lot of money leaving the fishers a hard job of following them. This is a new theme that has never been highlighted by any study.

4.5.3 Signs of a poor person

After understanding the causes of poverty among the fishers the researcher sought to know the signs of a poor person according to the fishers of Mbita Sub-county. In focus group discussion with fishers in Litare beach the following were agreed as the common characteristics of a poor person. A poor person is one who cannot afford to feed his/her family. Poor housing is a sign of poverty, one who does not own assets like gears, boat and rental houses are also considered a poor man (FGD Litare, 2016).
4.6 Challenges faced by the fishers in Mbita Sub-County

The third objective of the study was challenges faced by the fishers in Mbita Sub-County. In order to test this objective, the researcher asked the following questions; Do you get informal/ formal trainings? Do you have access to information? Do you get support from the NGOs? Do you get the support from the Government? Do you get the tools for free? the hazards they face? problems and how do they affect your production?

On the question whether they access informal/ formal training about the fishery and livelihoods. Figure 10.0 is the summary of findings on the access to important training on livelihoods and fishery.

**Figure 10.0: Access to formal or informal training**

![Training Pie Chart]

Source: Researcher’s field survey, 2016

Majority of the respondents do get significant training on the livelihoods and fishery with 55% from the NGOs, Government officials and fellow fishers while 45% do not get access to any training. In most cases they were trained on how to go about fishing, how to repair boats and gears. This was usually done by the senior most members and
experienced to the juniors. Senior women also train the young ladies on how to process fish, sell and preserve them.

On the question whether the fishers have an access to information on the livelihoods and fishery. The table 16.0 below show the summery of the findings.

Table 16.0: Access to relevant information on fishery.

<table>
<thead>
<tr>
<th>Access to relevant information on fishery.</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>32</td>
<td>68</td>
</tr>
</tbody>
</table>

Source: Researcher’s field survey, 2016

Table 16.0 show that majority of the fishers do not access important information on the livelihood diversification and the entire fishery sector. Sixty eight percent of the respondents said that they do not get information on the fishery and livelihoods while thirty two percent of the respondents said that they get some important information on the fishery and livelihood diversification. Meaning that very few people are accessing information on the livelihoods and this can be seen on the way majority of the fishers are very vulnerable to poverty. Access to this information would help in reducing poverty among the fishers along Lake Victoria.

On the question whether fishers in Mbita Sub- County receive support from both levels of Government. Figure 11.0 is the summary on the support the fishers receive from the Government.
Figure 11.0: Support from the Government

Source: Researcher’s field survey, 2016

Majority of the fishers in Mbita Sub-County do not receive support from both the level of Governments as shown in the figure 11.0 where 57% did not receive support from the Government while 43% of the respondents receive support from the Government. Lack of support from both levels of Government was an indication of marginalization of fishers by the Government and likelihood of living in poverty. The two levels of Government are national and county governments who are supposed to support the fishers in terms of security, food and information.

On the question whether fishers in Mbita Sub- County receive support from the Non-governmental organisation. Figure 12.0 is the summary on the support the fishers receive from Non-governmental organisations.
Fifty five percent (55%) of the respondents receive support from the non-governmental organisations while forty-five (45%) do not receive support from the non-governmental organisations. The support given to the people are not always much as they also give in reaction to an emergency or to social problem that affects the people. The support may be in form of small cash to the suffering, pay school fees and pay health bills. The support from NGOS does not help much to mitigate poverty.

On the question whether fishers in Mbita Sub-County acquire tools for production freely. Table 17.0 is the summary on the support the fishers receive from the Government.
Table 17.0: Acquisition of tools for production

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>05</td>
</tr>
<tr>
<td>No</td>
<td>95</td>
</tr>
</tbody>
</table>

Source: Researcher’s field survey, 2016

Majority of the respondents with 95% do not get tools for production freely while few very people acquire them for free. This shows that all the tools used in the production are sold and not for free. The tools include fishing gears, boats, fuels, storage facilities and processing equipment.

When the researcher asked them to mention the hazards that they face during fishing 40% of the respondents said that the hazard they face are attacks from the wild animals, 38% of the respondents said that hazard that they face was change weather patterns and 22% of the respondents said that water borne diseases was hazard that they face.

Table 18.0 is summery concerning the hazards faced by the fishers in Mbita Sub-County.

Table 18.0 Hazards faced by fishers in Mbita sub-county.

<table>
<thead>
<tr>
<th>Hazards in fishing</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild Animals</td>
<td>40%</td>
</tr>
<tr>
<td>Weather changes</td>
<td>38%</td>
</tr>
<tr>
<td>Water borne diseases</td>
<td>22%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Researcher’s field survey, 2016.
This was further highlighted during focus group discussion with fishermen and elders from Lwanda Rombo village on the hazards faced by fishers along Lake Victoria. He pointed out that:

“Many fishers fear going for fishing expeditions at the lake due to the presence of Hippos and crocodiles which have injured and killed many fishers in the area. The wild animals had even destroyed gears and boats. They had also caused a lot of destruction to the people” (Interview with Koguna BMU leader, 2016).

Bad weather as hazard includes strong winds, storms, water currents, rainfall and cloudy days which interferes with fishing and has made many fishers lost their lives and even gears. In an interview with Litare beach leader who pointed out that fishers are poor due;

“During bad weather no one can step in the lake to catch fish due to dangers that are there like boat capsizing which has gone with many lives and even disappearance of gears; whenever there is no sun to dry the omena they will go bad which makes the traders and fisher men get losses and movements of fish is influenced by calm weather” (Interview response Litare, 2016).

They are impediments to the fishery as strong winds affects fishing expeditions, during rainy period also fishing cannot take place and cloudy days processing does not take place as there is no sun to dry fish.

In focus group discussion on the hazards that affect the fishing where one crew member recounted that:

“The hazard we face is infections from water borne diseases; Malaria, Pneumonia and even the hospitals are away from the beaches and villages. These diseases have made many people lost their lives, some are sick and cannot come back to work again” (Focus group discussion Lwanda Rombo, 2016).

The above challenge is similar to the finding of Abila (2000) found out that typhoid, amoebae, cholera and aids related diseases affecting fishing communities and
hospitals are far away from them. The diseases have killed many fishers and made some weak which lessen their production.

These hazards affect the output by discouraging people from investing in the industry as those involved will die or attacked by wild animals. The hazards have led to low catch, losses of fishing gears and loosing of life through the accidents in the lake.

The second part of the third objective of the study dealt with the problems that are faced by the fishers. Table 19:0 is the summery of the findings on the problems that fishers in Mbita Sub county while doing their daily source of livelihoods.

Table 19.0: Problems faced by fishers of Mbita sub- county.

<table>
<thead>
<tr>
<th>Problems</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insecurity</td>
<td>24%</td>
</tr>
<tr>
<td>Open access</td>
<td>18%</td>
</tr>
<tr>
<td>Leadership</td>
<td>16%</td>
</tr>
<tr>
<td>Lack of financial institutions</td>
<td>14%</td>
</tr>
<tr>
<td>Lack of storage facility</td>
<td>06%</td>
</tr>
<tr>
<td>HIV/ AIDS</td>
<td>05%</td>
</tr>
<tr>
<td>Lack of fishing Knowledge</td>
<td>04%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Researcher’s field survey, 2016

The 24% of the respondents said that insecurity was a problem which included social, economic and physical security, 18% of the respondents said that the open access of the lake was a problem as it lead to over-exploitation, 16% said that poor leadership was a problem as those elected are in competent to carry out their work, 14% of the respondents said that lack of financial institutions was a challenge they face, 08% of the respondents that bad debts were a challenge, 06% of the respondents said that lack
of storage facility, 05% said that HIV/AIDS is a challenge, 05% said that lack of fishing knowledge was a challenge and04% respondents said that fish markets was a challenge.

Security was mentioned by the respondents as a big problem to fisheries as lack of security in the region as resulted to people losing their fishing gears and boats, loss of lives through the attacks from wild animals like Hippos, crocodiles and snakes and the lack of security has made most of the fishers’ face harassment by Ugandan policemen. The insecurity was discussed in the interview with Koguna beach leader who pointed out that:

“Insecurity is a big challenge is there is no police to guard the gears and entire beaches, many people have been attacked by wild animals. Gears and boats have also been stolen by unknown people; fish caught in gears are stolen” (Interview with Koguna BMU leader, 2016).

In focus group discussion with fishermen and elders of Lwanda Rombo beach on the challenges faced by fishers along Lake Victoria. One Crew Member recounted that.

“The challenge we face as fishermen is harassment by Ugandan police. They arrest us and take our gears and even take away our fish that are already caught. We do not have life-saving jackets that we can use when an accident occurs like when a boat capsizes” (Interview with crew member at Lwanda Rombo, 2016).

The study by Yao (2013) in Ghana around river Volt a similar with the study where the government could not provide enough patrolling police to guard their waters to prevent illegal fishing activities, the theft of fishing gears and keeping the lake safe by making sure wild animals does not kill fishers.

The harassment of the Kenyan fishers by Ugandan police or army whenever they cross border is a challenge. This challenge has not been addressed by any study but only highlighted by the media houses sometimes back and so the study considers it as
an emerging theme. The Ugandan army and police arrests Kenyan fishers while they are on fishing expedition. It is a challenge they face which should be addressed urgently even though the Kenyan inspector of Police and his counterpart from Ugandan addressed press together in Nairobi saying they will do a joint patrol to solve the boundary problem and harassment.

The other challenge was lack of life saving jackets that we can use when an accident occurs like when a boat capsizes. They go out in the deep lake without the lifesaving jackets that can help them during emergency. These are challenges to the normal fishing expeditions and the fishery sector at large. A processor stated that fishery lack social security for the retiree as other forms employment does. She pointed out that.

“Fishing is an occupation where there is not retirement benefit and when you get old and cannot fish again then you will have nothing to eat hence you languishing in poverty. In case a crew member or a boat owner falls sick he/she will not get money or fish the following morning from those who went for expedition at night” (Focus group discussions excerpt from fish processor in Koguna, 2016).

Lack of social security was when one is old or sick that cannot do the fishery work again he or she remains a beggar because there is no retirement benefit. A study was done in Indonesia by Kunadi (2002) showed similar finding on the lack of social security which one can turn to when unable to carry the fishery work. The sector does not actually have social benefit or retirement benefit but even those who are given retirement benefits from other profession faces challenges. The fishers with this knowledge should invest in other economic activities, save for the future and educate their children. These investments would help the fishers to retire in peace, have some hope in future and reduce their vulnerability to poverty.

The study revealed that Open access of the lake was a problem to the fishers as it leads to the depletion of the fish productivity, over-exploitation and its impact to
fisher’s income. When a natural resource is free to access by everyone it is not easy for the leaders to have full control of it. This is a challenge as all the resources will be exploited leaving them without single alive.

In an interview with a fish trader in Nyamasare beach on the challenges faced by fishers. She said.

“We face the challenge of open access to everybody. Fishery is open to anybody so long the person has informed the BMU about the intention of joining the beach. This has brought over-exploitation of resources, congestion at the beaches and illegal fishing” (Interview Nyamasare, 2016).

The finding is similar with the assertion of the FAO (2000), that open access activity is one the determinant factor that has led to fisher’s poverty. The open access is a characteristic of the in land and marine fishery and is viewed as one of the important causes for wide spread and persistent poverty in fisheries. This is a challenge faced by many communities living along Lakes of African where poverty and unemployment is on the rise. The open access of the Lakes attracts many people to the Lake for fishing or working along the beaches as there are few requirements to live in the beach.

Leadership is a problem to the fishers as those elected are incompetent to lead and corrupt. They allow thieves to live and work within the respective beaches, collaborate with thieves and some are not able to organize the fishers to follow the policies and regulations of set by the ministry of Agriculture. Some of the BMU leaders do not understood their roles as and limit themselves revenue collectors at beach rather than negotiating best prices for the fishers. Another lady within the same group mentioned that;
“Some of the BMU leaders are incompetent therefore does not help us in following debts, some of them are also not able to manage the beach but collaborate with the thugs and burglars to interfere with beach smooth running. The ministry of fisheries had never come to train us on how to manage our small-scale businesses and how to form Saccos with small incomes” (Focus group discussions with fish processors in Litare beach, 2016).

A study done in Lake Albert Uganda by Sarnowski (2004), also found out that management is a challenge to the fishery and confirms this study. In Lake Albert management failure led to the decline of the type harvested due to over fishing as the leaders allowed unwanted/ illegal gears to be used. The fisheries management should control the capitalization in fishing industry, control fishing to avoid the over exploitation and to manage environment to reduce the degradation.

Lack of financial institution where fishers can save their incomes daily is a challenge for the fishers in Mbita sub-county. This is because banks are far away from the beaches where they live and so the only option is mobile money transfer which they see as risky mode of saving as they can withdraw anytime or buy credit. She pointed out that:

“Banks are far away from us and saving in M-Pesa is risky as it can be withdrawn anytime or be used as airtime”. (Interview with a trader fish at Nyamasare beach, 2016).

Lack of banks around or near the beaches was a challenge for the respondents because they cannot get the banking services easily. This has not been highlighted in any study but it is something that is a challenge and needs a faster solution for the fishers to live well.

Bad debt was mentioned by the fishers a challenge which needs special attention to be addressed for them live a good life. These middlemen and women come to the beaches and take the processed fish or Omena on credit but fail to pay as agreed. They
kept on promising the fishers that they will pay but never came to fulfil their promise while in some cases pay bit by bit which interferes with the business. One lady recounted that;

“Bad debtors are a big challenge in this business as they buy fish on credits and fail to pay or delay with the payment for many months. Sometime payments are done in instalments that make us strain a lot in carrying out our household expenditure and business. The factories are far away from us which makes us not to sell products directly to the factory but to middlemen” (Focus group discussions with processors in Litare beach, 2016).

This was a new point that has not been found with any study and it was a visible challenge that fishers face as they buy fish in credit but fails to pay them which makes them live in poverty.

Lack of cold storage box was mentioned as a challenge because fishers are forced to sell their fish cheaply due to the fact that it will go bad within a short time. The fishers have no choice or bargaining ground because if they fail to sell as soon as possible then fish will go bad. He pointed out that:

“We lack fish storage facilities to keep our catch fresh when buyers are not around and there are fluctuations of prices. When the supply of fish is more the prices is always down and when the supply is down then prices are high. The day you have more catch you sell cheaply and if the catch is more then you sell expensively” (Interview with crew member at Lwanda Rombo, 2016).

This finding is confirmed by Abila (2000) they lack cold storage facilities to store fish and sell at better prices which have made experience big losses from the sale of catches and continues living in poverty. This might not be true because each banda has a cold store to keep fish while they wait for the buyers. These boxes are expensive, one person cannot afford them unless one uses ice cubes to keep fish. The dried fish like omena does not need cooling box or other processed species.
Lack of fishing and marketing knowledge was a challenge among the fishers this is because they use modern equipment in fishing but lacks proper knowledge on the usage. In an interview with one trader at in Litare beach. She pointed out that:

“Fishers are poor because they lack fishing knowledge as there is no school for training of how one becomes a fisherman or to trade in fishery, this has been the cause of poverty among the fishers. We just try to copy what you cannot explain further to anybody who wants know more fishery due lack of information” (Interview with Litare BMU leader, 2016).

The study done by Auc- Nepad (2014) is in line with the above finding that most of the traditional fishers in the developing countries do not have the skills necessary to access more lucrative sectors of the economy and get high income to sustain their dependants and the result is poverty.

Another challenge that fishers face was the infection of deadly disease HIV/AIDS. He pointed that:

“HIV/AIDS has affected and infected many people in the fishery industry thus caused a lot of deaths leaving behind orphans and widows. This has also resulted into low productions in some beaches. Since one cannot go out in the cold night for fishing expeditions which makes production less”. (Interview with Koguna BMU leader, 2016).

The above finding on HIV/AIDS is similar to the finding of Scullion (2013) that fishing communities are a major hot spot for HIV/AIDS due to male dominated, migratory nature with cash on daily basis, limited saving culture, weakening of normal social norms of a home village limited recreational opportunities and risky life style. The disease has led to many deaths of the fishers and increased poverty among the fishers due to lost strength.
4.7 Ways to improve the living standards of fishers in Mbita Sub-County

The fourth objective of the study was to explore ways to improve living standards of the fishers in Mbita Sub-County along Lake Victoria Basin. The researcher sought to know whether they are involved in the conservation of the natural resources, whether they have informal or formal community organisations and how the problems/challenges mentioned in the objective three could be solved.

On whether they are involved in the conservation of the Lake, environment and fish which are the natural resources in the neighbourhood. The figure 13.0 below is the summary of the findings on the conservation of the natural resources available.

**Figure 13.0: Conservation of the natural resources**

Source: Researcher’s field survey, 2016

Figure 13.0: shows that 63% of the respondents are involved in the conservation and preservation of the natural resources while 37% of the respondents are not involved in the conservation and preservation of the resources.
Majority are involved in the conservation or preservation of the resources. This involved making sure that only right size was caught, no one polluted the lake, no one used chemicals or poison fish and clearing off the sea hycine from landing sites.

On whether they have informal or formal community organizations or groups. The figure 15.0 below is the summary of the findings on the informal or formal community organizations or groups.

**Figure 14.0: Community organizations.**

Source: Researcher’s field survey, 2016

Figure 14.0 show that majority of the respondents were either members of informal or formal community organizations with 63% while 37% of the respondents were not members of any community organisation. Community organisations or groups are joined voluntarily with some small registration. It is a powerful tool used by the Governments and NGOs to uplift the low-income people in the rural areas. The members of these organisations can access loans from the groups or banks, get dividends and other social supports.
On the solutions to the challenges and problems mentioned in the findings of the study. Table 20.0 is summery of the findings on the solutions to the problems mentioned.

**Table 20.0: Solutions to the problems/ Challenges in Mbita Sub- County.**

<table>
<thead>
<tr>
<th>Solutions</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper security</td>
<td>40%</td>
</tr>
<tr>
<td>Storage and cooling systems</td>
<td>28%</td>
</tr>
<tr>
<td>Controlling the open access</td>
<td>22%</td>
</tr>
<tr>
<td>Better and fair market policy</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Source: Researcher’s field survey, 2016**

Table 20.0 shows that 40% of the respondents said that the problems above can be solved by having enough patrolling police to control illegal and unregulated fishing, keep them safe from attacks by wild animals and also prevent the loss of fishing gears through theft. The 28% of the respondents said that the above problem can be solved by having improved storage facilities and cooling system to avoid exploitation of the fishers. The 22% of the respondents said that controlling the open access of the fishing can solve the problem stated as this would make beaches have manageable boats and people. The 10% of the respondents said that those problems can be solved if there were a better and fair market policy that would favour both the buyers and sellers.

The issue of securing the fishing ground as solution to the security problem was further highlighted in an interview with the fish trader in Koguna beach where she said that:
“We need armed Police officers to patrol along the lake to enhance security for fishers against wild animals like hippos and crocodile. The fishers need protection from harassment by Ugandan policemen and thieves who steal fishing gears, boats and even what has been caught” (Interview Koguna Village, 2016).

Security of Lake Victoria has been mentioned in many studies as a challenge and cause of poverty among the small-scale fishers while harassment by Ugandan policemen and army has not been mentioned anywhere hence is a new theme. This is however not true because the Ministry of Fisheries has mandated the BMU to control and manage the fishing affairs by coordinating with police to patrol the lake and help solve all the unnecessary issues affecting the fishers.

The need for security in the fishery industry is justified as the fishers in Mbita Sub-County need to be protected from the external and internal forces that interfere with their normal business in the industry. The sector also faces economic, social and physical challenges that should be sorted out by the security personnel so that they cannot be vulnerable to poverty again.

There is need to reduce the fishing frequency and the number of people involved in fishing by encouraging them to pursue other economic activities like farming, quarrying and many others that are viable in the area.

In focus group discussion with crew members of Nyamasare beach where one crew member pointed out that;

“We need to reduce the fishing frequency to enable fish breed or secure lake for fish reproduction. The lake should also be closed for at least three months to allow fish reproduction and growth. There is need to encourage people to do other economic activities like farming, running shops to avoid over dependency on the fishery” (One crew member in focus group discussion in Nyamasare beach, 2016).
In a focus group discussion in Koguna beach/ Village with fish processors and traders on how to improve the life of the fishers through diversification of livelihood, one trader said that;

“We need to change our mind-set to diversify the livelihood. This would reduce over population in beaches and overexploitation that has made life fishers worse. The limited number of fishers will bring sanity and ease management of the beaches” (Interview with a processor in Koguna beach, 2016).

Caddy and Agnew (2004) are in the agreement with the finding of the study on the closure of the lake for some period of time to allow fish as this has really succeeded in Europe through the herring fisheries. However, when it is followed case by case the nature of results makes the efficacy of closure difficult (APFIC, 2010). This is not easy to know how the closure has contributed to the rise of the catch but it can allow for reproduction and growth of fish and fishers also engage in other economic activities to stop over depending on the fishery.

The finding is similar to the argument of Ellis (1998), that livelihood diversification is a process by which households construct a diverse port polio of activities and social support capabilities for survival and in order to improve their standard to living. The Diversification of fisheries can give fishers at least two opportunities; increasing income and reducing their risks (Barret et al, 2001). When poor fishers diversify or changes living activity, it leads to an alternative livelihood that would enable them to come out of poor condition.

When the frequency of fishing is reduced in Mbita sub County then it would allow fish to breed and grow to recommended size and at the same time this would give the fishers time to go for other sources of livelihoods rather than depending on fishery alone. Fishery as other natural resources that get depleted when it is over exploited so
for them to avoid depletion of the resource then they should reduce the frequency of exploitation as they can try other sources of livelihoods.

The researcher sought to know what kind of assistance the fishers may need to mitigate and reduce vulnerability to poverty. Table 21.0 shows the summery of the findings concerning the ways to mitigate poverty among the fishers of Mbita sub-county.

Table 21.0: Poverty eradication assistance

<table>
<thead>
<tr>
<th>Poverty eradication methods</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of loans</td>
<td>38%</td>
</tr>
<tr>
<td>Good markets</td>
<td>27%</td>
</tr>
<tr>
<td>Creation of awareness</td>
<td>20%</td>
</tr>
<tr>
<td>Improvement of infrastructure</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Researcher’s field survey, 2016

Table 21.0 shows 38% of the respondents said that the government and banks should provide loans to the fishers to enable them invest largely in the fishing industry and other industries. The 27% said that provision of fish markets and factories would eradicate poverty. The 20% of the respondents said that creating awareness among the fishers concerning livelihoods would eradicate poverty among them. The 15% of the respondents said that improvement on the infrastructure would eradicate poverty among the fishers and this included provision of life saving jackets, instructions from weather man and management.

The above point on the assistance needed to eradicate poverty was further highlighted in the various group discussions and interviews. The fishers said they need banks near the beaches, where they could save and access loans with low interest rates and they
also need loans from the National or County Government to boost their business as it was mentioned in the focus group discussion. One of the fisher pointed out that;

“We need banks close to us in the beaches so that we can save our fishery income every day. Banks are in Mbita town which is 20Km away from the beach. This discourages many fishers from saving. Banks should encourage fishers to take loans through their terms and interest rates. We need to be given loans by the County and National government and banks to purchase the fishing equipment and gears as they are expensive for most us. The cost of these equipments has made most fishers to resort to using unwanted gears and illegal fishing methods that makes life worse than ever before” (Focus group discussions in Nyamasare, 2016).

The findings of Meikle (2001), are in the line with the study on the need to improve access to financial institutions and access to credit. That ability to access asset is important for fishers because they lack opportunity to access financial asset (loans). To improve ability to access loans decreases dependency of poor fisher on the fishery only, the government should design a credit system which is easier for poor fisher to access it. This credit intervention can help the fishers out of poverty and regulate the number of unwanted gears and those undertaking illegal fishing. Sen (2003), argued that the ability of the poor in accessing financial asset is an important factor which play significant role to lift poor people out of poverty.

The findings indicated the need for fishers in Mbita Sub- County to get loans from the Government and NGOs. Accessing loans for the small-scale investors would make them invest greatly in their business and get more profits and pay back loans afterwards. These would help these small-scale fishers to be able to pay school fees for their children, pay health bills, invest on the required fishing gears and nets, buy assets like land houses and boats to enable them mitigate poverty and live a good life. The improved access to financial institutions can be seen as one way to improve the living standard of fishers through having banks near the beaches, accessing loans the
from governments and banks. However, these points highlighted have been there in this region for sometimes but most of the fishers have not embraced it properly. There is mobile banking or M-swari services for savings so one does not need a bank to save but can open a bank account and then use mobile banking. All banks have their respective agents which is as good as all the banks for saving and withdrawals. There are government loans through the Youth funds and banks also give loans per the ability and savings of an individual. Therefore, this has been away to improve the living standards of the fishers but has not been accessed by many due to lack of information.

The provision of markets that are favouring fishers and factories near the fishers where they can sell directly was proposed as a way to eradicate poverty among the fishers. This was further highlighted in an interview with the fish processor in Nyamasare. He pointed out that;

“Our markets are not favourable to the sellers because the prices are determined by the buyers who exploit us by buying from in low price and selling to others expensively hence make them benefit more than the local man. The local fishers should benefit equally as others do. This can only be possible if markets are regulated and made favourable” (Interview a fish processor at Nyamasare beach, 2016).

In a focus group discussion with fishers at Koguna beach on the need of having a factory within the locality to help fishers solve the problem of transportation and debtors who disappears with their money leaving them poor, one crew member pointed out that;

“We need fish factory near the beach so that we can sell fish directly to the factory without being exploited by the middlemen. When a factory is within this area many people will be employed as loaders, processors and accountants and this will improve our lives” (Focus group discussion in Koguna Beach, 2016).

The finding was similar with Abila (2000) study on Lake Victoria on the issue of unfavourable markets where the profits are enjoyed by middlemen while fishers
themselves remain poor and so if accessing markets are improved for fishers then they will get good income from the sales of the fish improved access to market through good policies and terms of sales then the fishers will come out of the poverty.

Another assistance fishers need to eradicate poverty was that the government creating awareness through seminars, training, conducting public education and demonstrations concerning the livelihood strategies and alternatives livelihoods. There was a big relation between income and education level. This was evidently seen as those who were well trained in the field earn more than the person who was not well due to little skills. This was pointed out in an interview with the area chief:

“We need proper public awareness through teachings and training concerning fish farming to improve the lives of fishers. Even though the ponds that the county government of Homa-bay dug failed to yield required size of fish, but we can try different species until we find the best species with our environment and other sources of livelihoods” (Interview with chief in Nyamasare beach, 2016).

In another interview with a beach leader of Litare beach where he pointed out that public education by the government concerning the livelihoods and the life of fishers at large.

“The government should conduct public education to the fishers on how to live, carry out fishing, marketing fish and the regulations of fishery. We should be trained on how save from fishery and the saving culture which majority of fishers are not aware” (Interview Litare, 2016).

Training makes the expertise and this will make the poor fishers to become experts in the fishery industry and embrace aquaculture as the only way to eradicate poverty. Higher level of education and skilled-labor may help fisher to diversify their livelihood to gain more money and raise their opportunity to gain better life. According to Ellis (1998), poverty is closely associated with low levels of education
and lack of skills, education is also a key factor contributing to the greater ability of better off families to diversify compared to poorer family.

Small scale fishers need a lot of information concerning the industry plus the current world market. This would make them work hard, improve on the methods of fishery and doing the general business. Some of them lacks information that why they are vulnerable so when they are taught on the diversification of livelihoods then we could see different kinds of people.

The fishers also needed improvements on the infrastructure to eradicate poverty. The improvement on the infrastructures included better BMU and social organization. The improvement of the management of beaches would eradicate poverty among the fishers as was pointed out in the interview with a fish processor at Nyamasare beach.

_The beach management unit should able to control all the businesses in the beach including illegal and over fishing and corruption to improve the lives of fishers” (Interview a fish processor at Nyamasare beach, 2016)._ 

The Power of Beach Management Unit to control and provide assistance out of poverty for small scale fishers is immensely discussed in many studies. BMU is devolved kind of governance where the fishing communities have the opportunity to lead themselves and collect their leaders.

The issue of formation of co-operative society and Saccos in beaches to improve the living standards for the fishers was in focus group discussion in Lwanda Rombo Beach where one Processor said:

_“We need to have a co-operative society for us to save in, get loans, and get education which can fight for us. The co-operative society will help us in fighting for us and making we get the services in the best way and timely. On negotiations of prices the society will ensure we get the best prices possible and become richer.”_
We need to form Saccos as the fishers to enable us in saving and fight for our rights. The Saccos are able to follow the debtors and ensure they pay all the traders their debts and make sure everyone saves something per day and can access loan in order to live well” (Focus group Lwanda Rombo, 2016).

This is similar to the finding of Rahman et al., (2002), the study on the strengthening of community organization through the joining of societies and saccos which can enable them to come out of poverty through networking themselves. Participation in community organization would make them get access loans or insurance, food, accommodation and life skills easily (Mosser, 1998). Fishers co-operative societies have been there for many years it is only that they have never made serious move to join it and have some help through it. The government of Kenya gives loan to the groups (youths) “Uwezo funds” to enable them start business. The call for the fishers to form Saccos and join co-operative societies has been there for along but majority of the fishers tend to ignore it and so they have to embrace it in order to have improvement on their livelihoods. The poor fishers can improve their living standards by joining the community organizations like the co-operative societies and Saccos to help in marketing their products, educating them on the best ways of saving, loaning fishers and a saving institutions for the poor fishers.

When the researcher sought to know the future prospects of the fishers in Mbita sub county.

Table 22.0 is summery of the findings on the future prospects of fishery in Mbita Sub County.
Table 22.0: Future prospects of fishery

<table>
<thead>
<tr>
<th>Future prospects</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venture into other business</td>
<td>53%</td>
</tr>
<tr>
<td>Expand his fishery business</td>
<td>35%</td>
</tr>
<tr>
<td>Do not know what will happen</td>
<td>12%</td>
</tr>
</tbody>
</table>

Source: Researcher’s field survey, 2016

Table 22.0 show that 53% of the respondents hope to leave fishing industry and venture in other profit-making business, 35% of the respondents hope to enlarge their fishing activities by buying more boats, investing a lot of money in the sale and going into large markets and 12% of the respondents said that they do not know what will happen to the future of fishing as it’s full of uncertainty. They live everything in the hands of fate to control whether they will be successful or fail.

Majority of these respondents are hoping to start other business that does not face similar problems and challenges that fishery is facing therefore there is no future for them in this sector. These problems that they are facing in the fishery sector are many and interferes with their normal operations. The members who felt that the fishing industry would get better as time gets better this because they have seen good times in this industry and bad times. The other group who are not aware of what to because they are casual workers who fully depend on the fishery industry and this is where they can get the livelihoods.
CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to determine the implications of fishers’ livelihood on poverty reduction in Mbita Sub-County. To understand this, qualitative and quantitative tools such as questionnaire, open ended interview guide and focus group discussions were informed by PPI questions was used. The objectives of this study were; to find out the livelihood strategies of fishers, to investigate the causes of poverty among the fishers, to determine the livelihood challenges of fishers and to explore the ways to improve the living standard of the fishers.

PPI is an internationally recognized approach for tracking the livelihood status of households based on globally accepted international poverty lines and nationally recognized poverty lines. By using this measure, livelihood status of households is categorized as follows Category A those living under the $1.25/day Category B living between $1.25 a day and $2.5/day category C living with more than $ 2.26 day/ PPI.

This chapter ties the findings of the study together drawing conclusions for each of the study’s research objectives.

5.2 Conclusions

Conclusions in this study point clearly that there is 32.8% likelihood fishing community of Mbita Sub-County are poor and live below poverty line by earned <$1.25/day, 50.8% of the respondent household earned between $1.26 and $2.5/day dollar and 16.4% of the respondent household earned >2.6 dollar a day. Those who earn less than $1.25/day are considered poorer than those who earn more than $1.26
and less $2.6/day. The 16.4% of the respondent fishers are considered to be rich because they earn more than $2.6/day and their likelihood of being below poverty line is 10.8%. This was well reflected by the result from the PPI score questions used as the indicators of poverty. The findings of the showed that majority of fishers who had diversified livelihoods are in the second poverty where they earned between $1.26/day and $2.5/day as compared to those who do not have other sources of livelihood. The other sources of livelihood had helped them acquire other assets like gears, boats, land, houses, education and better health care.

The findings of the study revealed the strength of association between the variables of highest education level and poverty category is medium \((r= 0.305)\), and the correlation coefficient is very significant different from Zero \((p< 0.001)\). The higher the level of education the higher poverty category. The households whose heads are learned not likely to be below poverty line. The study revealed that the strength of association between fishing experience and poverty category is not significant \((r= -0.130)\), however, it’s negatively correlated. Those fishers who had taken a long time in the are not likely to be poor. This is because fishery had enabled them acquire assets that could help them avoid living in poverty.

The last correlation the researcher did was between the poverty category and other sources of income. The strength of association between the variables is not significant \((r= -0.130)\), however, it’s negatively correlated. Engagement in other sources of livelihood is likely to reduce poverty among the fishers.

### 5.2.1 The livelihood strategies of fishers in Mbita sub-county.

Based on the research findings as outlined in chapter 4, the researcher found out that majority of the respondents had small business as other livelihood strategies with 35%
small holding business means operating means of transport like *boda boda*, motorized boats and taxi, selling of second hand clothes (*Mitumba*), vegetables, operating pubs, restaurants and kiosks. Thirty percent of the respondents are involved in the farming which include garden and subsistence farming, keeping of livestock for example goats, cattle and sheep. Twenty five percent (25%) of the respondents had mining as their other livelihood strategies; Sand and Quarrying. Ten percent (10%) of the respondents were employed in the informal employment sectors like construction sites, watchmen, home guards, housemaids and casual workers. Fishers in Mbita Sub-County also diversified their livelihood through doing small business, seeking informal/ formal employment opportunities, farming along the lake and mining as corroborated in Smith et al., (2005), (Allison unpublished) had noted in the study done Lofoten islands, Allison (Unpublished) in their study at Norfolk and Friere and García-Allut (2000) in the study done Galicia NE Spain also noted these livelihood strategies of fishers. Diversification may, thus, be considered as a deliberate household strategy to smooth incomes or to manage risks, or it may be an involuntary response to crisis to cope with shocks (Bryceson 1996, 1999; Delgado and Siamwalla 1999; Toulmin et al., 2000; Barrett, Reardon and Webb, 2001)

The fishers of Mbita Sub-County diversify the livelihoods to reduce vulnerability to poverty when the catch was low and as a way to accumulate other assets. The impact of these livelihood was an improved income through access to financial institutions, improved human capital, increased social assets and acquisition of more physical assets. The diversification was not forced on the fishers but out of the individual personal choice even though the Government agencies have encouraged them to do so.
5.2.2 The causes of poverty among the fishers of Mbita Sub -County.

As the community members of Mbita Sub-County were busy trying to supplement their livelihoods through other strategies poverty is still immense among them. Poverty among the fishers was caused by seasonal changes. The seasonal changes which resulted into bad weather and bad weather included strong winds, rainfall and cloudy days as also noted by Auc–Nepad (2014) in their study on the east Fisheries and Khomsatun (2013) in his study in Indonesia.

The other cause of poverty among the fishers of Mbita Sub-County was exploitation by the middlemen. They sell unprocessed fish stocks cheaply to the middlemen due lack of storage facilities and cooling box as noted by Abila (2000), in their studies along Lake Victoria.

Another cause of poverty among fishers was perceptions they are poor because they are fishers and then that was now the point of departure for their thinking. This is kind of psychological mindset has been a big problem to them and makes them associate with bad acts because they are fishers, as corroborated by Bene (2003), argument that fishers are poor because they are fishers.

Government tax and poor leadership was also mentioned the cause of poverty. The taxes are heavy which interferes with household expenditure and saving plans of the person leading to poverty of the fisher. The poor leadership which are involved in the corrupt dealings which affect the out of fisheries are also the cause of poverty also mentioned by Abila (2000) in their studies along the beaches of Lake Victoria.

Drug abuse and poor planning were mentioned as the cause of poverty the fishers. Fishers are poor due to the abuse of drugs. Some of the fishers spend all the amount of money they get in a day on buying alcohol and bhang. They do not plan well with
little money they get from the fisheries instead spend the whole of it in drugs and prostitution as noted by Khomsatun, (2013) in his study on Subaraya small scale fishers.

5.2.3 The challenges faced by the fishers in Mbita Sub-County.

The challenges that fishers faced are divided into two the hazardous and the common problems. The study found out the hazards are attack from the wild animals, change of weather patterns and Waterborne diseases like typhoid, amoebae, cholera and aid related diseases are very dangerous as they kill and affect one from fishing as noted by Abila (2000) in his study around Lake Victoria basin.

On the problems faced by fishers’ insecurity was mentioned and it came out clear that that there was no social, economic and physical security among the fishers of Mbita Sub County. The open access of the lake was mentioned as a problem which has led to over-exploitation of the fish stock the tragedy of the common as also noted by Kleith (2003). Poor leadership was a problem the study found out, as those elected are incompetent to carry out their work properly instead collect more tax from the people. Lack of financial institutions was a challenge to the fishers’ face as they could not access bank to save and get loans. Another challenge faced by the fishers of the Mbita Sub County was bad debts, they sell fish hoping to be paid but then they delay or fails to pay. Lack of storage facility, HIV/AIDS, lack of fishing knowledge and fish markets were all mentioned as the challenges faced by the fishers also corroborated by Abila (2000) and Omom (2009) in their studies around Lake Victoria.

5.2.4 Ways to improve the living standards of the fishers in Mbita Sub-County.

The solutions to the challenges above is through provision of adequate security personnel to control illegal and unregulated fishing, keep them safe from attacks by
wild animals and also prevent theft of fishing gears and boat. Social and economic insecurity can be solved by ensuring that the poor fishers are access financial asset which is an important to take them out of poverty as noted by Sen (2003). That ability to access asset is important for fishers because they lack opportunity to access financial asset (loans). To improve ability to access loans decreases dependency of poor fisher on the fishery only, the government should design accredit system which is easier for poor fisher to access it. This credit intervention can help the fishers out of poverty and regulate the number of unwanted gears and those undertaking illegal fishing as corroborated by Meikle (2001).

The challenges faced by fishers above problem can be solved by having improved storage facilities and cooling system to avoid exploitation of the fishers. The solutions to the challenge of open access which lead to the ‘tragedy of the commons’ is through controlling fishing time and period and ensuring specific number of boats are fishing.

The solution to the challenge of exploitation is to have better and fair market policy that would favour both the buyers and sellers as noted by Abila (2000) study on Lake Victoria on the issue of unfavourable markets where the profits are enjoyed by middlemen while fishers themselves remain poor and so if access to markets is improved for fishers then they will get good income from the sales of the fish.

On the prospects of fishing some of the respondents said they hope to leave fishing for another job if opportunity avails and other also hoped to expand their fishing activities by buying more boats, investing a lot of money in the sale and going into large markets at same time there are those who do not know what will happen to the future of this industry.
5. 3 Recommendations

The study recommends that the government should formulate rules and policies that encourage fishers to diversify their livelihoods. This is supported by the finding of this study that those who have more than one source livelihood are not likely to live below the poverty line and those who depend on source of livelihood are more likely to live below the poverty line. These policies and regulations adopted should encourage farming to enable the fishing community to turn to it rather than depending fishing alone. The promotion of aquaculture would help fill the gaps left by the loss of fish stocks.

The government should encourage fishers to try farming by providing the good seeds and fertilizers and keeping of livestock by giving them best breeds that can survive in that area. They should also be encouraged to venture in other forms of business that can generate income to reduce overcrowding in the beaches. This will expand the livelihood strategies of the fishers therefore will lead to poverty reduction.

In order to reduce poverty among the fishers the government should ensure there is good institutional infrastructure such as laws, rules and regulations that would promote economic development in the area like building factories, banks and roads within the locality. These infrastructures would solve the problem of small scale fishers to save their incomes in proper banking institutions as the study found out that very respondents save in the bank due unavailability of banks nearby and having factories and cooling storage would solve the problem of exploitation of the fishers by the middle men.

The government should build the capacity of fishers by educating them on how to fish and sell, and how to plan for the future with the income and equal representation at
the management, full consultation with the community before initiation of any project where the bottom-up approach is fully employed. Capacity building can be done through the loans, grants and lowering of taxes to enable them carry out business. This would solve the problems that the study found like perception of fishers so through training their perception can be changed. Capacity building of the fishers can also help them learn new knowledge in the fishery, markets and savings.

The government should secure the lake and the surroundings to end the loss of gears, harassment by Ugandan Policemen, attacks by wild animals as revealed by the study findings on the challenges faced by the fishers in Mbita Sub County. The provision of the security by Government would solve these challenges faced by fishers and it is the role of the government to provide security its citizens.

The further studies can do a comparative on fishers’ livelihoods and non-fishers livelihoods.
References


APFIC. (2000). Best practices to support and improve the livelihoods of small scale fishers and acquaculture households. *FAO Regional office for Asia and the Pacific, Bangkok, Thailand.*


APPENDICES FOR THE STUDY

APPENDIX 1.0 Questionnaire

**TITLE OF THE THESIS:** IMPLICATION OF FISHERS' LIVELIHOOD ON POVERTY REDUCTION ALONG LAKE VICTORIA BASIN: A CASE OF MBITA SUB COUNTY,

☐ This study is being conducted by KETA K. JACOB a Master's student at Kisii University. The study is strictly for academic purposes and shall not be used for any other purpose whatsoever. I pledge that all information supplied will be kept confidential. It has been approved by the Supervisors and HODS. The task requires the participants to answer a series of questions. I

Signature of the 

Statement to be signed by the participant:

I understand that my participation is voluntary and that I may withdraw at anytime during the

Signed by Participant Date

Section I: Personal Information

Please tick where necessary

1. Age
   a). 10-17 ( ) b). 18-25 ( ) c). 26-35 ( ) d). 36-45 ( ) e) Above 46 ( )

2. Marital status
   a) Married ( ) b) Single ( )
   If single specify a) unmarried ( ) b). Divorced ( ) c). Separated ( ) d). widows/widowers ( )

3. What is the highest school grade that the female head/spouse completed?
   a). None- Pre-Primary ( ) b). Primary Stds 1-6 ( ) c). Pri. 7 ( ) d). Pri. 8 and forms 1-3( )
   e). No female head/ spouse ( ) f). Secondary form 4 or higher ( ).

4. How long have been in the fishery?
a). 1-5yrs ( ) b). 6-10 years ( ) c). 11-15 years ( ) d). Many years ( )

5. How many members does the household have?
a) One/two ( ) b). Three ( ) c). Four/six ( ) d). Nine or more ( )

6. What kind of business is the main occupation of the male spouse connected with?
   a). Does no work ( ) b). No male heads/spouse ( ) c). Fishing/Mining/Farming ( )

7. How many rooms does the household occupy in its main dwelling?
   a). One ( ) b). Two c). Three ( ) d). Four or More ( ).

8. The floor of the main dwelling is predominantly made up of what
   a). wood/earth ( ) b). cement or tiles ( )

9. What is the main source of lighting fuel for the household?
   a). Collected firewood, purchased fire woods, grass, or dry cell (torch) ( ) b). Candles paraffin. Biogas or other ( ) c). Electricity, solar or gas ( ).

10. How many mosquito nets do your household own?
    a). None ( ) b). One ( ) c). Two or more ( )

11. Does your household own and irons (electric or charcoal)?
    a) No ( ) b) Yes ( )

12. How many towels do your household own?
    a) None ( ) b). One ( ) c) Two or more ( )


section II: Livelihood Strategies.

14. Do you have other sources of income apart from fishing? a). yes ( ) b). no ( )
If (yes) name them ..............................................................

15. Does your monthly/annual income enough to cater for your domestic expenses?
    a). yes ( ) b). no ( )

16. Are you able to provide adequately for your children’s educational needs from fishing incomes?
    a). yes ( ) b). no ( )

17. If NO, how do you pay for educational needs? ..........................................................
SECTION III: Causes of Poverty among the fishermen.

18. Whom do you sell your products to? .........................................................

19. Who decides on the prices of the fish / product? ..............................

20. Do you save your income a) yes. ( ) b). no. ( )

21. Do you have access to loans? a). yes ( ) b). no ( )

22. What are the perceived causes of poverty among the fishers .................?

23. What is a poor person according to you..............................................?

SECTION IV: Challenges faced by the fishermen

24. Are you able to get informal / formal training? a). yes ( ) b). no ( )

25. Do you have access to information? a). yes ( ) b). no ( )

26. Do you get government support? a) yes ( ) b). no ( )

27. Do you get the support from NGOs? a). yes ( ) b). no ( )

28. Do you get free tools for production? a). yes ( ) b). no ( )

29. What hazard(s) do you face during fishing activity?
..........................................................................................................................................

30. How do the hazards stated in 29. affect your output?
..........................................................................................................................................

31. What are the problem(s) you face in undertaking your work?
32. How do the problems stated in Q. 31 affect your work?

SECTION V: Solutions to the problems
33. Are you involved in the conservation of the natural resources? a). yes ( ) b). no ( )

34. Do you have informal / formal groups? a). yes ( ) b). no ( )

35. How can problems stated in Qn. 31 be solved?

36. What kind of assistance would you need to eradicate poverty?

37. What could be your future prospects of your fishing activities?

Thank you.
APPENDIX 2.0 Interview Guide

<table>
<thead>
<tr>
<th>Landing site</th>
<th>Date</th>
<th>Time taken</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age bracket</th>
<th>Sex</th>
<th>Size of household</th>
<th>Education level</th>
<th>Main occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main dwelling rooms</th>
<th>Source of light</th>
<th>Iron box</th>
<th>Mosquito nets</th>
<th>How long in the fishing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Towels</th>
<th>Fraying pans</th>
<th>Other income</th>
<th>Annual income</th>
<th>Education needs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Which group are involved in the fish production and under what production systems?
2) How important is fishing to the livelihoods of the smallholders involved?
3) What proportion of the out sold and what proportion is consumed?
4) At what time of the year is cash income more?
5) Does the income you get from fish production able to pay for your health bills, school fees for your children, and meals?
6) Do you have any other source of livelihoods apart from fishing or job related to fishing?
7) How do you use the assets to fill in the gaps left by the fisheries business?
8) Where do you get valuable information concerning the livelihoods?
9) Do people know their rights, Policies and Legislation? That impact on their livelihoods?
10) Which group has the access to the lake resources?
11) What are the types of access rights?
12) Can you mention for me different categories of people in your society?
13) Can you describe the types of people in your society?
14) Do you have access to appropriate financial service institutions to save for the future?
15) What are causes of poverty among the fishers?
16) How secure is the lake resources?
17) Is there any evidence of conflict over resources?
18) What are the challenges that you face as the fishers?
19) Has the production of the lake been changing over period of time?
20) How is the fisheries been affected by the externalities?
21) How can we improve the productivity of the lake?
22) In what ways can the lives of fishers be improved?
### APPENDIX 3.0: Focused Group Discussions Guide

<table>
<thead>
<tr>
<th>Landing site</th>
<th>Date</th>
<th>Time taken</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Age group</th>
<th>Female</th>
<th>Male</th>
<th>Marital status</th>
<th>Level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>Size of h/shold</td>
<td>Iron box</td>
<td>Main dwelling</td>
<td>Main occupation</td>
</tr>
<tr>
<td>Nets</td>
<td>How many rooms</td>
<td>How many towels</td>
<td>Income enough</td>
<td>Education needs</td>
</tr>
</tbody>
</table>

1. Which group are involved in the fish production and under what production systems?
2. How important is fishing to the livelihoods of the smallholders involved?
3. What proportion of the out sold and what proportion is consumed?
4. Does the income you get from fish production able to pay for your health bills, school fees for your children, and meals?
5. Do you have any other source of livelihoods apart from fishing or job related to fishing?
6. Where do you get valuable information concerning the livelihoods?
7. Can you mention for me different categories of people in your society?
8. Do you have access to appropriate financial service institutions to save for the future?
9. What are causes of poverty among the fishers?
10. How secure is the lake resources?
11. Is there any evidence of conflict over resources?
12. What are the challenges that you face as the fishers?
13. How are the fisheries been affected by the externalities?
14. How can we improve the productivity of the lake?
15. In what ways can the lives of fishers be improved?

### APPENDIX 4.0: PPI Score conversion table
<table>
<thead>
<tr>
<th>PPI SCORE</th>
<th>$1.25/day</th>
<th>$2.50/day</th>
<th>$4.00/day</th>
<th>$8.44/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>5-9</td>
<td>97.5</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>10-14</td>
<td>86.2</td>
<td>99.6</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>15-19</td>
<td>86.0</td>
<td>99.3</td>
<td>99.5</td>
<td>100.0</td>
</tr>
<tr>
<td>20-24</td>
<td>81.9</td>
<td>99.0</td>
<td>99.5</td>
<td>100.0</td>
</tr>
<tr>
<td>25-29</td>
<td>70.1</td>
<td>96.2</td>
<td>99.4</td>
<td>100.0</td>
</tr>
<tr>
<td>30-34</td>
<td>63.1</td>
<td>95.4</td>
<td>98.6</td>
<td>99.9</td>
</tr>
<tr>
<td>35-39</td>
<td>49.0</td>
<td>91.8</td>
<td>98.2</td>
<td>99.9</td>
</tr>
<tr>
<td>40-44</td>
<td>35.1</td>
<td>82.0</td>
<td>95.5</td>
<td>99.8</td>
</tr>
<tr>
<td>45-49</td>
<td>24.9</td>
<td>75.3</td>
<td>93.8</td>
<td>99.5</td>
</tr>
<tr>
<td>50-54</td>
<td>9.6</td>
<td>61.1</td>
<td>88.5</td>
<td>98.7</td>
</tr>
<tr>
<td>55-59</td>
<td>6.8</td>
<td>44.4</td>
<td>75.5</td>
<td>95.6</td>
</tr>
<tr>
<td>60-64</td>
<td>1.4</td>
<td>29.0</td>
<td>63.2</td>
<td>94.6</td>
</tr>
<tr>
<td>65-69</td>
<td>0.8</td>
<td>20.3</td>
<td>47.4</td>
<td>87.5</td>
</tr>
<tr>
<td>70-74</td>
<td>0.1</td>
<td>8.9</td>
<td>31.7</td>
<td>78.7</td>
</tr>
<tr>
<td>75-79</td>
<td>0.1</td>
<td>5.4</td>
<td>21.1</td>
<td>70.6</td>
</tr>
<tr>
<td>80-84</td>
<td>0.1</td>
<td>3.0</td>
<td>10.8</td>
<td>60.0</td>
</tr>
<tr>
<td>85-89</td>
<td>0.0</td>
<td>1.2</td>
<td>4.7</td>
<td>43.3</td>
</tr>
<tr>
<td>90-94</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>24.3</td>
</tr>
<tr>
<td>95-100</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Poverty likelihoods here for $1.25 and $2.50/day 2005 PPP slightly adjusted from Schreiner (2011). They Have been adjusted to ensure that poverty likelihoods never increase as the scores increase. [www.Progressoutofpoverty](http://www.Progressoutofpoverty).
APPENDIX 5.0: Map of Mbita Sub - County

APPENDIX 6.0: Photos of the Researcher.

Focused Group Discussion at Lwanda Rombo and Researcher with one fishers displaying Nile Perch (Mbuta).
Appendix 7.0 Introduction Letter

The Director,
National Council of Science, Technology and Innovations (NACOSTI)
P. O Box 30623 00100
NAIROBI

Dear Sir/Madam,

RE: INTRODUCTION LETTER FOR KETA KIDA JACOB – MAS21/60052/15

This is to confirm that the above mentioned student is a bonafide member of Faculty of Arts and Social Science of Kisii University. He is undertaking a course leading to Masters of Arts in Development Studies.

He has completed his coursework and successfully presented his proposal entitled “Fishers’ Livelihoods and Implications on Poverty Reduction along Lake Victoria Basin: A case of Mbita Sub-County, Homa Bay County, Kenya” and is now embarking on research. Any assistance accorded to him is highly appreciated.

Thank you.

Yours faithfully,

[Signature]

Deputy Registrar (Postgraduate)

KISII UNIVERSITY
NAIROBI CAMPUS
OFFICE OF THE POSTGRADUATE COORDINATOR
P.O. Box 408 - 40200
KISII – KENYA

Our Ref: KSU/PG/04/16

DATE: 5th August, 2016
Appendix 8.0: NACOSTI Authorization

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2211371, +254-312265, +254-219420
Fax: +254-20-318249, +254-219420
Email: nd@nacost.go.ke
Website: www.nacost.go.ke

Ref. No.

NACOSTI/P/16/17305/13093

16th August, 2016

Jacob Kida Keta
Kisii University
P.O. Box 402-40800
KISII.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Fishers livelihoods and implications on poverty reduction along Lake Victoria Basin: A case of Mbita Sub County, Kenya.” I am pleased to inform you that you have been authorized to undertake research in Homa Bay County for the period ending 16th August, 2017.

You are advised to report to the County Commissioner and the County Director of Education, Homa Bay County before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:
The County Commissioner
Homa Bay County.
The County Director of Education
Homa Bay County.
Appendix 9.0 Research Permit

**Permit No:** NACOSTUP/16(173)/05/13093
**Date Of Issue:** 16th August, 2016
**Fee Received:** $1000

**MR. JACOB KIsa KETA**
Of KISII UNIVERSITY, 0-40305 Mbaita, has been permitted to conduct research in Homabay County on the topic: **FISHERS LIVELIHOODS AND IMPLICATIONS ON POVERTY REDUCTION ALONG LAKE VICTORIA BASIN: A CASE OF MBITA SUB COUNTY, KENYA** for the period ending 16th August, 2017.

**Applicant's Signature**

**Director General**
National Commission for Science, Technology & Innovation

---

**CONDITIONS**

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least (two) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.

---

**RESEARCH CLEARANCE PERMIT**

**National Commission for Science, Technology & Innovation**

**Serial No:** 10631

**CONDITIONS:** see back page

---

132