

**CLIMATE CHANGE COMMUNICATION IN ARID AND SEMI-ARID AREAS IN
KENYA: A CASE STUDY OF ARID LANDS INFORMATION NETWORK**

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DECLARATION

This research project is my original work and has not been presented for a degree in this or any other University. No part of this project may be reproduced without prior permission of the author and / or University of Nairobi.

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This research project has been submitted with my approval as University Supervisor.

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Signature Date.....

DEDICATION

The project is dedicated to my mother and father for their support without whose support I would not have come this far. I hope this work serves as an inspiration to you all and my other siblings.

God bless you.

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TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
table of contents	v
List of tables.....	ix
List of figures	x
ABSTRACT.....	xi
ACRONYMS/ABBREVIATIONS.....	xiii
CHAPTER ONE: INTRODUCTION.....	1
1.0 Background to the study.....	1
1.1 Statement of the problem	4
1.2 Objectives of the study.....	4
1.3 Research questions	5
1.4 Assumptions of the study.....	5
1.5 Rationale and justification of the study.....	5
1.6 Significance of the study	6
1.7 Scope and limitations of the study	7
CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK.....	8
2.0 Introduction	8

2.1	Communication strategy	9
2.2	Social marketing.....	10
2.3	Social Mobilization	12
2.4	Media Advocacy	12
2.5	Participatory Approach	13
2.6	Limitation of traditional communication strategies	14
2.7	Climate change adaptation in ASALS	15
2.8	ASALs in Kenya	16
2.9	Climate Characteristics in Kenyan ASALS.....	16
2.10	Climate Change Adaptation	17
2.11	United Nations Framework Convention on Climate Change (UNFCCC).....	20
2.12	An overview of the main adaptation issues according to UNFCCC.....	21
2.12.1	Cancun adaptation framework	21
2.12.2	Nairobi work Programme	22
2.12.3	Implementing adaptation	22
2.12.4	National adaptation Programme for action.....	22
2.12.5	Kenyan Report on adaptation presented to UNFCCC (Oct, 2002).....	23
2.13	Arid Land Information Network (ALIN, NGO) Overview.....	24
2.14	Communication strategy and climate change adaptation for food security.	24
CHAPTER THREE: METHODOLOGY		26

3.0	Introduction	26
3.1	Research Design.....	26
3.2	SAMPLING	27
3.2.1	Target population.....	27
3.2.2	Sampling methods	28
3.2.3	Methods of data collection	29
3.2.4	Techniques of qualitative data collection	29
3.2.5	Method of data analysis	30
CHAPTER FOUR: FINDINGS PRESENTATION AND ANALYSIS		31
4.0	Introduction	31
4.1	Level of Understanding for the Climate Change Phenomenon.....	31
4.2	Households' main livelihoods.....	32
4.3	Perceived levels of impact of climate change on household livelihoods.....	33
4.4	Contributory factors to impact from climate change	34
4.5	Community capacity building training on livelihoods improvement.....	34
4.6	Test of Hypothesis.....	36
4.6.1	Diffusion of Innovations Theory and two step flow theory.....	36
4.6.2	Two-step flow theory.....	37
4.6.3	McGuire's Model of mass communication	38
4.7	Discussion of Findings.....	38

4.8	Integrating effective communication strategy into CCA for food security.....	40
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....		42
5.0	Introduction	42
5.1	Summary	42
5.2	Conclusions	42
5.3	Recommendation.....	43
BIBLIOGRAPHY		45
APPENDICES		49
7.0	The questionnaire	49
7.0.1	CCA Information Baseline Survey Questionnaire	49

LIST OF TABLES

Table 1: Major Livelihoods and their Current Annual Levels of Production.....	37
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LIST OF FIGURES

Figure 1: Households' Level of Awareness and Understanding for Climate Change.....	36
Figure 2: Main Livelihoods for Kyuso and Mumoni Districts.....	37
Figure 3: Level of Impact of Climate Change on Livelihoods.....	38
Figure 4: Proportion of Community Trained in Livelihoods Improvement.....	39

ABSTRACT

The study was based on Arid Lands Information Network (ALIN) communication strategy used in Climate Change Adaptation (CCA) for food security outreach program in Arid and Semi-Arid Land areas (ASAL). Traditional communication approaches like social marketing, media advocacy, and participatory approaches together with policies of organizations like UNFCCC framework were linked to come up with a multidisciplinary and multi-stakeholder action.

Primary and secondary data collection methods, survey, Key informant interview (KII) were applied with ALIN field staff. 20 respondents were visited and interviewed within Kyuso and Mumoni Districts. Non-probability and cluster sampling methods of data collection were used. Data was also collected using qualitative and quantitative methods, Focus group Discussions(FGDs), in-depth interviews, KII , direct desk review, compilation of documents on recent experiences and best practices in information communication and media at ALIN various levels of understanding and knowledge on CCA .

The impact was assessed and rated by identifying livelihoods and the annual level of production. Impact of climate change and its contributory factors by the community and institutions that carry out facilitation on community capacity building, training on livelihoods and adaptation were rated and results analyzed. Test hypothesis based on diffusion of innovation, two step flow theory Mc Guires model of mass communication and their communication aspect of communication strategies was integrated into CCA for food security information dissemination strategies.

The study found that many households had low level of awareness on climate change phenomenon indicating the need for communication and awareness intensification. Adopted

livelihoods were crop and livestock production, casual labour and petty trade and there was very low annual level of production. Perceived levels of impact of climate change on household livelihoods showed that desertification, drought, famine and food security were the highest. School dropout and low yield failure was the lowest. Large proportion of the population had not received crucial information on issues of seed preservation and seed storage. Capacity building and facilitation organizations included NGOs, Government and line ministries, and community based organizations. 6% to 12% of community members were well trained and understood CCA for food security. Effective communication strategy to raise awareness of the necessity to mitigate and adapt to climate change to a bigger percentage of the population of the community. It would provide framework for delivering key messages and approaches.

ACRONYMS/ABBREVIATIONS

ALIN -- Arid Lands Information Network

ASAL – Arid and Semi-Arid Land

AWG-LCA -- Ad-hoc Working Group on Long-Term Cooperative Action

CBOs – Community Based Organisations

CCA – Climate Change Adaptation

CIP -- Climate Impacts Programme

FBOs -- Faith Based Organisations

FGDs – Focal Group Discussions

GCF -- Green Climate Fund

ICT – Information Communication Technology

ITCZ -- Inter-Tropical Convergence Zone

KII -- Key Informant Interview

MDGs -- Millennium Development Goals

NGOs – Non-Governmental Organisations

NAPAs -- National Adaptation Programmes of Action

SBSTA -- Subsidiary Body for Scientific and Technological Advice

SBI -- Subsidiary Body for Implementation

UNCED -- United Nations Conference on Environment and Development

UK – United Kingdom

UNFCCC -- United Nations Framework Convention on Climate Change

UN – United Nations

CHAPTER ONE: INTRODUCTION

1.0 Background to the study

Climate change and variability are having increasingly adverse impacts on agriculture and food security, water resources, ecosystems and unique biodiversity, energy, human health, coastal zones, the economy and physical infrastructure as well as the survival of vulnerable populations in Kenya.

The purpose of this research is to investigate how Arid Lands Information Network is mainstreaming climate change adaptation for food security information and approaches to enable us come up with the best communication strategy.

Associated increased disaster risks are an additional burden to sustainable development and impediment to achieving the Millennium Development Goals (MDGs). Constraints in technological options, limited infrastructure, skills, information and links to markets further heighten vulnerability to climate stresses in communities living in the Arid lands in Kenya.

According to report from United Nations Framework Convention on Climate Change (UNFCCC), Adaptation to the adverse effects of climate change is vital in order to reduce the impacts of climate change that are happening now and increase resilience to future impacts.

The unfolding crisis demands urgent, efficient and coordinated responses and communication strategy. The Climate change adaptation (CCA) challenge requires a widespread mobilization for action individually and collectively and this takes time and resources - the cost of inaction will be too dear to bear and delays may even make it more difficult to tackle.

In spite of the extraordinary increase in climate change information available at the different scales, and outreach, there is still insufficient information on climate change available about the challenges and potential solutions for climate change, and to bring about the changes in attitudes and livelihoods needed to tackle it.

The Government, International NGOs, Local NGOs, Community Based Organizations (CBOs), and Faith Based Organizations (FBOs) need to make justified commitments in terms of mitigation and adaptation and related enabling mechanisms and initiatives i.e. technology transfer, Reducing Emissions from Deforestation and Forest Degradation and capacity building). Which should also include agreeing on the effective way of communicating the CCA technologies to the communities?

Climate phase III of World bank group and climate change report of 2013 found out that developing countries are not yet well adapted to current climate risks: floods, droughts and storm. Yet those risks are becoming harsher as the world warms, climate extremes become more intense, and the oceans rise – the consequences of human-caused greenhouse gas emissions. This research project draws lessons from World Bank Group experience with adaptation to both current levels of climate variability and ongoing climate change. . There is a need for more innovative communication tools and mechanisms within the country not only to enable timely accessing, sharing and utilization of information on climate change, but also to influence behavioural changes consistent with necessary adaptation and mitigation in the context of limited resources.

One of the key gaps identified in the past processes was the lack of readily available data on climate change to provide deeper understanding of the climate change facts and projections its impact on different sectors. Where data was available it was not packaged to best inform decision-makers.

Given the technical nature of the climate it is crucial that CCA messages both for information and action, are communicated effectively and successfully to all members of the community in the arid lands so as to influence and guide the necessary or relevant , actions and solutions for both mitigation and adaptation. Given the government's work in relation to climate change negotiations and the development of the comprehensive framework of climate change programmes, the communication strategy objectives are as follows:

- To equip climate change actors and decision makers engaged at the technical and community level with timely and relevant information they can use in making decisions and choices;
- To promote effective communication and outreach on the implementation of the livelihood strategies for climate change programmes at the community by the relevant stakeholders;

The communication strategy will therefore serve as an essential tool for climate change adaptation actors in focusing communities' attention and efforts and in mobilizing resources, and

financial support as well as enhancing public/civil engagement for the comprehensive response to climate change in arid lands.

The communication strategy will provide a platform and methodologies for enhancing access, development, sharing and utilization of CCA resources including: data, relevant policy and technical documents, and available tools, so that the need for an effective community response and understanding their capacities in responding to climate change are well informed and enhanced.

1.1 Statement of the problem

In the last decade the world has experienced a shift in traditional climates around the globe. There has been an average increase in global warming and shifts in climate patterns. The communities in ASAL areas are the most vulnerable to effects of climate change. Hence to be able to build the required resilience, it's important to come up with an effective communication strategy on climate change adaptation in ASALS.

1.2 Objectives of the study

The study sought to come up with an effective and efficient communication strategy to address and mitigate effects of climate change as well as to suggest climate change adaptation mechanisms. The main objectives of the study were;

- 1) To understand an effective way to promote and propagate knowledge and awareness of CCA in arid lands.

- 2) To come with a method of promoting skills and farming practices of CCA technologies to improve food security.
- 3) To promote effective communication and outreach and implementation of livelihood strategies for climate change programs at the community by relevant stakeholders.

1.3 Research questions

The research will be aiming to answer the following research questions;

- Why is the community knowledge and awareness on CCA in arid lands poor?
- What are the skills and farming practices currently practiced by the communities in the ASAL?
- Why are the existing communication strategies not effective?

1.4 Assumptions of the study

- There has been low awareness creation on climate change among the communities in ASAL.
- There is low empowerment and capacity building of the communities living in ASAL on CCA techniques.
- There's high use of traditional personalities in CCA communication which are characterised by authoritarianism, low self-esteem and resistance to innovation

1.5 Rationale and justification of the study

Discovering the best communication strategy for CCA for food security sets the achievement of MDGs as a policy of Development. It uses the community understanding, engagement,

ownership and practice to support development policy. It invokes the community's accountability in support of development action. It's concerned with both Economic, Social, political and cultural development. Adaptation to climate change in ASALs will reduce the impacts of climate change that are happening now and increase resilience to future impacts.

November 29th 2010 Economist Newspaper announced that representatives of countries from around the world were to gather in Cancún, Mexico, for high-level climate talks. "They proposed that global action was not going to stop climate change, the whole world need to look closer on how to live with it. The poorest countries drew up a wish-list for adaptation funding, drawn up in the UN climate-convention process of which the Copenhagen and Cancún meetings are part. Money and know-how are essential, therefore adaptation must be part of the mainstream of political and economic life, not an eccentric and marginal idea. Adaptation by and for the poor alone is likely to be poor adaptation.

In spite of the extraordinary increase in climate change information and facilitating organisations available at the different scales, and outreach, there is still insufficient information on climate change available. The challenges on climate change adaptation are still there. Effective communication strategy will bring about potential solutions for climate change and changes in attitudes and livelihoods needed to tackle it to the relevant actors.

1.6 Significance of the study

Communication of the main issues which are hindering or supporting CCA has been growing over time and with the recognition that Climate change and variability pose a major threat to the African continent given both is geographical position and the considerably weak adaptive capacity, there is a need to come up with result based communication strategy. Based on this

diagnosis, development communication proposes that changes in ideas could result in transformation of behaviour.

1.7 Scope and limitations of the study

The study will be based on a case study of ALIN to discern the communication strategies used by the organisation to reach the ASALs communities while disseminating CCA information for food security. This will help unfold the best approach and strategies.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.0 Introduction

This chapter is based on literature review of information and communication strategies relevant to CCA for food security, and provide a broad synthesis and summary of the lessons in my analysis, might be usefully learned about what does and does not work in incorporating information and communication strategies in CCA for food security and similar approaches. It draws on an extensive literature review to provide insight into which kind of communication strategies have been effective and under what circumstances to initiatives relevant to CCA for food security.

Communication is the exchange and flow of information and ideas from one person to another; it involves a sender transmitting an idea, information, or feeling to a receiver (U.S. Army, 1983). Effective communication occurs only if the receiver understands the exact information or idea that the sender intended to transmit. Many of the problems that occur in an organization are the either the direct result of people failing to communicate and/or processes, which leads to confusion and can cause good plans to fail.

The document does not aim to present a single frame work for enhancing the use of communication to make CCA more effective. It concludes that the choices around communication focal points and methodologies depend fundamentally on decisions over specific objectives and context, and this will vary substantially from one situation to another. It however proposes a set of overarching objectives that may usefully be employed in development of

specific strategies: contribute to achieving CCA legitimacy and accountability; enhance public understanding of CCA to development objective; and public engagement.

Finally it proposes a set of principles specifically relating to mainstreaming information and communication into CCA for food security. This focus on clarity of objective, defining the role of communication of CCA for food security, in ensuring that this is recognized in CCA harmonization agenda, making the ASAL communities central and understanding specific limitation.

2.1 Communication strategy

The early generation of development communication studies was dominated by modernization theory. This theory suggested that cultural and information deficits lie underneath development problems, and therefore could not be resolved only through economic assistance. Instead, the difficulties in Third World countries were at least partially related to the existence of a traditional culture that inhibited development. Third World countries lacked the necessary culture to move into a modern stage. Culture was viewed as the “bottleneck” that prevented the adoption of modern attitudes and behaviour. McClelland (1961) and Hagen (1962), for example, understood that personalities determined social structure. Traditional personalities, characterized by authoritarianism, low self-esteem, and resistance to innovation, were diametrically different from modern personalities and, consequently, anti-development.

The underlying premise, originated in classic sociological theories, was that there is a necessary fitness between a “modern” culture and economic and political development. The low rate of

agricultural output, the high rate of fertility and mortality, or the low rates of literacy found in the underdeveloped world were explained by the persistence of traditional values and attitudes that prevented modernization. The goal was, therefore, to instil modern values and information through the transfer of media technology and the adoption of innovations and culture originated in the developed world. The Western model of development was upheld as the model to be emulated worldwide.

In the early 1970s, modernization theory was the dominant paradigm of development communication. The climate of enthusiasm and “missionary zeal,” as Wilbur Schramm (1997) described it, that had existed a decade earlier had notably receded but the notion that the diffusion of information and innovations could solve problems of underdevelopment prevailed.

2.2 Social marketing

Social marketing has been one of the approaches that have carried forward the premises of diffusion of innovation and behaviour change models. Since the 1970s, social marketing has been one of the most influential strategies in the field of development communication.

Social marketing consisted of putting into practice standard techniques in commercial marketing to promote pro-social behaviour. From marketing and advertising, it imported theories of consumer behaviour into the development communication. The analysis of consumer behaviour

required to understand the complexities, conflicts and influences that create consumer needs and how needs can be met (Novelli 1990). Influences include environmental, individual, and information processing and decision making. At the core of social marketing theory is the exchange model according to which individuals, groups and organizations exchange resources for perceived benefits of purchasing products. The aim of interventions is to create voluntary exchanges.

Social marketing's focus on behaviour change, understanding of communication as persuasion ("transmission of information"), and top-down approach to instrument change suggested an affinity with modernization and diffusion of innovation theories. Similar to diffusion theory, it conceptually subscribed to a sequential model of behaviour change in which individuals cognitively move from acquisition of knowledge to adjustment of attitudes toward behaviour change. However, it was not a natural extension of studies in development communication.

What social marketing brought was a focus on using marketing techniques such as market segmentation and formative research to maximize the effectiveness of interventions.

Critics have lambasted social marketing for manipulating populations and being solely concerned with goals without regard for means. For much of its concerns about ethics, critics argue, social marketing subscribes to a utilitarian ethical model that prioritizes ends over means. In the name of achieving certain goals, social marketing justifies any methods. Like marketing, social marketing deceives and manipulates people into certain behaviours.

2.3 Social Mobilization

It is the process of bringing together all feasible and practical inter-sectorial social allies to raise people's awareness of and demand for a particular development program, to assist in the delivery of resources and services and to strengthen community participation for sustainability and self-reliance. A successful mobilization must be built on the basis of mutual benefits of partners and a decentralized structure. The more interested the partners are, the more likely that a project of social mobilization can be sustained over time. This approach does not require that partners abandon their own interests and perceptions on a given issue but are willing to coalesce around a certain problem.

Mobilization is a process through which community members become aware of a problem, identify the problem as a high priority for community action, and decide steps to take action (Thompson and Pertschuk 1992). It starts with problem assessment and analysis at the community level and moves to action on chosen courses, involving many strategic allies at all levels in a wide range of support activities. Central to social mobilization interventions is empowerment or the process through which individuals or communities take direct control over their lives and environment (Minkler 1990).

2.4 Media Advocacy

Media advocacy is the strategic use of mass media to advance social or public policy initiatives (Wallack et al 1993). Its goals are to stimulate debate and promote responsible portrayals and coverage of development issues. Advocacy requires the mobilization of resources and groups in support of certain issues and policies to change public opinion and decisions. It consists of the

organization of information for dissemination through various interpersonal and media channels towards gaining political and social acceptance of certain issues. It is not information-centered but aims to incorporate social themes in entertainment content in order to influence public agendas and rejects the idea that the media can be a source of only anti-social messages, and instead, proposes to include socially relevant themes in entertainment.

Because it locates problems in political and social conditions, social advocacy promotes social, rather than individual and behavioural. In summary, advocacy consists of a large number of information activities, such as lobbying with decision makers through personal contacts and direct mail; holding seminars, rallies and news making events; ensuring regular newspaper, magazine, television and radio coverage and obtaining endorsements from known people. The goal of advocacy is to make the innovation a political or national priority that cannot be swept aside with a change in government. In the context of development programs, media advocacy may be carried out by key people in international agencies, as well as special ambassadors, but is gradually taken over by people in national and local leadership positions and the print and electronic media.

2.5 Participatory Approach

This method integrates local spatial knowledge method combined with geographic precision. Participants contribute to the construction of a model of the territory they rely on for their livelihoods and cultural practices. Local “knowledge holders”, including elders, fisher folk, farmers and forest dwellers, men, women, and youth will populate it with recollections from memory. Discussions may focus on changes occurred over time and in some cases attributed to

climate change and the way locals have been coping with seasonality, weather patterns and other changes so far not recorded in human memory. Data are captured using digital photography, digitized and plotted. On completion of the exercise the strategy remains with the community.

The strategy represents a repository of data which can be used again, and again, for planning other key development issues, intergenerational knowledge transfer, communication and advocacy. The strategy should be more easily communicated and integrated. It should be developed on a foundation of local knowledge and understanding.

2.6 Limitation of traditional communication strategies

- Provided views that were individually and psychological biased
- Was not sensitive to the social-cultural environment in which communication was already taking place
- Mainly championed for the trickle-down approach and this was ineffective in championing for change
- Failed to integrate a process which focused on contents and instead employed a process that only emphasised the results of intervention
- Only addressed the behaviour and behavioural change but neglected the cognitive dimension and incorporation of individuals interest
- Viewed communication as a persuasive rather than participatory means through which information sharing is vital to reach a mutual understanding
- Largely associated development to western modernisation thus undermined the cultural development that already existed in underdeveloped societies

- Denied the people their freedom of participating and responsibility much as their problems were being addressed hence paternalistic
- Provide diffusion of media technologies meant that modernisation could be measured in terms of media penetration.

2.7 Climate change adaptation in ASALS

Arid and semi-arid or sub humid zones are characterized by low erratic rainfall of up to 700mm per annum, periodic droughts and different associations of vegetative cover and soils. Inter-annual rainfall varies from 50-100% in the arid zones of the world with averages of up to 350 mm. In the semi-arid zones, inter-annual rainfall varies from 20-50% with averages of up to 700 mm. Regarding livelihoods systems, in general, light pastoral use is possible in arid areas and rain fed agriculture is usually not possible. In the semi-arid areas agricultural harvests are likely to be irregular, although grazing is satisfactory.

The significance in this discussion is the recognition that the majority of the population of arid and semi-arid lands depend on agriculture and pastoralism for subsistence. These zones exhibit ecological constraints which set limits to nomadic pastoralism and settled agriculture. These constraints include;-

- Rainfall patterns that are inherently erratic;
- Rains which fall mostly as heavy showers and are lost to run-off;
- A high rate of potential evapotranspiration further reducing yields;
- Weeds growing more vigorously than cultivated crops and competing for scarce reserves of moisture;

- Low organic matter levels, except for short periods after harvesting or manure applications; and
- Highly variable responses to fertilizer.

Indigenous peoples of these areas have lived within these constraints for centuries. They have existed on the productivity provided locally and have used their knowledge to devise coping and adaptive strategies.

2.8 ASALs in Kenya

Kenya has a total area of approximately 82 400 km², and lies on the eastern coast of Africa with the equator bisecting the country. The altitude varies from sea level to about 5000 meters above sea level in the central highland regions. Lakes occupy about 2% of total area, 18% of the land area is considered high production agricultural land, and arid and semi-arid lands (ASALs) occupy the rest of the country.

Kenya submitted her first National Communication to the UNFCCC in October 2002 at the Eighth Conference of the Parties held in New Delhi, India. The report covered studies carried nationally on greenhouse gases inventory, vulnerability and adaptation to climate change, programmes to address climate change and its adverse impacts including abatement and sink enhancement and building capacity to integrate climate change concerns into planning amongst other issues.

2.9 Climate Characteristics in Kenyan ASALs

Annual rainfall follows a strong bimodal seasonal pattern. Generally, the long rains occur in March - May, while the short rains occur in October – December, but with variations.

Distribution of rainfall is influenced by topography. The country's climate is influenced by its equatorial location, topography, the Indian Ocean, and the Inter-Tropical Convergence Zone (ITCZ). The influence of the ITCZ is modified by the altitudinal differences, giving rise to varied climatic regimes. Rainfall varies from over 2000mm in the humid to less than 300mm annually in the very arid zones. According to UNFCCC Kenyan report of Oct, 2002;

“The drought, which was experienced between October 1998 and May 2001, was so severe that the Government declared it a national disaster on 13th June 2000. The limited availability of pasture caused animals to feed on roots of shrubs to survive and concentrate on small grazing grounds and pasture caused land degradation, increased water and wind erosion at the onset of the rains. Up to 80 percent of livestock died in some arid and semi-arid areas with devastating effects on the pastoral communities. To save the remaining animals, pastoralists took their animals to urban areas and to Mount Kenya where some of them died of pneumonia as well as high altitude tick fever. On the crop sector, many farmers used seed stocks for food, thus reducing the amount available for planting the following season. Crop yields decreased considerably and in several districts, there were no harvests.”

2.10 Climate Change Adaptation

Adaptation to climate change, is defined in a manner similar to the IPCC (2001), as an adjustment in ecological, social or economic systems in response to observed or expected changes in climatic stimuli and their effects and impacts in order to alleviate adverse impacts of change or take advantage of new opportunities. Adaptation can involve both building adaptive capacity thereby increasing the ability of individuals, groups, or organisations to adapt to changes, and implementing adaptation decisions, i.e. transforming that capacity into action. Both

dimensions of adaptation can be implemented in preparation for or in response to impacts generated by a changing climate. Hence, adaptation is a continuous stream of activities, actions, decisions and attitudes that informs decisions about all aspects of life, and that reflects existing social norms and processes. There are many classifications of adaptation options based on their purpose, mode of implementation, or on the institutional form they take. In this paper, to better explain adaptation, we have focussed on the intention of the adaptation and the impact of the adaptation.

Adaptations are not isolated from other decisions, but occur in the context of demographic, cultural and economic change as well as transformations in information technologies, global governance, social conventions and the globalising flows of capital and (to a lesser extent) labour (O'Brien and Leichenko, 2000). It can therefore be difficult to separate climate change adaptation decisions or actions from actions triggered by other social or economic events. Some adaptations can be clearly identified as being triggered by climate change and those adaptations are often purposeful and directed, as can be seen in the UK government's creation of a UK Climate Impacts Programme (CIP) and the widespread implementation of that programme.

Adaptations can also arise as a result of other non-climate-related social or economic changes: a householder deciding to move from an area at increasing risk of flooding to an area at lower risk, for example, may not be primarily motivated by climate change, but rather by other demographic or economic factors. Clearly, attributing adaptations to climate change is not a simple process. Irrespective of motivation for adaptation, both purposeful and unintentional adaptations can generate short-term or long-term benefits. But they may also generate costs when wider issues or

longer timeframes are considered. Adaptations may amplify the impacts of climate change by ineffectual and unsustainable anticipatory action, as can be seen in the changing demand for air conditioning in cars and homes following a series of hot summers in the UK over the past ten years.

Adaptations to non-climate drivers can increase vulnerability to climate change stress. For example, demand for riverside and coastal properties in the UK has increased over the past 30 years as these properties are associated with higher quality of life; hence, they can also command higher prices (Hertin et al., 2003).

More recent awareness of the heightened flood risk associated with living in flood prone areas may change the price signals that currently place a premium on coastal or riverside properties. The success of climate related adaptation actions may therefore be negated by reactive adjustments by economic actors, governments, individuals, and biota that form part of the process of continual adjustment to social and ecological change driven by multiple factors. A further example of this can be seen in the UK construction industry. Instead of incorporating new technology or approaches into new home construction to build more ‘adaptive homes’, i.e. that are better suited to the changing climate, the current bidding processes for housing construction contracts seem to be constraining the capacity of the construction industry. The bidding processes tend to favour lowest cost bidders—which then leads to least cost construction as opposed to most-appropriate construction (Sorrell, 2003).

2.11 United Nations Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC or FCCC) is an international environmental treaty negotiated at the United Nations Conference on Environment and Development (UNCED), informally known as the (Earth Summit, held in Rio de Janeiro from June 3 to 14, 1992.) The objective of the treaty is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Adaptation to the adverse effects of climate change is vital in order to reduce the impacts of climate change that are happening now and increase resilience to future impacts. The UNFCCC highlight the range of issues that are being addressed by Parties under the various Convention bodies on adaptation, including:

The Cancun Adaptation Framework, which resulted from negotiations on enhanced action on adaptation as part of the Bali Action Plan under the Ad-hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA)

- Nairobi work programme on impacts, vulnerability and adaptation to climate change, development and transfer of technologies, research and systematic observation under the Subsidiary Body for Scientific and Technological Advice (SBSTA)
- Issues related to implementing, including national adaptation programmes of action (NAPAs), and supporting adaptation through finance, technology and capacity-building under the Subsidiary Body for Implementation (SBI)

Successful adaptation not only depends on governments but also on the active and sustained engagement of stakeholders (Nairobi work programme), including national, regional, multilateral and international organizations, the public and private sectors (private sector initiative), civil society and other relevant stakeholders.

2.12 An overview of the main adaptation issues according to UNFCCC

2.12.1 Cancun adaptation framework

The Bali action plan adopted at COP 13 in Bali, December 2007, identified adaptation as one of the key building blocks required for a strengthened future response to climate change to enable the full, effective and sustained implementation of the Convention through long-term cooperative action, now, up to and beyond 2012. At the Cancun Climate Change Conference in December 2010, Parties established the Cancun (CAF) with the objective of enhancing action on adaptation, including through international cooperation and coherent consideration of matters relating to adaptation under the Convention. At the Durban Climate Change Conference in November/ December 2011, Parties advanced the implementation of the CAF by agreeing on:

- Modalities, procedures and composition of the Adaptation Committee
- Activities to be undertaken under the work programme on loss and damage
- Modalities and guidelines for the national adaptation plans

Parties in Cancun established the Green Climate Fund (GCF) as another operating entity of the financial mechanism of the Convention under Article 11 besides the GEF and the AFB. Parties further decided that a significant share of new multilateral funding for adaptation should flow through the GCF. In Durban, Parties made the GCF operational by agreeing on its own impacts vulnerability and adaptation to climate change, understanding vulnerability, fostering adaptation.

2.12.2 Nairobi work Programme

The objective of the Nairobi work programme is to help all countries improve their understanding and assessment of the impacts of climate change and to make informed decisions on practical adaptation actions and measures.

2.12.3 Implementing adaptation

Decisions on implementing adaptation include Decision 5/CP.7, 2001, implementation of Article 4.8 and 4.9 of the Convention and Decision 1/CP.10, 2004, the Buenos Aires programme of work on adaptation and response measures, to assist in implementing Article 4 of the

Convention. Responding to a request from Parties, an interface on adaptation funding was developed to assist the implementation of Decision 1/CP.10 and provide information on options available for funding adaptation worldwide.

2.12.4 National adaptation Programme for action

The National Adaptation Programmes of Action (NAPAs) provide an important way to prioritise urgent and immediate adaptation needs for Least Developed Countries. The NAPAs draw on existing information and community-level input.

The challenges of adaptation will be significantly affected by the manner in which climate change effects are experienced. However, there is no denying the need for looking forward and including adaptation measures into rural development planning. The best way to reduce the vulnerability of smallholder farmers is through sustainable development and poverty reduction.

2.12.5 Kenyan Report on adaptation presented to UNFCCC (Oct, 2002)

We know that future effects will include increases in short-term weather extremes. Extreme weather events already severely challenge the ability of farmers to secure their livelihoods. Improved technology transfer such as more reliable long-term weather forecasting will contribute to reducing current vulnerability of poor and food insecure rural households and will be critical to their ability to adapt to future changes.

The potential for autonomous adaptation depends on affordability and availability of such measures, which include changes in crops and crop varieties, improved water management and irrigation systems, and changes in planting schedules and tillage practices. Most of these adaptation opportunities are being applied by farmers where there is access to the right information and tools. However, a large section of the population is constrained by issues such as lack of awareness, poor soil quality, low water availability economic, technological, institutional and even cultural barriers. These sorts of barriers will limit autonomous adjustments.

There is a strong need for support to research and extension services to ensure that adaptation options are developed. Investing in soil health is an important area that requires support for facilitating adaptation to climate change. Soils are one of the primary resources upon which agricultural productivity depends, and it is a key resource that is rapidly degrading in parts of

Kenya. There are a number of technologies available that can be applied to facilitate rehabilitation of degraded soils that will contribute to adaptation to climate change.

2.13 Arid Land Information Network (ALIN, NGO) Overview

Arid Lands Information Network (ALIN) is an International NGO that facilitates information and knowledge exchange to and between extension workers or infomediaries and arid lands communities in Kenya, Uganda and Tanzania. The information exchange activities focus on small-scale sustainable agriculture, climate change adaptation, natural resources management and other livelihood issues.

To increase its reach and effectiveness, ALIN targets infomediaries who work for governments, NGOs, CBOs and faith-based organisations. These are the people who act as a source of information and knowledge for the rest of the community out of duty or social responsibility.

Information is accessed through community-based Maarifa (Knowledge) centres via a range of channels that include: web portals, Web 2.0 applications, mobile phone platforms, workshops, exchange visits and regular publications.

The vision of ALIN is; A knowledge driven society. The mission is to improve the livelihoods of arid lands communities in East Africa through delivery of practical information using modern technologies.

2.14 Communication strategy and climate change adaptation for food security.

Communication and CCA are linked together since they are Compelling issues and therefore require multidisciplinary approaches and multi-stakeholder action in the process of developing the best strategy of communication through social learning for adaptive livelihoods. This entails an increasing demand for information, knowledge, and participation that puts the need for planned communication activities at the centre of development initiatives.

A set of principles specifically relating to mainstreaming information and communication into CCA for food security is required. This focus on clarity of objective, defining the role of communication of CCA for food security, in ensuring that this is recognized in CCA harmonization agenda, making the ASAL communities central and understanding specific limitation using FBOs, CBOs and NGOs like ALIN.

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter deals with Research methodology. It analyses the sampling frame, research design, target population, sample size, sampling design, data collection methods, data analysis and ethical considerations.

3.1 Research Design

A primary and secondary data collection method was employed in this research and it relies on field research. A case study as a qualitative research was employed. A case study is conceptualised as a process which tries to describe and analyse an entity in qualitative, complex and comprehensive terms not in frequently as it unfolds over a period of time. A case study is the examination of an instance in action. Qualitative case studies can be defined as being particularistic, descriptive and heuristic. Particularistic means that the case studies focus on a particular situation, event, program or phenomena.

The case itself it's important for what it reveals about the phenomena and for what it might represent. Case studies concentrate attention and the way particular groups of people confront specific problems, taking a holistic view of the situation (Merriam 1998). The use of survey methods, formal interviews (oral administration of questionnaire and interview schedule) and direct observation was employed in this case study.

The survey is perhaps the most commonly used research method. The method involves careful detailed examination of the perceptions, attitudes, and opinions of the various publics. The information collected can be used for descriptive, explanatory and exploratory purposes. A

survey is used in studies where individuals constitute the main units of analysis. Survey constitute excellent vehicle for measuring attitude, orientations, opinions and behaviour in a population. The technique enables the communication practitioner to know whether the target audiences are receiving and decoding intended messages correctly. The survey has been selected because it will enable the study to find out the individuals opinions, perceptions and behaviour of ALIN stakeholders.

The key informant interview (KII) involves selecting and interviewing leaders and experts who are presumed to be knowledgeable in the field under investigation. The people are called key informants because they are presumed to have more knowledge on the subject than the members of the study population. The interview usually takes the form of an open ended discussion in which the selected informants are encouraged to air their view on the issue under investigation.

KII was selected for this study because it's less structured and would therefore provide deeper insights and assess the phenomena under investigation from different perspective. It was chosen to enable the researcher to get information from the people who were presumed to be either specialists or very knowledgeable of the problem under investigation. Oral one on one unstructured interviews with ALIN managers in various centres and informal conversations with communication department and programme department staff who have/are participated/ing in communication activities was scheduled.

3.2 SAMPLING

3.2.1 Target population

The target population consisted of all stakeholders (NGOs, CBOs, beneficiaries and the public) within the ALIN programme in the selected target areas, government departments and members of development Agencies partnering with ALIN however due to limited funds and time the sample for beneficiaries of ALIN was drawn from ASAL areas. One correspondent was interviewed in each category of NGOs, CBOs, and government departments respectively, while 20 people were interviewed among the communities and the public respectively it required that visits were made to two of the programme areas that have been targeted by ALIN and received support from the organisation. In this case Kyuso and Mumoni were selected because of its ASAL characteristics.

3.2.2 Sampling methods

The study used the non-probability sampling method to a large extend and to a lesser extend a probability sampling method to collect sample. A non- probability sampling technique called purposive sampling was employed to pick respondents for the key informant interviews. John Njue; ALIN Project staff in Kyuso; said that a purposive sampling entails the selection of cases that are presumed to possess the required information with respect to the objective of the study. Respondents are hand-picked and included in the sample because they are informative or they possess required characteristics.

Cluster sampling entails the random selection of an intact group. Each member of such an intact group is included in the sample and becomes a unit of observation. Cluster sampling was chosen because the beneficiaries of ALIN are many and scattered all over Kyuso and Mumoni Districts.

The sample of 20 was drawn from Kyuso and Mumoni Districts. Beneficiaries of the programme interviewed are members of CBOs participating in ALIN funded programmes and include; leaders, parents, women, youth and children. Others are line ministries government officials including the provincial administration and staffs of collaborating groups. Those interviewed were adults aged 18 years and above.

3.2.3 Methods of data collection

3.2.4 Techniques of qualitative data collection

The qualitative information was collected through focus group discussion (FGDs) and in-depth interviews with key informants. Review of relevant literature and personal observations in the selected units/community was used as source of ideas for elaborating on the FGDs and KII findings. The FGDs are administered with community participants benefiting from ALIN interventions.

The KII interview was carried out with the program officers and communication department managers in ALIN and local leaders, religious and opinion leaders. The FGDs and the KII interviews was carried out to gather in-depth information from individuals who are believed to be knowledgeable and could provide the information that supports or substantiates findings obtained through other data collection instruments.

Focus group discussions-groups were put together for a discussion according to their age, occupation, sex and number of years worked on ALINS' work. Group interviews are thought to have the advantage of broadening the range of experiences but at the same time dampening

extreme responses. In large groups, there is always the danger that opinions of the most powerful members of the group might dominate and some people may not like the lack of anonymity. Smaller focus groups may overcome these problems and aid those who lack the confidence to speak at large gatherings (for example women). Smaller groups can in addition be composed of all men, or all women, if this helps people to speak out.

Direct observation-was another method of data collection employed. It involves rather subjective examination of manner of expression and analysis of depth of information at the disposal of those interviewed. Communication tools used by ALIN were also examined. Secondary data entailed library research that is text, journals, newspaper, periodicals, magazines, seminar papers and documentation from ALIN.

3.2.5 Method of data analysis

The analysis and recommendations were based on a desk review and compilation of documents on recent experiences and “best practices” in information communication and media at ALIN.

The findings dual goals are to aid development actors in planning communication and media activities in CCA for food security and to help media and communication actors make sense of sometimes complex and technical nature climate change adaptation for food security initiatives.

Raw information was written down during the interviews or recorded on tape before transcribing it. The raw information was arranged into groups or classes on the basis of common characteristics, themes and classes.

CHAPTER FOUR: FINDINGS PRESENTATION AND ANALYSIS

4.0 Introduction

The chapter will be able to give a presentation on the way in which ALIN followed the right discourse in unveiling the best Communication strategy. The analysis is necessarily partial and largely descriptive in view of the limitations of drawing firm conclusions based on ALIN reports. It presents the level of awareness and understanding for climate change phenomenon. The livelihoods adopted are presented and analysed to present the most adopted livelihood and the percentage of understanding of CCA information and the major impact of climate change on CCA for food security. The proportion of the community trained on livelihood and the highest information type disseminated together with the institutions facilitating capacity building within Kyuso and Mumoni districts is analysed and conclusions drawn according to the findings.

4.1 Level of Understanding for the Climate Change Phenomenon

Members of the sampled households were rated as having various levels of understanding and knowledge on the causes /source and local consequences of climate change. The understanding of climate change and its impacts at district level (with particular attention on food shortages, floods, and droughts) was assessed and rated. Majority of the households were rated as having low or moderate level of awareness for the climate change phenomenon. Few respondents were not aware, while very few were aware (see *Figure 1* below). This implies the need for further exploration of the target communities' knowledge and experiences on climate change and its impact, and intensification of awareness raising and updating the communities on key issues about climate change.

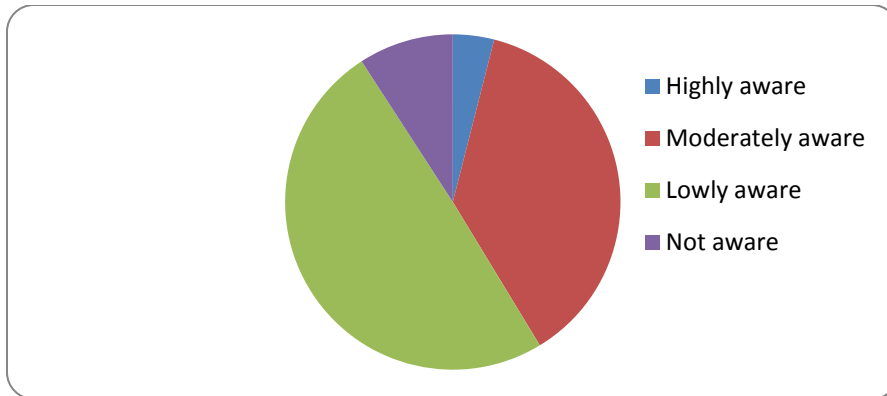


Figure 1: Households' Level of Awareness and Understanding for Climate Change

4.2 Households' main livelihoods

The livelihoods were listed as follows (see *Figure 2* below): 1) crop production; 2) charcoal production; 3) casual labour; 4) livestock production; 5) petty trade; 6) formal employment; 7) growing & selling of vegetables; 8) relief food; 9) renting of houses; 10) support from relatives; 11) monthly allowances; and 12) cash transfer programme.

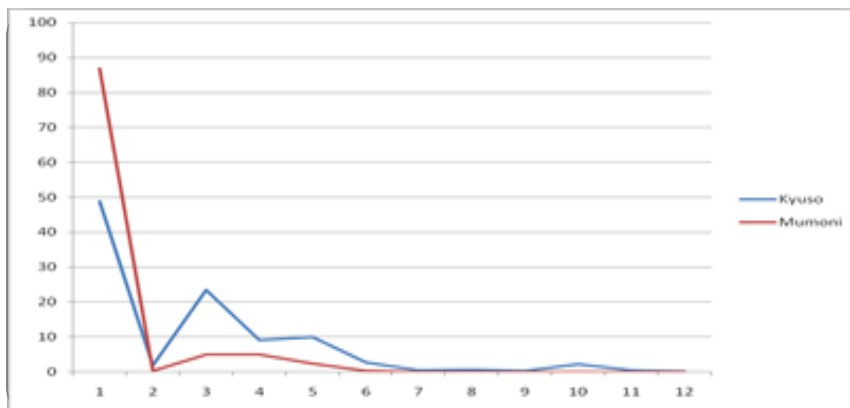


Figure 2: Main Livelihoods for Kyuso and Mumoni Districts

As indicated by the respondents, the most adopted livelihoods in Kyuso District (in order of preference) included: 1) crop production; 2) casual labour 3) petty trade; and 4) livestock

production. Those for Mumoni District included: 1) crop production; 2) casual labour; 3) livestock production; and 4) petty trade.

The widespread livelihoods current annual production levels in both districts were as summarised in *Table 1*: below:

Table 1: Major Livelihoods and their Current Annual Levels of Production

Type of Livelihood	Estimated Annual Production Level
Crop production	1.62 bags/acre
Casual labour	Kes 44,622.54
Petty trade	Kes 89,496.34
Livestock production	Kes 14,000.00

4.3 Perceived levels of impact of climate change on household livelihoods

The major impacts of climate change in Kyuso and Mumoni districts were indicated as follows in order of magnitude (see *Figure 3* below): drought and desertification (19%); famine and food security (19%); human /livestock losses due to disease and poor nutrition (19%); forced change of lifestyles /lowered living standards (11%); school drop-outs (9%); and low yields /crop failure (8%).

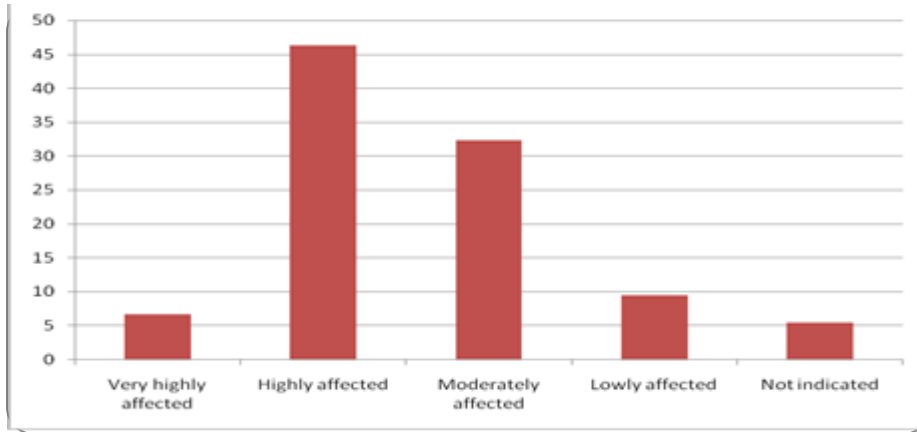


Figure 3: Level of Impact of Climate Change on Livelihoods

4.4 Contributory factors to impact from climate change

The level of adverse impact from climate change effects was rated as mostly between moderate and highly affected. The contributory factors for the upward trend were listed as: high demand and value for marketed products (95.7%), timely and favourable weather conditions (92.6%), growth of urban centres/towns (90.9%), and better terms for casual/formal labour (65.7%). The contributory factors for the static trend: weather conditions (18.8%), terms for casual/formal employment (18.4%), and improved pasture (13.0%). Those for the downward trend included: poor/lack of planting seeds (95.4%), limited income sources (93.3%), inadequate pastures (93.3%), low demand and value for marketed products (91.1%), unfavourable weather conditions (81.1%).

4.5 Community capacity building training on livelihoods improvement

The main training packages received by communities in Kyuso District have included: 1) marketing skills (15.0%); 2) products packaging /value addition (12.8%); 3) better farming methods (9.4%); and 4) integration of markets for new products (7.6%). Those facilitated in Mumoni District have included: 1) better farming methods (12.9%); 2) products packaging /value addition (3.7%); 3) soil /environmental conservation (3.7%); and 4) marketing skills.

Other training packages included produce storage /seed preservation and livestock keeping /animal husbandry. But on the whole, the analysed data indicated that large proportions of the communities (52.0% in Kyuso District and 70.8% in Mumoni District) had not received such Information.

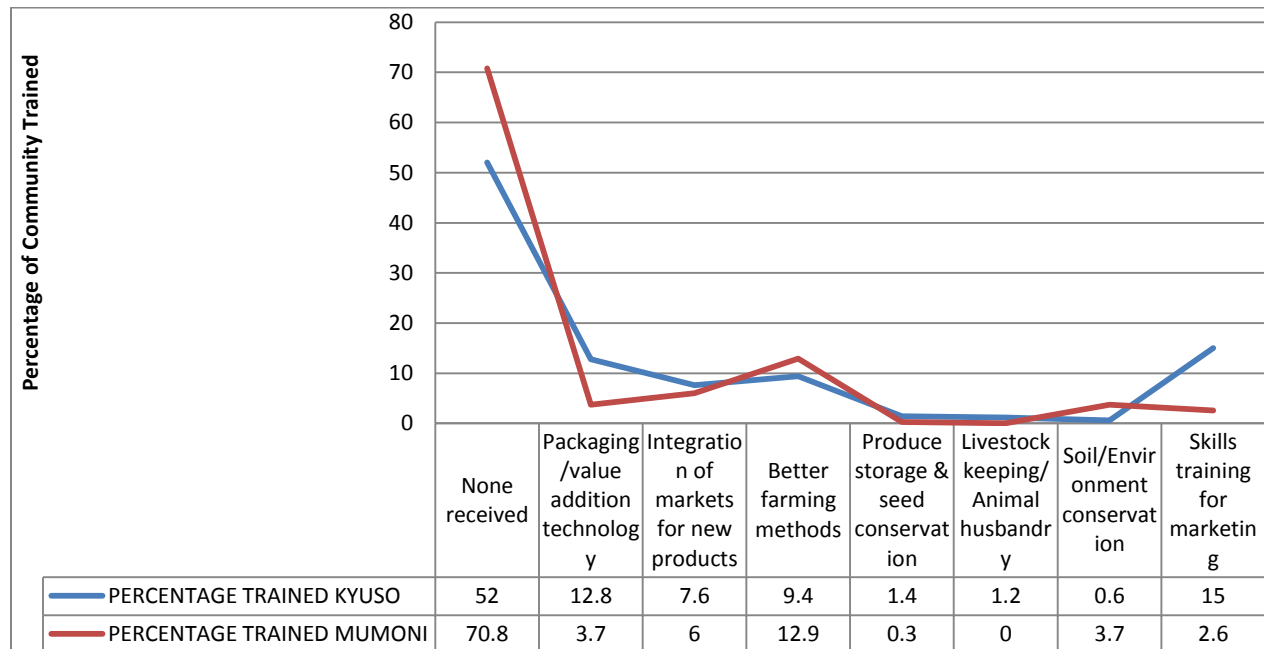


Figure 4: Proportion of Community Trained in Livelihoods Improvement.

The main institutions facilitating capacity building training for farmers/households were listed as: community based organisations (30.0%); government line ministries /departments (29.0%); local NGOs (24.0%); and donors/international NGOs (17.0%).

4.6 Test of Hypothesis

4.6.1 Diffusion of Innovations Theory and two step flow theory

A hypothesis outlining how new technological and other advancements spread throughout societies and cultures, from introduction to wider-adoption. The diffusion of innovations theory seeks to explain how and why new ideas and practices are adopted, with timelines potentially spread out over long periods. Technological innovation is communicated through particular channels, over time, among the members of a social system. The stages through which a technological innovation passes are: knowledge, persuasion, decision, implementation and confirmation.

Diffusion in Innovation Theory is concerned with the manner in which a new technological idea, from creation to use. Technological innovation is communicated through particular channels, over time, among the members of a social system. The stages through which a technological innovation passes are: knowledge, persuasion, decision, implementation and confirmation (reinforcement based on positive outcomes from it).

Early knower's generally are more highly educated, have higher social status and open to media and change Mass media channels is important at the knowledge stage, whereas interpersonal channels are relatively more important at the persuasion stage.

An Innovation decision is where a person rejects or adopts the idea, reach consensus among other members, and reach decision and where a decision is imposed by another person or organization which possesses requisite power, status or technical expertise).

Characteristics of an innovation include; the degree to which it is perceived to be better than what it supersedes, consistency with existing values, past experiences and needs, difficulty of understanding and use, the degree to which it can be experimented with on a limited basis and the visibility of its results.

Different adopter categories are identified as: innovators, early adopters, early majority, late majority, laggards (traditional). Earlier adopting individuals like Opinion leaders, change agents and change aides tend not to be different in age, but to have more years of education, higher social status and upward social mobility. They develop a need for change on the part of the client; to establish an information-exchange relationship; to diagnose the client problems; to create intent to change in the client; to translate this intent into action; to stabilize adoption and prevent discontinuance; and to shift the client from reliance on the change agent to self-reliance.

4.6.2 Two-step flow theory

This is a theory based on a 1940s study on social influence that states that media effects are indirectly established through the personal influence of opinion leaders. The majority of people receive much of their information and are influenced by the media second-hand, through the personal influence of opinion leaders.

These theories are descriptive tool, less strong in their explanatory power, and less useful still in predicting outcomes, and providing guidance as to how to accelerate the rate of adoption.

4.6.3

McGuire's Model of mass communication

William McGuire's model quotes the Source, Message, Channel, and Receiver which he calls "input factors". He adds a Y axis comprised of Attention, Liking, Comprehension, Yielding, Remembering, and Action, which he calls "output factors." In fact his two dimensional matrix is useful for analyzing the effectiveness of persuasive communication both before and after the fact.

4.7 Discussion of Findings

This Climate change adaptation Communication Strategy is meant to fulfil a dual role of raising awareness of the necessity to mitigate and adapt to climate change and of providing information on the trends, the treats and impacts associated with the daily choices and actions of community members in the arid lands. This strategy will provide a framework for delivering key messages on climate change issues to various target audiences in ASALs and beyond.

4.7.1 Some of the activities in the roll out of this strategy will include the following:

Emphasising on the sense of urgency since the issue of climate change and its impacts needs to be communicated to everyone as a matter of urgency. Many communities, particularly those in rural areas, are struggling in the face of increasingly unpredictable weather. Individuals and communities need greater information, resources, and locally relevant practical information to help them adapt and respond to climate change. Effort should be invested in developing appropriate climate change terminology in local African languages so that climate change can be discussed in locally relevant ways that can help to provide an insight into the reality of the changes that most Africans are experiencing.

Link climate change to sustainable development since climate change has traditionally been communicated as a complex, scientific environmental challenge. However, it should be perceived as a deeply socio-economic and environmental issue. Climate change has a crosscutting impact on a wide range of sustainable development dimensions such as water and sanitation, agriculture, forestry, fishing, infrastructure, settlement, tourism, roads and transport, industry, trade, energy and other sectors.

Promote/demonstrate models of best practice as a way of creating buy-in and building coalitions to promote food security. Demonstrating/promoting models of best practice for adaptation or mitigation at community level which can be scaled up and replicated across a range of climate and socio-economic contexts is a key strategy. Learning networks, platforms and other innovative approaches can be used to disseminate information on these models so that such best practices can be adopted by civil society and government institutions across arid lands.

Decision makers are struggling to provide leadership on climate change. They need to know more about climate change in order to communicate confidently on the issue and incorporate mitigation and adaptation strategies into their decision making processes. Local community leaders are least informed on climate change issues yet they are well placed to communicate climate change information and help their communities to respond. Religious and faith leaders could play an important role in informing and catalysing responses to climate change.

Media is needed since many actors in the sector lack adequate knowledge of climate change and tend to consider it either as too scientific or not an audience priority. The capacity of the news and non-news media is important if climate change is to be communicated in locally relevant ways.

Information is vital since the community members need spaces to exchange ideas and information, foster understanding and plan(s) for action. Clear messages should be identified at the national and local levels in order to cut through the climate change ‘noise’ and facilitate public engagement.

Resource mobilization to all levels is required since there’s need for significant, dedicated resources, including major additional funding, assigned to the communication strategy.

4.8 Integrating effective communication strategy into CCA for food security

The above analysis implies that there’s need for further exploration of the target communities’ knowledge and experiences on climate change and its impact. There should be an intensive awareness raising and update of the communities on key issues about climate change.

As indicated by the respondents, the most adopted livelihoods in Kyuso and Mumoni Districts (in order of preference) included: crop production; casual labour; petty trade and livestock production. But generally, the analysed data indicated that large proportions of the communities (52.0% in Kyuso District and 70.8% in Mumoni District) had not adopted Information on storage /seed preservation and livestock keeping /animal husbandry.

The main institutions facilitating capacity building training for farmers/households were listed as: community based organisations (30.0%); government line ministries /departments (29.0%); local NGOs (24.0%); and donors/international NGOs (17.0%). It came out clearly that some areas are receiving more information than others. The institutions facilitating training most of the information are Community Based Organisations than NGOs.

Therefore the information on climate change should be communicated equally to everyone in the community with urgency. The information should be addressed as a socio-economic and environmental issue with leaders is incorporating mitigation and adaptation issues in policy formulation and decision making process and mobilize enough resources for Information Communication and Technology tools.

Many of the community initiatives are reflected at the community local level in the context of improving service delivery; they should all be corralled into single effective communication strategy framework.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter provides the summary of the findings from chapter four, and also it gives the conclusions and recommendations of the study based on the objectives of the study. The study is linked to come up with a most effective and efficient communication strategy to address and mitigate effects of climate change as well as to suggest climate change adaptation mechanisms.

5.1 Summary

This paper provides a conceptual framework to participatory communication applied to climate change adaptation and food security. It demonstrates the need to fully integrate communication for development into community-based adaptation approaches. Integration of Communication Development will provide the most vulnerable groups a chance to generate their own coping strategies due to an equitable access to knowledge and information, and enhanced local decision-making.

Promoting the adoption of innovative Information and Communication Technology (ICT) tools and approaches to help address development challenges and increase resilience to climate change through enhancing the integration of local knowledge in adaptation planning and implementation processes.

5.2 Conclusions

The communication strategy should add authority to local knowledge and enable local stakeholders to more effectively communicate with government agencies, higher authorities and

the community members. It also maps the associated multimedia to become a powerful communication tools.

It provides local stakeholders with the concrete opportunity for making their ‘voice’ heard at national, regional and international levels and to influence policy making and ensure that local knowledge, aspirations and concerns are taken into consideration in the process.

5.3 Recommendation

The effects of climate change are not instantaneous and easily observable by ordinary people and businesses. It is also accepted that reversing climate change will take a long time, even after action is taken. These issues make it difficult to engage people in action to combat climate change.

In initiating the work on Climate change adaptation for food security, it has become necessary to engage other key actors and partners not only in mobilizing mass support but also in producing and delivering strategic information for decision makers when it matters.

Key themes to guide communication will therefore be based on the above while also taking into account the multifaceted and dynamic nature of climate change effects on different sectors such as agriculture and food security, water resources, ecosystems and biodiversity, energy, human health, and infrastructures, the economy and sustainable development, human vulnerability as well as costs of climate change, and especially of inaction, both to support the urgency of the message and to counter complaints.

The following specific themes will provide some initial guidance for effective communications:

Issues surrounding climate change and their impacts/implications for current government policies

Factors affecting the implementation of adaptation and mitigation measures in ASAL communities in Kenya:-

- Elements of communities response to climate change- Roles and responsibilities
- Uncovering the complexity of climate change
- Short specific messages will be developed for each audience as part of the segmented communication plans of action These messages will be:
 - Solution-oriented messages
 - Clear messages that go beyond obvious messages
 - Not prescriptive but present best information, tools, options, while not appearing to have a political agenda

A policy monitoring and evaluation tool should be developed as an appropriate vehicle to ensure periodic feedback from the focal points and other stakeholders including the private sector/business community- the community should also set up an internal evaluation and monitoring committee to report back on the progress based on the matrix.

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APPENDICES

7.0 The questionnaire

7.0.1 CCA Information Baseline Survey Questionnaire

Questionnaire No:

Date:

District:	Division:		
Location:	Sub-location:		
Name and Signature of Enumerator:	Name and Signature of Supervisor:		
Name of Household Head:			
Respondent's Position in the Household <i>(mark as appropriate)</i>	Male Household Head	1	
	Female Spouse	2	
	Female Household Head	3	
	Other (specify)	4	

SECTION A: HOUSEHOLD'S LIVELIHOOD STATUS				
NO.	QUESTIONS	RESPONSE OPTIONS	COD	RESPONS

			E	E
1.	What are your main livelihoods? (<i>Rank in order of importance</i>)	Crop production		
		Livestock production		
		Charcoal production		
		Petty trade		
		Casual labour		
		Other (specify)		
2.	What is the current estimated production level for your main livelihood	No. of bags of charcoal per year		
		Income from petty trade per year (KES)		
		Earnings from casual labour per year (KES)		
		<i>Crop Types</i>	<i>Acreage</i>	<i>Production level</i>
		Maize		
		Beans		
		Green grams		
		Other (specify)		
		<i>Livestock types</i>	<i>Numbers</i>	<i>Production per year</i>
		Cattle		
		Sheep		
		Goats		
		Beekeeping		
Other (specify)				
3.	What is the previous	No. of bags crop (specify) per season		

	estimated production level for your main livelihood	Average litres of milk per day		
		No. of bags of charcoal per year		
		Income from petty trade per year (KES)		
		Earnings from casual labour per year (KES)		
4.	What is the trend in status of your main livelihood? <i>(Tick only one as appropriate)</i>	Upward trend	1	
		Static	2	
		Downward trend	3	
5.	What are the contributory factors to the above trend? <i>(Rank in order of importance)</i>		1	
			2	
			3	
6.	Do you have storage facility for your produce? <i>(Tick as appropriate)</i>	Yes	1	
		No	2	
7.	If 'Yes' to (6) above, what type of storage facility do you have? <i>(Tick as appropriate)</i>	Simple structure (e.g. grass thatched)	1	
		Permanent store (iron sheet roof)	2	
		Other (specify)	3	
8.	What is the main source of energy for the household? <i>(Tick as appropriate)</i>	Firewood	1	
		Charcoal	2	
		Paraffin	3	
		Cooking gas	4	

		Solar energy	5	
		Other (specify)	6	
9.	What are your other possible sources of livelihood? (Rank in order of importance)	Gums and resins industry		
		Honey production and marketing		
		Fodder conservation and marketing		
		Processing /marketing of hides/skins		
		Fish farming		
		Other (specify)		
10.	What are the constraints affecting the adoption of alternative livelihoods in your area? (Rank in order of priority /importance)	Lack/ inadequate relevant technical capacity		
		Lack of seed money /credit financing services		
		Poor infrastructure		
		Lacking or under-developed markets		
		Other (specify)		
11.	Which are the local institutions supporting improvement of your livelihood? (Tick as applies)	Natural resource management committees		
		Service delivery committees (e.g. animal health)		
		Livestock marketing associations		
		Others (specify)		
12.	Which government /NGO institutions have supported improvement of your livelihood? (List as applies)	1)		
		2)		
		3)		
		4)		

13.	What capacity building training on livelihood improvement for CCA strategy have you received? (<i>Tick as applies</i>)	Integration of markets for new products	1	
		Packaging / value addition technology	2	
		Skills training for marketing	3	
		Other (specify)	4	
14	In respect to (13) above, which institution(s) facilitated the capacity building training? (<i>Tick as applies</i>)	Government agency /department	1	
		Donor /International NGO	2	
		Local NGO	3	
		Community based organization (CBO)	4	
		Other (specify)	5	