ACTORS INFLUENCING SUSTAINABILITY OF WORLD VISION FUNDED WATER ROJECTS IN TRANSMARA WEST AND EAST DISTRICTS, NAROK COUNTY, KENYA

BY

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DECLARATION

This research project is my original work and has not been presented for the award of a degree or diploma to any other University. No part of this research should be reproduced without my consent or that of University of Nairobi.

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This research project has been submitted for examination with my approval as supervisor of University of Nairobi.

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DEDICATION

I would like to dedicate this work to my beloved Wife Eve Ywaya, my daughters Lulu, Triza and Michelle and Parents Mr. Ben Kamuren and Mrs. Jane Kamuren who inculcated and inspired in me the value of education during my tender years and standing firm with me and friends who supported me to make this research project a success.

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To my wife, children, mum, father, brothers, sisters am grateful for your support and encouragement. I appreciate a lot. Finally, to God be the Glory and honour!

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ACROYNMS AND ABREVIATIONS

ASAL:	Arid and Semi-Arid Land
CBO:	Community Based Organization
FGM:	Female Genital Mutilation
IPA:	Integrated Programme Area
LDCs	Least Developed Countries
NO:	National Office
PHC:	Primary Health Care
SD:	Sustainable Development
SPSS:	Statistical Package for Social Sciences
UNEP:	United Nations Environmental Programme
USAID:	United States Agency for International Development
WWF:	World Wide Fund
WVK:	World Vision Kenya

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ABSTRACT

Most donor funded organizations/projects are faced with challenges in addressing sustainability of projects. This has resulted in the increasing numbers of failed and abandoned projects, withdrawal by donors, dependency by communities and poor cohesion. It is for this reasons that the study sought to evaluate World Vision (WV) funded water projects. The objectives of this study were; to establish the influence of community involvement on sustainability of WV funded water projects; to examine the influence of efficiency of water management committee on sustainability of WV funded water projects; and to assess the influence of relevance/or appropriateness of technology on sustainability of WV funded water projects. The descriptive survey research design was used to capture opinions and attitudes relating to the study qualitatively and quantitatively. It entailed the collection of primary data through questionnaires. Purposive sampling was used to identify the respondents for the study. A sample of 60 respondents was targeted and 48 responded to the research instruments. This was deemed favorable to the study as it represented 80% turnout and, further, the sample size was amenable to statistical analysis. Executive committees in the water projects doing daily management of the projects were the units of analysis. Data was analyzed using SPSS 11.0. The data was analyzed descriptively, presented in tables and then the results interpreted. The findings of this study highlighted how the independent variables (efficiency, relevance and community involvement and participation) contribute to the overall sustainability of WV funded water projects in the study area. The findings also suggest that gender parity and equity were significant to the research and, hence, to the sustainability of the projects from the study, The greater majority 76% of the women had only primary school level of education as opposed to only 56% of the males having the same qualifications of the remainder, only 12% of them had attained level education as compared with 19% of the men who had the same.. The projects had made inroads in the community and had impacts in the areas, as such, they had gradually gained community support and involvement at all stages of their development. They had also registered impressive efficiency reports although this was in most cases an attribute of inherent design characteristics. However, they still needed management strategies to ensure their sustainability. The environment had not been compromised by the projects which were a good sign that the technologies were indeed appropriate but they still faced challenges of maintenance and support which invariably called for improved capacity for their future handlers. There was need to involve the female gender at every stage of the projects due to their evident propensity in managing the projects for sustainability. Policy makers should revise their strategies to better the approach and practice of SD initiatives in the light of current developments. There should also be more innovations by the practitioners to make the projects more adaptable, economical and sustainable in the future.

CHAPTER ONE:

INTRODUCTION

1.1 Background of the study

Sustainable Development initiatives have been conducted in various parts of the world like in Europe and Central Asia, Africa and also in other continents in varying proportions. In terms of sector performance and prospects, the Europe and Central Asia (ECA) region may be divided into four broad groups of countries. Group I includes the first tier European Union (EU) accession countries. In these countries, the transition is well under way and has largely succeeded in improving the level and quality of services and the capacity and financial viability of sector institutions. The main challenge for the future is to continue enhancing the efficiency of sector institutions and mobilize the enormous resources needed to meet standards for wastewater treatment demanded by the EU According to the World Health Organization (WHO), 80% of all illnesses in the world are associated with non-potable or poor quality water. Consequently, the cost of poor access to water entails very high social costs. Furthermore, upstream investment (in terms of health and sanitation) results in heavy costs and losses if there is insufficient investment downstream that is in the water sector. In Kenya, several initiatives have been developed to ensure sustainable water management among them being the five mega Dams constructed in the country.

Sustainable Development stands for meeting the needs of present generations without jeopardizing the ability of futures generations to meet their own needs – in other words, a better quality of life for everyone, now and for generations to come. It offers a vision of progress that integrates immediate and longer-term objectives local and global action, and regards social, economic and environmental issues as inseparable and interdependent components of human progress. According to Stella (2008) as a developing country, Kenya receives large amounts of foreign assistance, most of which is distributed through non-governmental organizations. NGOs operate at all levels - grass-roots, national, regional and international. Many conduct high-impact; high-resource projects and operates in the fields of water, health, refugees, environment, human rights, education, and other key aspects of international development.

Many NGOs lack requisite skills to manage their organizations and programmes, yet there are few competent capacity building providers offering quality and sustainable services. Lack of efficient, relevant and community involvement in the projects implemented by such NGOs is key challenge towards achieving sustainability. Sustainability is related to the quality of life in a community, that is whether the economic, social and environmental systems that make up the community are providing a healthy, productive, meaningful life for all community residents, present and future (Smil, 2000).

Sustainability of donor funded water projects has been a vital issue in the water sector in Kenya. Sustainable, efficient and equitable management of water is the interest of the government and donor organizations. Several factors have been attributed to sustainable water management and this study will evaluate sustainability of World Vision Kenya - Kirindon IPA funded water projects. This study was motivated by the need for continuity of water projects after withdrawal of donor support. For example, Kimintet water pan commonly known as Hippo dam, at Kimintet location in Kirindon Division the was constructed by the Ministry of Arid and Semi-arid Lands in collaboration with USAID collapsed after a crack on its wall was not attended to for a long time

1.2 Statement of the problem.

Developing countries especially in Africa are currently giving more priority to rural development due to the fact that a significant proportion of their populations are still in these areas and also to reduce the rural urban migration that consequently piles pressure on the urban areas and strains facilities. The countries main problem is to identify and implement ways that can speed up its rural development since resources are always limiting. Further while the few available resources are invested in development programs, local people often do not appreciate these programs and are not involved in their implementation as expected by development agencies hence lack of sustainability of projects implemented a long these development programs (Stella, 2008). According to Bossert (1990), the common response to this problem of sustainability is to ensure that handover and transfer of responsibilities is built into the project from the start and continually monitored.

WVK supports many initiatives which are largely donor driven in Kenya. After the withdrawal of donor support, many of these initiatives have had challenges in survival. The agencies main role is to facilitate the process of community betterment but opportunity has to be afforded the community to better it members living condition. The ultimate goal is to help the community to a point where it has developed to shoulder its own development initiatives and this is done through capacity building during implementation. At this point change agents withdraw or minimize their assistance to the community and as a result there has been difficulty in achieving sustainability and replicability of projects which is the ability of a given project to remain viable after external support is terminated. Several factors put NGOs in jeopardy and some NGOs seem to be getting tired of the effort and continual monitoring involved in maintaining the community involvement which is a pre-requisite of a sustainable project. Donors are discouraged by the number of failed projects, abandoned projects, bad governance, accountability and the number of new groups who make no attempt to break their dependency on NGOs but simply solicit for more funds year after year. This does not auger well with the continuity and sustainability objectives of the donors.

The study focused on the influence of the relevance, community involvement and efficiency of WV funded water projects in Kirindon IPA. It aimed at determining the reasons and factors that influence the sustainability of such projects.

1.3 Purpose of the study

The purpose of the study was to examine factors that influence sustainability of WV funded water projects in Transmara East and West Districts.

1.4 Research Objectives

1. To establish the influence of community involvement on the sustainability of WV funded water projects in Transmara district.
2. To examine the influence of efficiency level of the water management committees on sustainability of WV funded water projects in Transmara district.

3. To assess the influence of using relevant or appropriate technology on the sustainability of WV funded water projects in Transmara district.

1.5 Research questions

The following questions were designed in accordance to the purpose of the research.

1. How do community members involvement influence sustainability of the WV funded water projects in Transmara district?
2. What is the influence of efficiency of the water management committees on the sustainability of WV funded water projects in Transmara district?
3. What is the influence of appropriate technology on the sustainability of WV funded water projects in Transmara district?

1.6 Significance of the study

This study intended to assess the influence of the variables of the research and eventually come up with findings which can be used to help development agencies, the government of Kenya and other stakeholders in addressing the sustainability challenge of projects completed, underway and those in the future. It is also meant to provide vital information that will improve cordial relationship between communities and their donors such that their demands are met and client satisfaction is achieved through improved sustainability of projects.

1.7 Limitations of the study

Vastness of the area and poor road infrastructure was anticipated as a limitation of this study, especially the month of April and May being a rainy season roads were impassable thus limiting access to certain areas. Nevertheless all available means of transportation including trekking were used to ensure all the respondents were reached. Unwilling respondents and language barrier was also anticipated, however, their confidentiality was assured so as to clear any doubts acting as potential barriers while provision for language barrier was made by use of translators conversant with local languages in the area.

.8 Delimitation of the study

The research targeted WV funded water projects in Kirindon IPA that are in implementation phase to the completed ones. Such projects have rich information since they are already integrating sustainability in their interventions. Projects that are at seed phase or assessment and design phase was left out since they have not embarked fully in implementation.

Therefore, the research focused on executive committee members of the water projects (chairperson, secretary and treasurer) as respondents thus leaving out other committee members in the Project. This is because the executive are better placed and have clear understanding of the projects history, challenges, sustainability issues and they are involved in the daily management of the projects.

1.9 Study assumptions.

The study assumed that, firstly, there was sufficient cooperation between the researcher, government line ministries, water management committees and the beneficiaries and also the respondents were sincere to give an objective feedback and also the translators did not misconceive the responses and feedback. Secondly; there was adequate finances to carry out the study, and lastly, all the questionnaires were properly filled and returned in time.

10 Definition of significant terms.

xecutive Management.

his is the selected/elected members of the water management committees in charge of coordinating aily activities, book keeping and custodians of projects assets. That is Chairperson, treasurer and the ecretary.

ustainability

: is the ability of a project to continue with the delivery of service and goods even after the donors have eft/ phased out/transition.

Relevancy

Whether beneficiaries were consulted coupled with collaboration with other stakeholders and also the ıse of appropriate technology.

Efficiency

How well the projects are delivering services and the capacity of the water management committees in managing those projects.

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

1.11 Organization of the study.

Chapter one of this Project research introduces the problem statement and described the specific problem addressed in the study

Chapter two presents a review of literature and relevant research associated with the problem addressed in this study. Chapter three presents the methodology and procedure used for data collection and analysis. Chapter four contains an analysis of the data and presentation of the results. Chapter five offers a summary and discussion of our findings, implications for practice, and recommendation for future research

ne study will employ purposive sampling as the sampling technique and the researchers will use escriptive survey design. Data collection tools will include questionnaires and Focused group scussions.

CHAPTER TWO:
LITERATURE REVIEW

2.1 Introduction

This chapter covers literature review of previous studies on sustainability of donor/WV funded water projects. Information was obtained from text books, journals and internet. This study appreciates the efforts of other scholars who have already gone through this field. It provides an insight on the subject matter.

2.2 Sustainability of donor funded projects.

A development program is sustainable when it is able to deliver an appropriate level of benefits for an extended period of time after major financial, managerial and technical assistance from an external donor is terminated (US Agency for International Development, 1988).

Sustainability refers to handover. At its simplest level, handover often means simply the transfer of responsibilities of running a project from one organization to another. Sustainability cannot be developed and imposed on a community by someone outside that community. It needs to be developed and implemented by the community itself or it will not work. Bossert (1990) states that although the problem is in its phase out stage, there has been no adoption of any follow up strategy for sustaining the projects. These projects function well as long as they are provided with incentives. Projects are intended to produce benefits which continue at some specified level over time. Post-project assessments of sustainability take place after the project is completed to allow the local institutions time to become self-reliant. Assessments should be carried out several years after the end of the project construction period to allow a valid judgment as to the direction of the benefit stream and an assessment of sustainability. For donor-assisted projects the cessation of direct donor assistance will usually coincide with completion of construction or shortly thereafter. The critical event for evaluating sustainability is the removal of donors from operational and management support roles (Jonathan, 1994).

World Vision is a Christian relief, development and advocacy organization dedicated to tackling the causes of poverty and injustice. It was founded in the 1950s but begun operations in Kenya in the 1970s. Its work in Kenya focuses on helping children, families and their communities reach their full potential. It does this by assisting families and communities to care for orphans and other vulnerable children;

roviding tuition, uniforms, and learning supplies to ensure children's ability to attend school; offering ealth check-ups for boys and girls and helping to establish pharmacies to provide essential medicines at a low cost (Stella, 2008).

2.2.3 Measurement/Indicators of sustainability

Indicators of sustainable community are ways to measure how well a community is meeting the needs and expectations of its present and future members. Communities can use indicators of sustainability in a practical way to determine their direction and measure their progress. Sustainable measures helps to analyze indicators and processes to ensure that they reflect and support the principles of sustainability. It helps move the community or organization toward a more sustainable state. It can be consistently used as a tool for coping with the inevitable pressures of change and development. It helps to integrate indicators with the decision-making processes of the community or organization.

In 1987, the Brundtland Commission Report, "Our Common Future," put forward the general concept of sustainable development that has become most widely accepted. It described sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987).

Sustainability indicators promote sustainability through the actions of well-informed citizens as they participate in our democracy and the economy. Thus, an important role of sustainability indicators is that they can be regularly broadcast to the public along with concise explanations, stories that tell people what has caused the conditions and trends the indicators portray. Consistent, regular reporting of sustainability indicators can contribute to a better, more widely shared understanding of the concept of sustainability and of the general causal relationships that affect its achievement (WCED, 1987).

2.2.4 Factors influencing sustainability

The main factors accounting for the sustainability problem in less developed countries include poor infrastructure, inappropriate donor policies and strategies, poor infrastructure and inadequate human resource capacity. To counter these challenges and to ensure that computer based health information systems deployment in least developed countries (LDCs) is sustainable, it is proposed that the activities involved in the implementation of these systems be incorporated into organizational routines. This will ensure and secure the needed resources as well as the relevant support from all stakeholders of the system; on a continuous basis (Abekah and Robert, 1988).

2.5 Factors influencing sustainability of Donor funded projects

Some of the factors identified as influencing sustainability of donor funded projects are Community Capacity Building, Community participation (Planning, Implementation, Monitoring and Evaluation), Collaboration with stakeholders (Bracht and Kingsbury, 1990; Flynn, 1995) According to IFAD (2009) echnologies transferred must be selected on the basis of its appropriateness.

2.2.6 Evaluation of donor funded projects

Evaluation is the process of systematically assessing the design, implementation and impact of programs, policies or projects. The evaluation process employs many of the research methods used in social science research to determine the impact of public programs and policies. Modern evaluation has its roots in the 1960s, when government policy-makers wanted to know the impact of new public programs. Evaluation can help program managers determine the efficacy of a program and how well it has been implemented. In addition, evaluation can produce data or results that can help promote a program, its services and identify areas where delivery of services can be improved and made more efficient.

2.3 Empirical Review

Sustainability of donor funded projects has been a challenge. However, there are instances where agencies have managed to adopt sustainable initiatives and have proved to be effective. Working through partnerships and building capacity were viewed as central strategies to achieve sustainable health results. Three primary types of partners are identified: Ministry of Health structures, local non-governmental organizations and communities (including community-based organizations or CBOs). Partnership with Ministry of Health structures such as health districts emerges both from the necessity to overcome the risk of gridlock in project implementation and the opportunity it creates for sustained results (Sarriot *et al.*, 2004).

2.4 Conceptual framework

Community involvement, efficiency and relevance of WV water funded projects have a direct influence on ownership and sustainability.

Independent Variables **Dependent Variable**

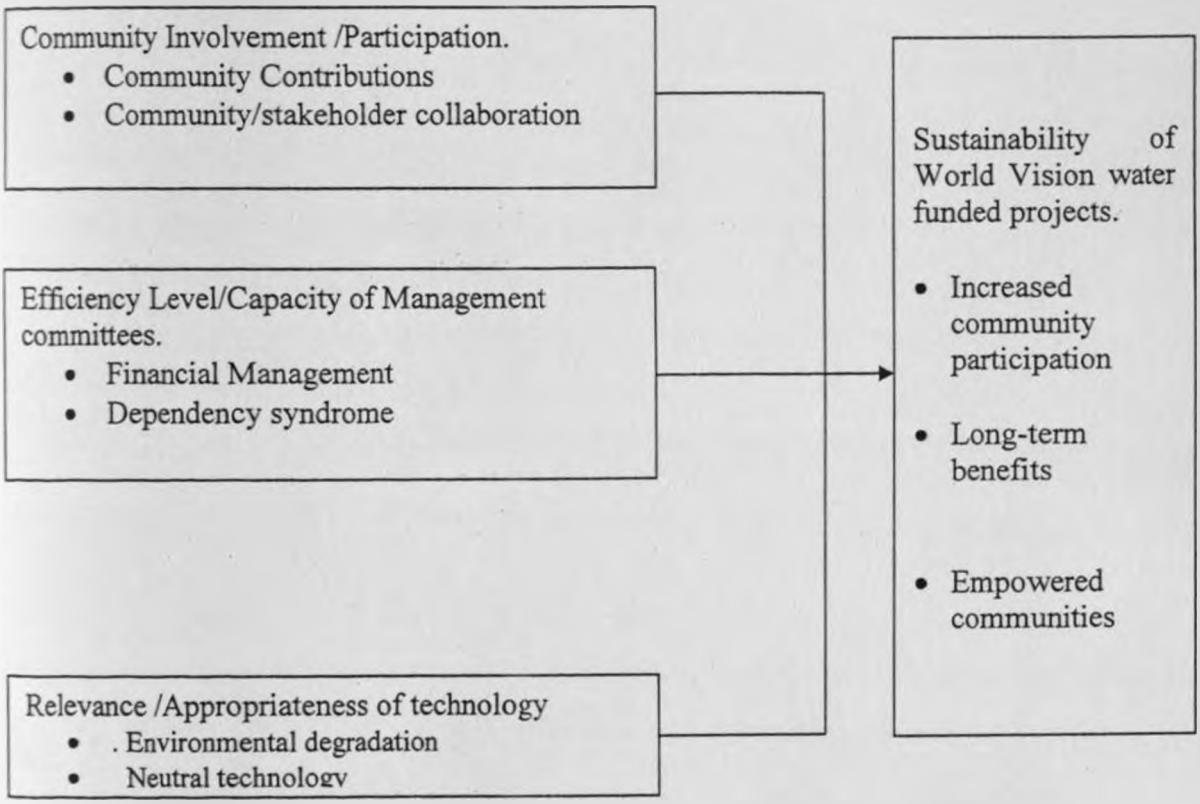

Figure 1. Conceptual framework.

2.5 Knowledge gap.

udies have been undertaken previously relating to sustainability of donor funded projects which have dressed financial and institutional sustainability. This research study will provide further insights on valuation of sustainability of WV funded water projects and point out where organizations fail in ddressing sustainability. Most organizations aim at sustaining their projects and have sustainability rategies but this does not achieve intended outcome. This depicts that there is a missing link that needs o be assessed and addressed to enhance sustainability.

etermining Sample Size and Sampling Procedures

20 out of the 25 Water projects constituting 60 respondents were drawn from the target population rm the required sample size because of the availability of the respondents and also given that some ı were highly mobile.

se respondents were the various executive management committee members who are assigned to see operations at the water projects. They are charged with the responsibility of strategic lementation of the WV funded water projects and were expected to have clear understanding of how ainability is being addressed in the respective projects.

research employed purposive sampling which is a non-probability sampling technique. In this ıple method, the researcher purposely targets a group of people believed to be reliable for the study onald and Delno, 2006). In WV funded water projects, there are projects that are at the initial stages assessment and design phase which have not fully embarked on implementation. Such projects will be targeted thus necessitating the need for purposive sampling. It is on this basis that specific ojects that have already started implementation were targeted. In this case, executive water ınagement committees at the projects were the main respondents.

5 Data Collection Instrument.

his research used questionnaires as the instrument of data collection. These were used to gather both ualitative and quantitative data. The respondents filled in the questionnaires and the researcher ollected the forms after they were duly completed.

Structured questionnaires were used and confidentiality observed. The use of questionnaires made the process less costly and free from interviewer bias. In addition, large samples were reached conveniently and the respondents had adequate time to give well thought out answers.

3.1 Piloting

In order to ensure effectiveness of the questionnaire, a pre-test was carried out. This was done on small representative samples (10 respondents) from Kirindon water projects that were not to be included in the actual study, in order to ensure that the questions are clear and collects the intended information. That is, the Pilot study was done to ensure that the instruments were able to collect the data as expected. The pilot study also informed the need for modification or adjustments to the instruments and also to determine validity of the instrument. This helped to perfect the questionnaire concepts.

3.5.2 Validity and reliability of the instrument

Donald and Delno (2006), defines validity as a measure of how well a test measures what it was supposed to measure. Content validity was considered during the development and use of the research instruments for this study. As said above, Pretest was carried out to determine validity of the instrument.

Sekaran (1999) describes reliability of an instrument as the extent to which the measure is without bias (error free) and hence offers consistent measurement across time and across various items in the instrument. The reliability of an instrument indicates the stability and consistency with which the instrument measures the concept and helps assess the goodness of a measure. In this study, to ensure reliability of the instruments, pilot study was conducted in Kirindon projects not targeted but with similar characteristics. For reliability of the questionnaires designed to collect data for this study, split-half technique was used and correlation done using Spearman-Brown prophecy formula. In this study, the technique resulted in a correlation coefficient of 0.873 which was way above the desired reliability coefficient of 0.7 hence the instruments proved reliable for the study.

3.6 Types of Data to be collected

The study utilized both qualitative and quantitative data collection techniques. Quantitative data was collected through questionnaires which provided information which was easy to analyze statistically and was fairly reliable. Qualitative data was collected through questionnaires as well to provide a more in depth and rich description of the subject under study.

ary data is information gathered directly from respondents. This was gathered mainly through stionnaires while secondary data was obtained from already existing WV documents.

Data Analysis

ta was coded, frequencies run and then analyzed using SPSS version 11.0 statistical package. Data as analyzed using both qualitative and quantitative techniques. Descriptive statistics were used to escribe basic characteristics and summarize the data in a straight forward and understandable manner. he results were presented in tables.

.8 Ethical Considerations

A letter from the University of Nairobi and a research permit was sought before actual data collection in Transmara Districts. Appointments with key respondents were made before the questionnaires were administered. During questionnaire administration, the respondents were reminded that confidentiality was assured and purpose of the research clearly spelt out.

.9 Operational definition of Variables

he table below shows the operationalisation of Variables

able 3.1 Operationalisation of Variables

Objective	Variable	indicator	Measurement	Tools of analysis	Types of analysis
To establish the influence of community involvement on sustainability of WV funded water projects	Community participation	Community Contributions	ordinal	Mode Mean	Descriptive statistics
To examine the influence of efficiency of sustainability of WV funded water projects	Efficiency/ Capacity of Management committees.	Proper Management Dependency syndrome	ordinal	Mode Mean	Descriptive statistics
To assess the influence of relevance/or appropriateness of technology on sustainability of WV funded water projects.	Relevance /Appropriateness of technology	Neutral technology and environmental degradation	Ratio	Mode Mean	Descriptive statistics

CHAPTER FOUR:

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

.1 Introduction

This chapter presents the results from the data analysis. The data was collected by use of questionnaires which contained both open and closed ended questions and were analyzed using descriptive statistics and then presented in tables.

The main objective of the study was to determine factors influencing sustainability of World Vision Funded Water Projects in Transmara West and East Districts, both in Narok County, Kenya.

4.2 Summary of the response rate and Demographic information of the respondents

The study targeted a sample size of 60 respondents and distributed questionnaires to all of them. 48 out of the 60 questionnaires were returned with those not returned attributed to misplacement and damage. This was a return rate of 80% which was deemed as a good response rate amenable for descriptive and inferential analysis. The questionnaires were also returned correctly scored.

4.2.2 Demographics of the respondents

As the table 4.2 shows, majority of the respondents were male (65%) that, constitutes about two thirds of the sample population while 35% were female. This comparison showed that gender was significant to the study as it contributed to different perceptions of the research problem.

Table 4.1: Population distribution in terms of gender

Gender	Frequency	Percentage
Male	31	65
Female	17	35
Total	48	100

ther. most of the respondents 63% were aged between 30 and 49 years as can be deduced from Table Only 1 respondent was above 60 years with those below 30 years of age being only 19%.

ble 4.2 gives the distribution of the ages within the gender groups.

ble 4.2: Distribution of Age within Gender

	Distribution of Age within Gender			
ge Bracket	**Male**		**Female**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
0 – 29	5	16	4	24
0 – 39	11	35	4	24
0 – 49	11	35	4	24
0 – 59	4	14	4	24
0 and above	0	0	4	24
Total	**31**	**100**	**17**	**100**

Education was also significant as the distribution of levels of education comparatively across the gender groups showed large disparities. Most of the respondents 64% had attained only primary level education while only 6% had university education. The summary of education levels of the respondents is given in table 4.3.

Table 4.3: Highest level of education

Highest of Education	Count	Percentage
Primary	30	64
Secondary	8	17
Tertiary (College)	6	13
University	3	6
Total	**47**	**100**

CHAPTER THREE:

METHODOLOGY

Introduction

is chapter outlines the methods that were used to conduct the study. This includes research design, get population, sample and sampling procedures, description of research instruments, validity and liability of instruments, data collection methods, ethical considerations and data analysis procedures as ey were used.

2 Research Design

his research adopted the descriptive survey research design. This is a method of collecting information ; interviewing or administering a questionnaire to a sample of individuals (Orodho, 2003). The major urpose of descriptive research is to provide a description of the state of affairs as it exists. Surveys rovide a quick, inexpensive, efficient and accurate means of assessing information about a population. ccording to Donald and Delno (2006), there are various research designs which include descriptive lesign, experimental design, correlation design and case study. This study aimed at collecting nformation from respondents on their opinions in relation to sustainability of WV water funded projects s they currently exist.

3.3 Target Population

The target population for this research study were the 75 executive committee members who serve in the 25 WV funded water projects in the area. The respondents sampled were the executive water management committee members three per project who are the implementers of the daily managerial activities of the water projects and are conversant with issues relating to sustainability. According to Mugenda and Mugenda (2003), population is the entire group of individuals, events or objects that have a common observable characteristics.

s of the respondents had served not more than three years at the management committee with the ority 38% having served for 3 years. Table 4.4 gives the work experience at the management mittee cross tabulated with the gender to give a more informative picture.

ble 4.4: **Work experience**

ork Experience (Yrs)	Male		Female	
	Frequency	**%**	**Frequency**	**%**
	5	16	6	35
	10	32	6	35
	13	42	5	30
	2	7	0	0
	0	0	0	0
and above	1	3	0	0
otal	**31**	**100**	**17**	**100**

rom the table above more women (70%) than men (48%) had served two years and less while more ıen (74%) than women (65%) had served more than two years. This could be an indicator that the role f women in community projects had been of fairly recent origin in the area and was more instrumental n the management of the projects.

4.3 Findings of the Research Objectives

The three research objectives and there indicators are presented as follows;

4.3.1 The Influence of Community Involvement in on The Sustainability of World Vision funded Water Projects

This study sought to find out how community involvement in the area influenced the sustainability of the projects. This was analyzed using specific questions to the respondents based on the indicators of this objective.

mpact of World Vision funded Water Projects on the communities.

'able 4.5 below shows the responses of the perceived impact of World Vision funded water projects to he communities in the study area.

Table 4.5: Perceived impact of World Vision funded water projects.

Variable	Agree		Disagree	
	Frequency	%	Frequency	%
1. improved living standards for communities and quality of life	47	100	0	0
2.Increased access to health care, education clean water and food security	46	98	1	2
3. Utilization of existing communities capacity towards development	46	98	1	2
4. Increased collective responsibility by communities	42	89	5	11
5.Dependency syndrome by communities	35	74	12	26
6.Empowered communities				
7.Disempowered communities	24	51	23	49

n = 47

Table 4.5 shows that the respondents totally agreed on the positive impacts the World Vision funded water projects had in the area's communities. 66% strongly agreed that the water projects had improved the living standards for communities and their quality of life. This had translated to increased access to healthcare, education and clean portable water and food security in the area of which 98% of the respondents affirmed with only one disagreeing.

The projects had also greatly benefited from the communities resources during the initial stages of development such as labor, space etc according to 46 (98%) of the respondents. However, collective responsibility which is a critical element in project sustainability was rated comparatively lowly with 89% of the respondents agreeing that there was an increased collective responsibility by the communities in sustaining the projects while 11% did not think so.

26% of the respondents disagreed with the notion that the donor funding of the projects had created a dependency syndrome with more men (78%) than women (71%) being of the opinion that the projects had made the communities more dependent on the donors. This shows that women were more inclined to domesticate the projects than men and hence have increased collective responsibility a fact supported by the findings which show that 71% of the women strongly agreed that there was increased collective responsibility than the men at only 50%. This finding was significant as it suggests that more women should be involved in the development and management of the water projects.

Nearly all the respondents (98%) were in agreement that the projects were indeed empowering the communities, but when asked about disempowerment there was near parity in the responses with 51% agreeing that the projects were actually disempowering the local communities. These findings appear to contradict each other. However, the former show the level of appreciation which is about product utility and convenience while the latter opinion were largely informed by the socio-political dispositions about the communities' involvement in the development and management of the projects.

This is evidenced in the findings by the more number of men (58%) than women (29%) who favored this position.

Communities (as stakeholders) involvement in implementation of world vision funded water projects.

Community involvement as stakeholders in the implementation of water projects is essential in the establishment of the projects and their sustainability. This study sought to assess the level of involvement of the communities in the implementation of these projects. The results are given in the Table 4.6.

Table 4.6: Community Involvement

Variable	Agree		Disagree	
	Frequency	%	Frequency	%
1.Planning of projects	47	98	1	2
2. Implementation of projects	48	100	0	0
3.Monitoring of projects	46	96	2	4
4. Evaluation of projects	43	90	5	10

n = 48

From Table 4.6 it is evident that the communities were more involved in the initial stages of the projects but their involvement waned after the project was completed. This could be due to lack of funding or poor post completion strategy.

Role of the Community towards sustainability of the water projects

The current theme of community development is community involvement in the overall sustainability of the projects. That is using and maintaining the projects objectively and beneficial state long after they were completed and handed over to them. In this study the role of the community in the sustainability of the World Vision funded water projects was assessed and the findings are as given in the Table 4.7.

able 4.7: Role of Community towards Sustainability of WPs.

Role	Frequency	%
Planning and Monitoring	17	35
Management and Maintenance	23	48
Oversight	4	8
Security	4	8
Total	**48**	**100**

n=48

The findings in table 4.7 shows that majority (83%) of the community (stakeholders) participated in the initial stages i.e. planning and monitoring 36% and the management / maintenance (48%) of the projects. This agrees with the earlier findings that the community was mostly involved at the beginning of the project. In terms of security, only 8% of the community was involved. More men 10% than women 6% strongly felt that the community was involved in the protection of the water sources, that is, in the overall security while more women (47%) than men (26%) felt that they were involved in the planning and monitoring of the projects.

Willingness of the community to contribute to the projects

The findings on the attitude towards contribution show that all the respondents unanimously agreed that the communities were willing to contribute to the development of the water projects. This implies that the communities were more inclined to want get involved in the projects in many levels.

3.2 The influence of efficiency of sustainability of WV funded water projects.

ost donor operations

he objective of most donor funded community projects is to establish the project and subsequently and it over to the beneficiary community so as to encourage resource conservation. This study sought o find out the effect on the project after donor withdrawal. The findings are as given in the Table 4.8.

Table 4.8: Effect on projects after donor withdrawal

Response	Count	%
Yes	37	77
No	8	17
Don't Know	3	6
Total	**48**	**100**

It can be deduced from Table 4.8 that most of the project (77%) continued to operate after the donors' withdrawal. This was indicative of fulfilled objective of the projects as envisioned by the donors this could largely be the product of the inherent design characteristics of the projects. This view was strongly expressed by the women (83%) as opposed to the men (76%) and further shows that women were more inclined to follow up on such projects than the men. Hence, more women should be involved at every stage of the project to ensure their sustainability. This would be a salutary proactive measure.

Indicators of Sustainability of WV funded water projects

Indicators of sustainability have been cited as instruments in promoting sustainability through actions of well-informed citizens as they participate in the process of democratization and economy building. These could be easily broadcast to sensitize the community on the benefits of the projects. This study sought to determine whether the community was aware of the indicators of sustainability of WV funded water projects in the area. Table 4.9 presents the findings on this.

Table 4.9: Awareness of Indicators of Sustainability

Gender		Yes	No	Total
Male	Count	26	5	**31**
	Percentage	84	16	**100**
Female	Count	12	5	**17**
	Percentage	71	29	**100**

The table 4.9 shows that more men (84%) than women (71%) were aware of the indicators of sustainable development. However, this did not necessarily mean that they appreciated the developments more than the women and this could be primarily borne out of cultural reasons that consigned the women folk to attend to issues like fetching water as part of their domestic chores.

Measures of Sustainability

Efficiency of the projects could also be assessed using measures of sustainability such as the residual benefits of the projects to the community, community involvement in the implementation, post-donor management and community contribution towards the projects. The results are tabulated in Table 4.10.

ble 4.10: **Measures of Sustainability**

ariable	Agree		Disagree	
	Frequency	%	Frequency	%
Long term benefits o the communities	48	100	0	0
. Community avolvement in mplementation phase	42	88	6	12
.Post donor nanagement	48	100	0	0
4. Community contribution	48	100	0	0

= 48

From Table 4.10, most of the respondents were of the opinion that the projects efficacy should be measured based on their long-term benefits to the communities especially after the withdrawal by the donors. However, some (12%) were not sure about community involvement as a measure of the projects efficiency. This could be informed by the fact that efficiency was a technological function rather than a communal one, hence, all a project needed to have in order for its efficiency to be rated high was its technical capability and the way it was being managed. This could significantly contribute to its long term benefits and sustainability.

Strategies of Enhancing Sustainability of the Water Projects

This was considered as a measure of the capacity of management committees. It focused on the actual plans of action formulated to enhance the efficiency and the sustainability of the water projects. These range from mobilization of communities to the application of appropriate technologies. Their influence measures are as tabulated in Table 4.11 below.

Table 4.11: Strategies of Enhancing Sustainability of the Water Projects

Variable	Agree		Disagree	
	Frequency	%	Frequency	%
1. Effective mobilization of communities	47	98	1	2
2.Collaboration with stakeholders	47	98	1	2
3. Application of appropriate technologies and approaches	48	100	0	0
4Effective planning, monitoring and evaluation	48	100	0	0
5.Sustainable development strategies in place	48	100	0	0
6.Community participation	48	100	0	0

n = 48

From Table 4.11 it appears that all the respondents were in agreement with the strategies in place used to enhance the sustainability of the water projects. However, the scores were dissimilar when analyzed according to gender where for instance men (65%) strongly agreed that there was indeed some strategy to collaborate with stakeholders as opposed to only 30% women who thought so.

The converse was shown when their views were sought concerning community participation in the projects where 64% of the women merely agreed with the question while 70% of the men strongly agreed with it as a viable strategy. Majority of the younger respondents, that is, those aged between 20 –

9 years were not strongly convinced about the viability of these strategies. However, the older eneration seemed to have a more settled strong opinion on their efficacy.

.3.3 The influence of using relevant and appropriate Technology on Sustainability of WV funded vater projects

The relevance or appropriateness of the technology is deemed important for the sustainability of the projects. In essence it signifies the utility of the project to the immediate users, that is, its ability to be mplemented and maintained conveniently and at the same time being highly beneficial to the intended isers. In other words the technology should necessarily meet the demand of the area and be adaptable. To measure this, the study formulated specific questions like those relating to the challenges relating to project sustainability the existence of factors affecting the water projects, and the views on the effect of capacity building to project ownership and sustainability. It also sought to gauge the level of these in the area nominally the Transmara Districts. The findings are as given in the following subsections.

Challenges of Sustainability

This question was an open ended one where the study sought to determine and class from a wide range of responses what were the challenges of sustainability of the water projects. The challenges were classified as; lack of technical capacity and management skills; finance and funding; security and conflict and the challenges of cooperation being brought about by conflict of interest and corruption. The findings on this are as tabulated below in table 4.12

Table 4.12: Challenges of Sustainability

Variable	Male		Female	
	Frequency	%	Frequency	%
1.Technical capacity and management	9	29	5	29
2. Finance and funding	5	16	4	24
3.Security and conflict	7	23	5	29
4. Cooperation and corruption	10	32	3	18

Female n = 17 **Male n = 31**

The percentages in the above table are based on comparison within the aggregate scores within the gender groups. According to the males, the most common challenge was cooperation which was mainly brought about by conflict of interest and corruption. To the females security and conflict was a major challenge together with technical capacity and management. Overall the most common challenge was technical capacity and management at 29% followed by security and conflict (26%) then cooperation and corruption 25%. Challenges of finance and funding were not as prevalent as the projects were donor funded. However, these challenges were more pronounced after the withdrawal of the donors.

Factors that affect water projects sustainability

A number of factors common in many development projects of this type and scale were assessed for their direction of influence and significance to the sustainability of the WV funded water projects in the area. The findings are as given in Table 4.13

Table 4.13: Factors affecting water projects sustainability

Variable	Agree		Disagree	
	Frequency	%	Frequency	%
1. Lack of capacity building	28	58	20	42
2.Inadequate involvement of community	30	63	18	37
3. Inadequate funds	31	65	17	35
4. Political differences	30	63	18	37
5.Donor expectations	27	56	21	44
6.Dependency of donor funding	28	58	20	42
7. Mismanagement	25	52	23	48
8. Inappropriate technologies approaches	25	52	23	48
9.Failure to adopt strategies	23	48	25	52

n = 48

nadequate funding seemed to be the most prevalent factor affecting the sustainability of the projects according to 65% of the respondents while most of the respondents 52% thought that the sustainable development strategies were being adopted and hence were not necessarily affecting the sustainability of the projects.

Influence of capacity building on ownership and sustainability of the water projects

This has been a recurrent subject of community development and hence, this study linked it with the ownership and sustainability of the projects by the communities.

The findings are presented in the table 4.14.

Table 4.14: Influence of capacity building on ownership and sustainability

Response	Male		Female	
	Count	%	Count	%
Strongly agree	20	65	13	76
Agree	11	35	4	24
Disagree	0	0	0	0
Strongly disagree	0	0	0	0
Total	**31**		**17**	

Female n = 17 **Male n = 31**

Majority of the respondents were of the strong opinion that capacity building enhances the ownership and sustainability of the water projects by the communities. More women 76% than men 65% held this view strongly. This implies that women should be the target for capacity building to strengthen the objectives of the projects. Hence, gender consideration in capacity building is significant for the ownership and sustainability of the water projects.

Level of sustainability for water projects implemented by World Vision in Transmara Districts

There was need to assess the level of sustainability of the water projects from the respondents. This was done to establish their level of judgment on the future of the projects in the area in terms of appreciation and efficacy. The findings are as given in Table 4.15

Table 4.15: Assessment of the level of sustainability of water projects

Response	Male		Female	
	Frequency	%	Frequency	%
Very high	16	33	11	23
High	13	28	5	18
Medium	1	2	1	2
Low	1	2	0	1
Don't Know	0	0	0	0
Total	**31**	**65**	**17**	**48**

Since these responses were measured on a Lickert scale which had a mid-point of 3, the average weight of the scores was 4.48 which was way above the midpoint hence suggesting that the respondents agreed that the levels of sustainability was indeed high. Comparatively, more women 65% favored this opinion which was higher compared to 52% of men who also rated the level of sustainability as high. This shows that indeed the water projects in the area have a future.

CHAPTER FIVE:

SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes, discusses, concludes and makes recommendations on the research findings as carried out in the actual study. It is devoted to the summary of the findings, conclusions and recommendations emanating from the study. The implications are discussed and suggestions made on areas of further study. This research aimed at establishing the factors influencing sustainability of world vision funded water projects in Transmara west and east districts, Narok County, Kenya

This was done in line with the study objectives developed for this purpose which were:

To establish the influence of community involvement on sustainability of WV funded water projects; to examine the influence of efficiency of sustainability of WV funded water projects; and to assess the influence using relevant and appropriate technology on sustainability of WV funded water projects.

5.2 Summary of findings

The major findings of the study are summarized as follows

- The projects had made inroads in the community and had impacts in the areas,
- They had gradually gained community support and involvement at all stages of their development.
- They had registered impressive efficiency reports
- The efficiency in most cases was attributed to inherent design characteristics.
- Management strategies were needed to ensure the projects sustainability
- The environment had not been compromised by the projects which were a good sign that the technologies were indeed appropriate
- The projects still faced challenges of maintenance and support which invariably called for improved capacity for their future handlers

5.3 Discussions on the findings

This section discusses the findings of the study concerning factors that influence sustainability of World Vision funded water projects in Transmara East and West Districts according to the objectives of the study.

According to the findings, most of the respondents 2/3 were male and although to a very great extent compliant with sections of the law, gender was still significant in the study. The findings reveal this when comparative studies on the same issues are done along the gender groupings. The implications are that there should be gender parity and equity in the management of the WV funded water projects. The latter issues of gender equity were demonstrated in the level of education which is critical to the sustainability of the projects. The greater majority 76% of the women had only primary school level of education as opposed to only 56% of the males having the same qualifications of the remainder, only 12% of them had attained level education as compared with 19% of the men who had the same. This, given that the majority of the respondents were between 30 and 49 years of age indicated that there was poor transition from primary school to high school and higher in the area that needed to be addressed.

This could be attributed to cultural and socioeconomic issues where most of the schools going children were compelled to take adult responsibilities early on in life upon reaching teenage like early marriages. Most of the respondents had also served in the management committee for not more than three years implying that the programs in the area were of fairly recent origin.

In the first objective of this study, the impacts of the WV funded water projects were assessed to gauge the level of appreciation of the communities towards the projects. The findings revealed that most respondents appreciated the positive impacts of the projects in the areas. Particularly they had improved the standards of living of the area's residents by increasing access to portable water, food security, education and healthcare.

This is important according to the world health organization which attributes 80% of all illnesses in the world to the use of non-portable and poor quality water. The findings also show that the projects had relied greatly on the communities' resources and capacity to realize these objectives and as such had

on the approval of the communities' majority who thought the projects had empowered them gnificantly.

here were also comparatively low dependency syndromes (Jonathan, 1994), hence, it was possible for ne projects to be evaluated for sustainability. This means the projects had a fair chance of being ustainable to if the communities had their capacity fully developed in every aspect of the project. One f the major impacts of the projects is that they could greatly influence the lifestyle patterns to reduce onflicts, improve nutrition, and improve education in terms of enrolment and dropout rates. They would also impact the health sector reducing the incidences of water borne diseases and sanitation hallenges.

n terms of efficiency, that is, the second objective of this study, the findings revealed that most respondents had observed the continuity of most of the donor funded projects even after withdrawal. This is not necessarily a function of community support alone but could largely depend on the inbuilt design capabilities of the projects which among other things are intended to require low maintenance, user and environmentally friendly and also strategic placement. However, it was also imperative to sensitize the communities on the indicators of the projects sustainability and the management on the efficacy of the strategies involved in ensuring this. The management approved these strategies unanimously although there were variations according to the gender groupings. This underscores the fact that gender parity needs to be considered more to ensure the sustainability of the projects.

In the last objective the views were sought concerning relevance or appropriateness of the technologies on the area. This is a pertinent question in sustainability of projects for it largely determines the feasibility of the project, its accommodation in the area and the impact it is going to have. The technology must therefore be adaptable, to the area's requirements for sustainability. These requirements form the basis for assessing the challenges the technologies faced to ensure sustainability (Bossert, 1990), that is, the ability to meet the needs of the present without compromising the ability of the future generations to meet their own needs (WCED, 1987). The most common challenge was technical capacity and management of the support personnel. This was followed by security issues and conflict

and then cooperation. Finance and funding were the least of the challenges and were rated so due to the availability of funding from the donors, hence, the real challenge was financial management. Some of these challenges are anticipated to lessen as the projects become more sustainable in the future.

5.4 Conclusions

Based on the findings of this study and the literature cited, it is seen that the projects need to be more inclusive in terms of gender to ensure gender parity and equity both in the project implementation and use of the products. This will inevitably increase the levels of sustainability and reduce the level of conflicts. Capacity building is emphasized as a key component in the whole process and should be focused to a larger extent on the females. This may engender innovative solutions to address the sustainability challenges in the figure. Finally, the technologies used must be friendly and economical to encourage better use and longevity.

5.5 Recommendations

Based on the merits of this study, the following recommendations are now put forth for consideration by all the stakeholders in the projects.

- The policies in place governing the operations of the projects need to be appraised in order to enable them to accommodate new developments in the field and, hence, have maximum effect. This will make the environment more enabling for the practitioners in the future.
- The practitioners need to be encouraged to come up with sustainable development initiatives that engender innovations that promote sustainability of the projects in order to achieve the projects objectives and maximum benefits for the local communities in a more economical way.
- The local community needs to be versed with the various indicators of sustainability to encourage proactive conservation of the projects and promote stability in the area.
- New paradigms of community projects' sustainability should be sought to guide the community based projects in the light of emerging developments like those that have significantly enhanced the access to information in the developing world, that is, information technology is fast becoming a project sustainability reality today.

5.6 Suggestions for further study

More Studies should be done in the future in the same area using the following approaches:

1. A cross-cultural research design to assess the cultural factor in the promotion of project sustainability.
2. The role of gender in influencing project sustainability.

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APPENDICES.

Appendix 1: Questionnaire

ASSESSMENT OF SUSTAINABILITY OF WV FUNDED WATER PROJECTS

I am currently pursuing a second degree in PPM at University Of Nairobi. I am conducting research on sustainability of WV funded water projects in Transmara Districts. The information collected will help us gain information on factors affecting sustainability of projects.

Participation in the survey is voluntary and all the information you give will be confidential. The information will be used to prepare general reports, but will not include any specific names.

TO BE FILLED BY EXECUTIVE MANAGEMENT COMMITTEE OF THE WATER PROJECTS.

SECTION A: BACKGROUND INFORMATION

Tick [√] where appropriate

1. Gender 1. Male [ ] 2. Female [ ]

2. Age Group **(years)** 1. (20-29)[ ] 2. (30-39) [ ] 3. (40-49) [ ] 4. (50-59) [ ]

5. Above 60 [ ]

3. Highest level of Education attained

1. Primary [ ] 2. Secondary [ ]

3. Tertiary (college) [ ] 4. University [ ]

4. Number of years you have served at the Management Committee.

1.) 1 year [ ] 2.) 2 years [ ] 3.) 3 years [ ] 4.) 4 years [ ]

5.) 5 years [ ] 6.) 6 years and above [ ]

SECTION B: PROJECT SUSTAINABILITY

5) What are the impacts of WV funded water projects to communities served by World Vision?

Please tick (√) where appropriate) to indicate your opinion regarding each statement.

Rate them on a scale 1-5

	1 Don't know	2 Strongly disagree	3 Disagree	4 Agree	5 Strongly agree
a)Improved living standards for communities and quality of life					
b) Empowered communities					

c) Increased access to health care, education, clean potable water and food security					
d) Dependency syndrome by communities					
e) Increased collective responsibility by communities					
f) Utilization of existing community capacities towards development					
g) Disempowered communities					

Any other.....

.....

6. Communities (Stakeholders) are involved in implementation of WV funded water projects. *(Rate their involvement on a scale of 1 to 5).*

Please tick (√) where appropriate) to indicate your opinion regarding each statement.

	1 Don't know	2 Strongly disagree	3 Disagree	4 Agree	5 Strongly agree
a) Planning of projects					
b) Implementation of projects					
c) Monitoring of projects					
d) Evaluation of projects					

Any other.....

....

7. What is the role of the community towards sustainability of water projects?

.....

.....

.....

8. Are communities willing to contribute in the development of WV funded water projects?

1. Yes [ ] 2.No [ ] 3.Don't know [ ]

If yes, in what ways.....

.....

9. Do you know of any projects which have continued to operate after a donor has pulled out from the area or community?

1. Yes [ ] 2.No [ ] 3.Don't know [ ]

If yes, how have they been sustained? .....

.....

.....

10. Are stakeholders (communities and partners) aware of indicators of sustainability of WV funded water projects in Transmara Districts?

1. Yes [ ] 2.No [ ] 3.Don't know [ ]

If yes, what are these indicators? .....

.....

.....

11. How do you measure sustainability of the water projects?

In your own opinion, rate the following statements on how one can measure project sustainability and can be assured of sustainability.

Please tick (√) where appropriate) to indicate your opinion regarding each statement.

Rate them on a scale 1-5

	1 Don't know	2 Strongly disagree	3 Disagree	4 Agree	5 Strongly agree
a) Communities continue to benefit from the water project presently and in future					
b) Community involvement in all phases of implementation					

c) Proper management of the water projects after WV pulling out					
d) Community contribution towards the water projects					

12. What strategies are in place to enhance sustainability of the water projects?

Please tick (√) where appropriate) to indicate your opinion regarding each statement.

Rate them on a scale 1-5

	1 Don't know	2 Strongly disagree	3 Disagree	4 Agree	5 Strongly agree
a) Effective mobilization of communities					
b) Collaboration with stakeholders					
c) Application of appropriate technologies and approaches					
d) Effective planning, monitoring and evaluation					
e) Sustainable development strategies					

in place					
f) Community participation					

Any other.....

.....

13. What are the challenges relating to sustainability of the water projects?

.....

.....

.....**14. Which factors (both positive and negative) affect water project sustainability?**

Please tick (√) where appropriate) to indicate your opinion regarding each statement.

Rate them on a scale 1-5

	1 Don't know	2 Strongly disagree	3 Disagree	4 Agree	5 Strongly agree
a) Lack of capacity building of communities					
b) Inadequate involvement of community in project planning and implementation					
c) Inadequate funds					

d) Political differences					
e) Donor expectations					
f) Dependency on donor funding by communities					
g) Mismanagement of the project					
h) Inappropriate technologies and approaches					
i) Failure to adopt sustainable development strategies					

Any other.....

15. How would you rate the level of sustainability for water projects implemented by World Vision Kenya in Transmara Districts?

Please tick (√) where appropriate) to indicate your opinion regarding each statement.

Rate them on a scale 1-5

1	2	3	4	5
Don't know	Low	Medium	High	Very high
☐	☐	☐	☐	☐

16. Capacity building for communities enhances ownership and sustainability of the water projects.

Please tick (√) where appropriate) to indicate your opinion regarding each statement.

Rate them on a scale 1-5

1	2	3	4	5
Don't know	Strongly disagree	Disagree	Agree	Strongly agree
☐	☐	☐	☐	☐

17. Give any suggestions that can help World Vision Kenya and other donors to improve sustainability of the water projects being implemented.

.....

.....

.....**Conclusion:** Thank you for taking time to respond and completing this questionnaire.

Be blessed.

Appendix 2: Research Work Plan.

Schedule of activities

		2012						
No	**Activity**	**Jan**	**Feb**	**Mar**	**April**	**May**	**June**	**Sept**
1.	Developing research Topics							
2.	Writing of Research proposal							
3.	Correction of proposal							
4.	Defending of research proposal							
5.	Data collection, analysis and interpretation							
6.	Drafting of the research report							
7.	Presentation of the report, defense and correction.							
8.	Graduation Ceremony							

Appendix 3: Research Budget

The following is a tentative budget for the research.

Item	Description	Estimate Budget
Developing proposal	Printing and photocopying	**1,000/=**
Data collection	Printing and photocopying of questionnaires	**5,000/=**
	Transport costs	**5,000/=**
	Payment of research assistants	**5,000/=**
Data Analysis	Data analysis, presentation and interpretation	**3,000/=**
Finalize on Report	Printing of final draft report	**4,000/=**
	Binding final report	
TOTAL		**23,000/=**

Appendix 4: List of WV funded water projects in Kirindon.

ITEM	WATER PROJECT	STATUS/PHASE
	Muyan borehole	Complete
	Emarti borehole	Complete
	Kirok borehole	Complete
	Kipsirat borehole	Complete
	Naisukut borehole	Complete
	Olonkolin borehole	Design
	Embolioi borehole	Complete
	Emurua dikirr pipeline	Implementation
	Kurito water pan	Complete
	Tumpelian water pan	Complete
	Osero water pan	Complete
	Kisingir water pan	Complete
	Natomie kewan water pan	Complete
	Pusanki water pan	Complete
	Isekenge water pan	Design
	Koisagat water pan	Complete
	Araret water pan	Complete
	Mogondo water pan	Design
	Chemuyan water pan	Complete
	Chilani water pan	Design
	Olkipoyoi water pan	Assessment
	Kamaget sub surface dam	Complete
	Chepkise sub surface dam	Complete
	Sigawa sub surface dam	Complete
	Ororony sub surface dam	Complete

Source: Researcher 2012

Appendix 5: Map of Kirindon IPA Coverage Area