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**DROUGHT RESILIENCE AND SUSTAINABLE LIVELIHOODS PROGRAMME IN
THE HORN OF AFRICA (DRSLP) KENYA PROJECT**

KILIMANI GAME GALANA IRRIGATION SCHEME IN ISIOLO COUNTY

FINAL ANTHROPOLOGY REPORT

AUGUST, 2015

TABLE OF CONTENTS

TABLE OF CONTENTS	2
LIST OF FIGURES.....	3
LIST OF TABLES	3
LIST OF PHOTOS	3
ACRONYMS	4
1.0 INTRODUCTION	5
1.1 BACKGROUND TO ISIOLO COUNTY	5
1.2 BACKGROUND OF THE SCHEME.....	6
1.2 OBJECTIVES OF THE STUDY	6
1.3 SCOPE AND PURPOSE OF THE STUDY	7
2.0 STUDY FINDINGS	8
2.1 SOCIAL CULTURAL DYNAMICS IN THE SCHEME.....	8
2.1.1 <i>Household Headship</i>	8
2.1.2 <i>Religious Practices</i>	8
2.1.3 <i>Key Rites of Passage</i>	8
2.1.4 <i>Interaction with other Communities</i>	9
2.2 ECONOMIC ORGANISATION	9
2.2.1 <i>Type of Livelihoods in Kilimani Scheme</i>	9
2.2.2 <i>Land as Source of Livelihood</i>	10
2.2.3 <i>Crop Production</i>	11
2.2.4 <i>Livestock Production</i>	12
2.2.5 <i>Water Distribution</i>	12
2.2.6 <i>Average Incomes</i>	13
2.2.7 <i>Labour</i>	14
2.3 THE POLITICAL ECONOMY OF THE SCHEME	15
2.4 SENSITIVE CONFLICT AND CONFLICT MANAGEMENT	15
2.4.1 <i>Land Related Conflicts</i>	15
2.4.2 <i>Water Related Conflicts</i>	15
2.4.3 <i>Conflict Resolution Mechanisms</i>	15
2.5 MORBIDITY AND CULINARY HABITS OF THE PEOPLE.....	16
2.5.1 <i>Nutrition and eating habits</i>	16
2.5.2 <i>Sanitation and Hygiene</i>	16
2.5.3 <i>Morbidity and Causes of Morbidity</i>	17
2.5.4 <i>Health facilities</i>	17
2.6 OWNERSHIP OF RESOURCES	18
2.6.1 <i>Land Ownership</i>	18
2.6.2 <i>Livestock Ownership</i>	18
2.6.3 <i>Issues arising from Ownership of Resources</i>	18
2.7 CAPACITY BUILDING FOR COUNTY STAFF AND COMMUNITY	18
2.7.1 <i>Training of Staff in Relevant Anthropological Issues</i>	18
2.7.2 <i>Training Needs of Farmers in Anthropological Issues</i>	18
3.0 CONCLUSIONS AND RECOMMENDATIONS	19
3.1 CONCLUSION	19
3.1.1 <i>Socio-cultural and social economic dynamics</i>	19
3.1.2 <i>Sources of livelihoods</i>	19
3.1.3 <i>Economic organisation</i>	19
3.1.4 <i>Political organisation</i>	19
3.1.5 <i>Sensitive issues and Conflict</i>	19

3.1.6	<i>Morbidity and Culinary Habits of the People</i>	19
3.1.7	<i>Ownership of resources</i>	19
3.2.8	<i>Capacity building</i>	20
3.2	RECOMMENDATIONS	20
3.2.1	<i>Socio-cultural and social economic dynamics</i>	20
3.2.2	<i>Sources of livelihoods</i>	20
3.2.3	<i>Economic organisation</i>	20
3.2.4	<i>Political organisation</i>	20
3.2.5	<i>Sensitive issues and Conflict</i>	20
3.2.6	<i>Morbidity and Culinary Habits of the People</i>	20
3.2.7	<i>Ownership of resources</i>	20
3.2.8	<i>Capacity Building</i>	21
3.2.8.1	Training of Staff in Relevant Anthropological Issues.....	21
3.2.8.2	Training Needs of Farmers in Anthropological Issues	21
4.0	REFERENCES	22
5.0	ANNEXES	23
	ANNEX 1: LIST OF RESPONDENTS.....	23
	ANNEX 2: LIST OF TRAINED STAFF	24

List of Figures

FIGURE 1:	TYPES OF FAMILIES IN KILIMANI	8
FIGURE 2:	KEY MILESTONES IN ADULT MALES AND FEMALES.....	9
FIGURE 3:	COMMUNITY INTERACTIONS IN KILIMANI.....	9
FIGURE 4:	SOURCES OF LIVELIHOODS	10
FIGURE 5:	SOURCES OF WATER FOR DOMESTIC USE IN WET AND DRY SEASONS.....	12
FIGURE 6:	DIVISION OF LABOUR- CROP PRODUCTION.....	14
FIGURE 7:	DIVISION OF LABOUR- LIVESTOCK PRODUCTION	14
FIGURE 8:	BORANA'S POLITICAL INFLUENCE ON OTHER COMMUNITIES	15
FIGURE 9:	DISPOSAL OF HUMAN WASTE IN KILIMANI	16
FIGURE 10:	COMMON DISEASES IN KILIMANI.....	17
FIGURE 11:	COMMON CAUSES OF HIV.....	17

List of Tables

TABLE 1:	SOURCES OF LIVELIHOODS	10
TABLE 2:	MANAGEMENT COMMITTEE DISTRIBUTION.....	11
TABLE 3:	CROP EARNING PER YEAR IN KILIMANI GALANA	13

List of photos

PHOTO 1:	KALES AND SPRING ONIONS FARMED	11
PHOTO 2:	SALE OF SHOATS IN ISIOLO MARKET	12
PHOTO 3:	TOMATO HARVEST, HIGH INCOME EARNER	13

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
DRSLP	Drought Resilience and Sustainable Livelihoods in the Horn of Africa Project
FAO	Food and Agriculture Organisation
FGDs	Focused Group Discussion
FGM	Female genital mutilation
FMD	Foot and Mouth Disease
HIV	Human Immunodeficiency Virus
ILRI	International Livestock Research Institute
KDHS	Kenya Demographic and Health Survey
KIIs	Key Informants Interviews
KLMC	Kenya Livestock Marketing Council
MOH	Ministry of Health
NGOs	Non-Governmental Organisations
NIB	National Irrigation Board
ORS	Oral Rehydration Solution
PCU	Project Coordinating Unit
WASH	Water, Sanitation and Hygiene

1.0 INTRODUCTION

This is an anthropology report for Kilimani Game Galana Irrigation Scheme in Isiolo County. It is one of the twenty (20) reports that constitute the anthropological and gender study. The study was undertaken in six counties, namely: Baringo, Marsabit, Turkana, Isiolo, West Pokot and Samburu and is supported by the State Department of Agriculture; Ministry of Agriculture, Livestock and Fisheries through the Drought Resilience and Sustainable Livelihoods in the Horn of Africa Project (DRSLP) – Kenya Project. The project implementation period is 2013-2017 and is funded by the African Development Bank. Acacia Consultants Ltd was contracted to undertake the study in December, 2014 through to August, 2015.

1.1 Background to Isiolo County

Isiolo County is located in the Upper Eastern region covering approximately 25,700 square kilometres. The County borders Marsabit County to the north, Wajir and Garissa County to the east, Tana River and Meru County to the south, and Samburu and Laikipia County to the west. The county comprises three Sub-counties, namely; Isiolo, Merti and Garbatulla. It is further sub divided into ten (100 administrative Wards, namely: Ol donyiro, Ngaremara, Isiolo East, Bulapesa, Burat, Kinna, Garbatulla, Sericho, Chari and Cherab. Isiolo's poverty rate stands at 72.6 per cent, while the literacy level stands at 59.8 per cent. The county's population stood at 143,294 as per the 2009 Population Census comprising of 73,694 males and 69,600 females. The population was projected to rise to 159,797 by the end of 2012 and 191,627 by 2017. The population consists largely of Cushitic communities (Oromo-speaking Boran and Sakuye) and Turkana, Samburu, Meru, Somali and other immigrant communities from other parts of the country.

The county is classified into three ecological zones, namely: Semi-Arid, Arid and the very Arid. Semi-Arid zone covers part of Wabera Ward, Bulla Pesa Ward and some parts of Burat Ward in Isiolo North Constituency. It also covers some Southern part of Kinna Ward in Isiolo South Constituency. This zone covers five per cent of the total area of the county and receives rainfall ranging between 400 – 650 mm annually. The relatively high rainfall is due to influence of Mount Kenya and Nyambene Hills in the neighbouring Meru County. The vegetation in this zone is mainly thorny bush with short grass. Arid zone covers Oldo/Nyiro, Ngare Mara and some parts of Burat Wards in Isiolo North Constituency and the whole of Garbatulla Ward and northern part of Kinna Ward in Isiolo South Constituency. The zone covers 30 per cent of the total area of the county. Rainfall received here ranges between 300mm and 350mm annually and supports grassland and few shrubs. Severe arid zone covers Chari, Cherab, parts of Oldo/Nyiro Ward in Isiolo North Constituency and Sericho Ward in Isiolo South Constituency. These areas account for 65 per cent of total area of the county. Rainfall received here ranges between 150 and 250mm annually. The area is barren and very hot and dry for most of the year.

Much of the land (80%) is communally owned and is under the trusteeship of the county government. Government land constitutes 10% of total land and includes land for schools, administration, army barracks, and health facilities. The remaining 10% of the land is under private ownership and was alienated for private investment in housing, industrial and commercial purposes. Over 80 per cent of the land cannot support crop farming and is used as grazing land by the pastoralists. In some wards areas such Kinna, agro-pastoralism is practised with the inhabitants engaging in both livestock and crop farming.

A large portion of the county is arid and cannot support meaningful crop farming. However, maize, beans, cowpeas, onions are produced in the areas bordering Meru and Laikipia Counties. Mangos, pawpaw and other horticultural crops are produced in the existing private small-scale irrigated farm along rivers. With no rain-fed agriculture, the acreage under food crops is small. There are only 1,497 hectares under food crops production. However, the area under food crops is expected to increase to 2,000 hectares with the completion of Rapsu and Malkadaka irrigation schemes.

The main livelihood zones in the county are pastoral (67 per cent) which include: pastoral all-species and pastoral (cattle, sheep and goats), agro-pastoral (26 per cent) and firewood, charcoal (7 per cent) livelihood zones. There are planned massive capital investments under development of the LAPSSSET

Corridor, including an international airport, a resort city and oil storage facilities which are expected to boost rapid population growth in the county. The DRSLP area of focus in Isiolo County is Isiolo and Garba Tulla sub-counties.

1.2 Background of the scheme

The irrigation scheme was located in Kilimani Sub-location, Burat Ward. It was established in 1958 by the defunct Livestock Marketing Division and the then Game Department. In 1961, Isiolo Central Farmers' Co-operative was formed to deal mainly with cotton production and marketing. The co-operative society built an office in Isiolo town and bought a lorry. Cotton was the main crop at the time. The co-operative society collapsed when the cotton industry became uncompetitive in the 1980s.

Over time, a shortage of water was realised due to an increase in the population of the Meru people using the river upstream for furrow irrigation. The increase in population in Isiolo town too also aggravated problems of water supply. The scheme received assistance from the International Labour Organisation and the now concluded Arid Lands Resources Management Project, the predecessor of the National Drought Management Authority, to set up a new intake. It provided pipes worth Kshs. 2 million to draw water into the farmers' fields. When it started, the scheme used furrow irrigation.

The government came in to advise the farmers, as there was wastage of water through seepage in the earth canals, and evaporation. It proposed piping to deal with this. Once this was done, the water resources users association (WRUA) proposed a user fee which many members found unaffordable. This was the beginning of the disunity in the scheme and its personalisation by a few members upstream. There were no women members in the WRUA.

The scheme has 471 members but only 380 are active. Members contribute Ksh.1, 000 for registration fee and Ksh.100 monthly. The funds are used to procure security and manage rationing of water. The group is registered with the Department of Social Services.

Isiolo town has expanded and therefore water from Isiolo River is inadequate. The DRSLP proposes to use Lewa Springs located 7km away from where the water will be piped to supply the scheme. The irrigation command area is estimated to be 800 acres, but the DRSLP will cover only 500 acres. The average plot size per member will be one acre with a range of ¼ acre to 10 acres. Twenty (20) acres will be set aside for pasture and construction of hay shed. Each household will spare part of its allocation for hay production to ensure that the 20 acre allocation is met. The hay will be supplied to the holding grounds. There are plans to subdivide the land to facilitate issuing of title deeds.

The irrigation scheme is divided into five blocks¹ each having a management committee. The chair, secretary and treasurer of each block form the 25-member board of the project (11 female, 14 male). The committee maintains a register of members and ensures equal distribution of water. Each block committee ensures water availability, carries out conflict resolution, coordinates and reviews new projects, allocates plots to households and updates the register of plot owners. Although men and women have access to land allocated by the scheme committee, the fact that registration is by households rather than individual names favours men as household representatives and traditional heads of households. The board advocates and lobbies for the rights of members, protects the land from grabbers and conducts fund raising.

1.2 Objectives of the Study

1. To carry out a detailed study of socio-cultural and socio-economic dynamics of all the communities in the project area including:
 - Detailed information about communities, their way of life and relations;
 - Capture the cultural variations and stratifications;
 - Capture the different religious practices and the impact on the other religious groups;

¹ Kilimani/Game Galana Irrigation Scheme, Committee Meeting Minutes held on April 19, 2014 at LMD Bridge Office, Isiolo.

2. To capture in detail the types and sources of livelihoods and average income of households and disaggregate the information gender-wise, capturing male and female and child headed households;
3. To study and document the various social, economic and political organisations and the power relations among them;
4. To study in detail the most sensitive issues of the different communities' types of conflicts and ethnic differences, their sources, local solving mechanisms of resolving conflicts and communities' coping strategies and their effects on men and women;
5. To identify the common foods and eating habits, common diseases, including HIV/AIDS and nutritional related, their possible causes and any gender differentials;
6. To give in detail the land and livestock ownership systems, sizes, and any related sensitive issues concerning the said resources;
7. To enhance the capacity of staff (both PCU and field) in relevant anthropological issues and data collection. Identify training needs for both staffs and farmers in the areas of anthropology; and
8. To capture historical relationships of the communities' participation with development partners in the context of empowerment and support in addressing food security issues.

1.3 Scope and Purpose of the Study

This report captures information from Kilimani Game Galana Irrigation Scheme in Isiolo County. Going by the objectives of the study, it presents findings on the social cultural dynamics in the scheme (ethnic composition, cultural interactions and resultant behaviour, and rites of passage); economic organisation (land as source of livelihood, agricultural activities- livestock and crop production, water distribution, average incomes, and labour); political economy of the scheme; sensitive land/ water issues and conflict resolution mechanisms; morbidity and culinary habits of the people- nutrition, WASH, morbidity and causes of morbidity, and health facilities. Finally, it provides conclusions and recommendations to enable all groups to participate, contribute and benefit from the project equally.

2.0 STUDY FINDINGS

The study findings were presented in the following sections: 1) social cultural dynamics, 2) economic organisation, 3) the political economy of the scheme, 4) sensitive land, water conflict and conflict management systems, 5) morbidity and culinary habits of the people, 6) ownership of resources, and 7) capacity and the training needs of the farmers and County staff.

A total of 81 (65.8% male and 34.2% female respondents) households which benefited from the scheme were interviewed. The marital status of the respondents were that; 81% were married, 7.6% were single, 6.3% were divorced/ separated and 5.1% were widowed. The beneficiaries recorded to have lived in the scheme for a period of 30 years. Information from the survey was collated with that from six FGDs that were conducted with the members of the scheme as well as the management committee.

2.1 Social Cultural Dynamics in the Scheme

The scheme was located within the environs of Isiolo town and the ethnic composition was largely cosmopolitan. Members of the dominant community in the scheme were the Borana, Sakuye and Turkana. Others are Somali, Meru and Kikuyu communities.

2.1.1 Household Headship

The husband was the head of the household by religion and culture. Majority households were from male headed monogamous marriages (51.9%), followed by male headed polygamous marriages (32.9%), 13.9% of the households were female headed and were attributed to widowhood, divorce, separation and choice. The male headed but female managed households were 1.3%. Although household survey respondents did not mention child headed households, during FGD and KII, it was noted there were orphaned girls taking care of siblings hence the existence of child headed households. **Figure 1** depicts household headship.

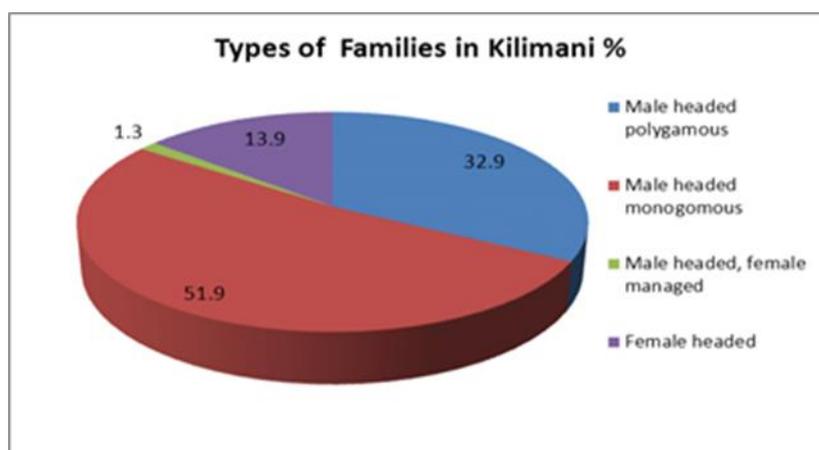


Figure 1: Types of Families in Kilimani

By virtue of household headship, men were the principal decision makers on how family labour was deployed. Due to traditional gender division of labour, roles were clearly understood and undertaken by different members of the household.

2.1.2 Religious Practices

Majority of the people in Kilimani were Christians. The other religion practised in the area was Islam.

2.1.3 Key Rites of Passage

The residents of the area included Borana, Sakuye, Somali, Turkana, Meru and Kikuyu. The marital practices differ per community, religion and tradition. For instance, Islamic adherents were allowed to marry up to a maximum of four wives, while Christians were by doctrine monogamists, if the marriage took place in mainstream churches. However, there were Christians who were married through customary law which allowed polygamy. **Figure 2** shows different rites of passage among the adult male and females of the Borana community who are the dominant in the scheme.

Polygamy was common in the area and was mainly motivated by: demand for labour in families with huge herds of livestock (husbands divided the flocks among the wives and each household caters for its own) and a belief that there were more women in the population. Women, on average, bore 6-10 children. Leviratic unions were allowed traditionally but women were at the time wary of it because of fear of HIV/AIDS. The marital patterns and sizes of households implied that each household had substantial labour from the family members for productive work.

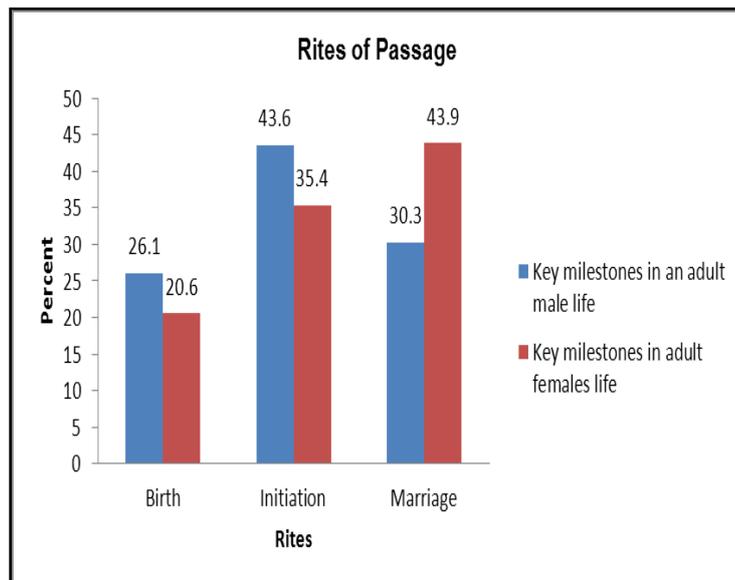


Figure 2: Key Milestones in Adult Males and

2.1.4 Interaction with other Communities

Members of the main communities within the irrigation scheme (Borana, Somali, Meru and Turkana) interacted in many areas including trade, marriage, grazing, sharing water points and participating in rites and rituals as depicted in Figure 3. The Somali and Borana were noted to be trading more often in between themselves as opposed to the larger population. Trade was noted to be high during ploughing, planting, weeding, harvesting and marketing seasons as they exchanged labour as well as knowledge. Other

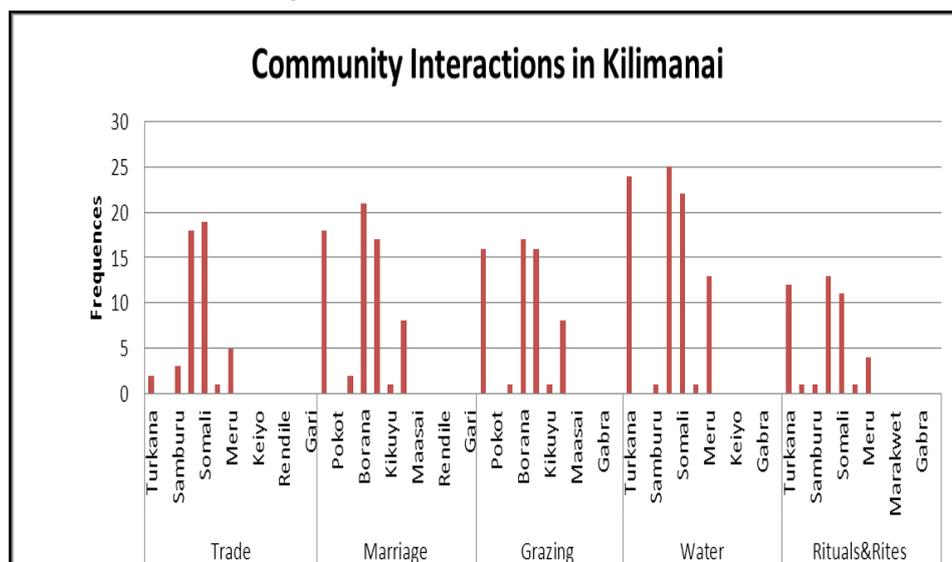


Figure 3: Community Interactions in Kilimanai

areas of interaction were sharing common livestock grazing areas, having a common water source for crop production through irrigation and participating in inter-tribal cultural rites. Areas of concern were confirmed to be on land ownership and water distribution.

Overall, there was low interaction in inter-trade and participation in rituals and rites.

2.2 Economic Organization

This section examines sources of livelihoods including land, crops grown, livestock, water distribution and income and labour distribution.

2.2.1 Type of Livelihoods in Kilimani Scheme

The sources of livelihoods were crop, livestock production, casual labour, charcoal burning, sand harvesting, brick making and regular employment. The Table 1 shows respondents occupation. It indicates that respondents from male headed households had a wider distribution of sources of livelihood than those from female headed households. Specifically, those from female headed

households relied only on off farm casual labour (41.7%) and business (25%) while those from male headed households mainly relied on crop farming (12.1%), livestock (15.2%), off–farm casual labour (15.2%) and regular employment (7.6%).

Table 1: Sources of Livelihoods

	Male headed	Female headed
Crop farmer	12.1	0
Livestock farmer	15.2	0
Regular Employee	7.6	0
Paid domestic worker	1.5	0
Casual labour on-farm	3.0	0
Casual labour off-farm	15.2	41.7
Non paid domestic worker	6.1	0
Business	6.1	25
Not working	33.3	33.3
Total	100	100

The alternate sources of included off-farm casual labour (19%), livestock keeping (13%), crop farming (10%), business (9%), regular employment (6%), non-paid domestic worker (5%), on farm casual (3%), casual labour – off farm (19%) and paid domestic worker at 1%. Surprisingly, there was a big group of people sitting idle (33%) as shown in

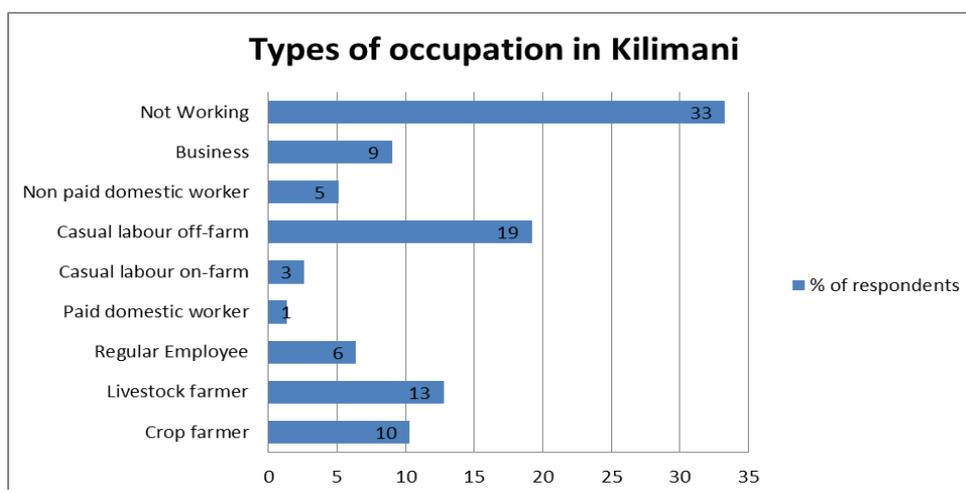


Figure 4: Sources of Livelihoods

Figure 4. Isiolo town and its environs were providing significant casual labour to Kilimani residents including working as guards and porters.

2.2.2 Land as Source of Livelihood

The irrigation potential of the scheme was 800 hectares but only 500 hectares was developed. Land ownership in the irrigation scheme was through individual parcels of land as noted by 100% of households although they did not have titles. Information from the Lands Office confirmed that the land has not been sub-divided and title deeds were yet to be issued.

The average land size in the scheme owned by each household was one acre, with a range of 0.25 to 10 acres. The households did not have freehold titles, as land adjudication had not been undertaken by the Lands ministry. However, the land had been identified as water catchment area by the Ministry of Agriculture. There was need to legalise ownership through sub-division and provision of titles and we noted a lot of correspondence from the management committees chasing for the same from the lands offices.

Each block had a management committee. The chair, secretary and treasurer of each block form the 25-member board of the project (11 female, 14 male). The committee maintained a register of members and ensured equal distribution of water. Each block committee ensured water availability, carried out conflict resolution, coordinated and reviewed new projects and updated the register of plot owners. The board advocated and lobbied for the rights of members, protected the land from grabbers and conducted fundraisings. An FGD with the committee members in the irrigation scheme

informed the research team that the scheme was divided into five blocks which are: Block A with 50 Households (HH); Block B with 60HH; Block C with 180HH Block D with 71HH and Block E with 110HH (Source: KII Interviews at Kilimani). **Table 2** shows the distribution of block officials by gender.

Table 2: Management Committee Distribution

Block	No. of households	Male	Female	Remarks
A	50	2	3	Chairlady, Vice- secretary and treasurer are female.
B	60	3	2	Vice-Secretary and treasurer are female.
C	180	3	2	Vice Chairlady and Vice Secretary
D	71	4	1	Female treasurer.
E	110	2	3	Vice Chairlady, Vice-Secretary and treasurer
Total	471	14	11	

The scheme had 471 members but only 380 were active. It was anticipated that inactive members would re-surface once the scheme was rejuvenated. Members contributed Ksh. 1, 000 as registration fee and Ksh.100 monthly. The funds were used to procure security and manage rationing of water.

2.2.3 Crop Production

Crop farming was minimal because of shortage of water which had persisted for years leading to premature drying up of plants. There seemed to be a divide in the scheme with some households receiving piped water while others did not. Information available indicated that when funds were made available from the irrigation scheme, some blocks decided to distribute it to individual members who diverted it to personal use, while other blocks used the funds collectively for irrigation. For instance, Block A farmers had access to water along the Isiolo River, which they pumped and piped to their farms.

Largely, crop farming was rain-fed in most blocks. In the past, cotton was grown but its production declined and by the end of 1980s there was no more growing of cotton. Kales onions, maize, tomatoes, spinach and potatoes were the main crops grown in the scheme.

Photo 1 depicts a crop Kale and Onion in the farm. During the time of the interviews, trucks could be seen ferrying tomatoes in crates from the irrigated farms. Both men and women were involved. The crop production was lucrative, as these perishable commodities were highly priced and market was sought for as far as Nairobi, Wamba, Meru, Wajir, Mandera, and tomatoes in particular fetch good prices. Farmers incurred minimal transport costs, as buyers collected the crops directly from the farms. Respondents believed that the amount of vegetables produced could feed the planned Isiolo Resort City



Photo 1: Kales and spring onions farmed

Seeds were obtained from agro-vet shops in Isiolo, Meru and Nanyuki. Some were received from government relief supplies of maize, sorghum, green grams, beans and cowpeas. Farmers did not use fertilizers due to the belief that the land was very fertile. All activities were shared by men and women with the help of their children. Those who could afford it also hire farm labour.

Crop Farming Challenges: There were several challenges faced by farmers including; water shortage; crop damage by livestock; damage of furrows by lorries harvesting sand and stones; inadequate operating capital; lack of extension services; losses due to lack of cold storage facilities: minimal value addition; poor maintenance of pipes; crop diseases and pests (e.g. Tuta Absoluta and red spider mites attacking tomato); high level of illiteracy; and lack of technical skills to take advantage of modern technology such as greenhouse production and crop pest and disease management. Members expressed the need for the following to improve their farming: greenhouses; value addition facilities (processing of tomatoes into tomato sauce); and linkage with markets.

2.2.4 Livestock Production

This was the main occupation for both men and women. Livestock kept were cattle and shoats (sheep and goats) and were sold at the Isiolo market and in other markets within the county. Main animals sold were shoats as shown on **Photo 2**. Many women in the market were individual traders who bought from producers and re-sold at a profit in the same or other markets elsewhere e.g. Kipsing, Wamba and Archers Post. Some bought for breeding while some purchased for slaughter in their butcheries in Isiolo town. The traders pooled their resources to hire trucks to ferry the livestock to external markets. The women used the income to sustain their businesses and meet family needs. It was reported that their involvement in livestock trade created family disharmony, as they were away from home for days when they went to external markets. Some husbands bore with it because the incomes sustain their families. Others were uncomfortable. The average cattle prices in Isiolo town market were estimated as follows: bull 3 years (Ksh.30, 000-40,000), castrate (Ksh.15, 000) and immature female (Ksh.15, 000-20,000) (Source: YAM/ACACIA, 2009).



Photo 2: Sale of shoats in Isiolo market

Livestock keepers and traders faced many challenges; these included frequent drought, livestock diseases that resulted in imposition of quarantines that restricted livestock movement and disrupted livestock markets, inadequate water and pasture, particularly during drought, inadequate market outlets, cattle rustling and low livestock prices.

2.2.5 Water Distribution

Figure 5 depicts the domestic water source for the Kilimani Game Galana community. During the dry season, majority (60%) sourced their water from spring/river or pond. Only 23% had access to piped water and about 12% got from boreholes/protected well. The borehole and river water sources produced the resource in almost equal measure in wet season. It was interesting to note that piped water was heavily used in the dry season as opposed to the wet seasons. This was to allow water harvesting as noted by

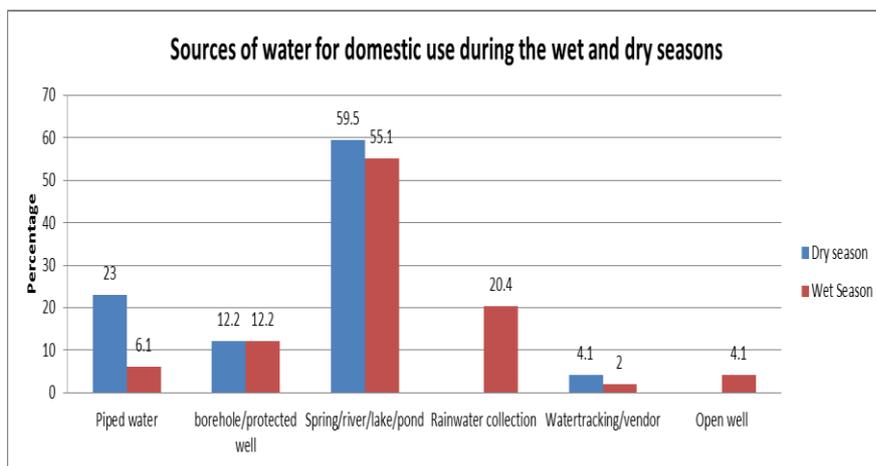


Figure 5: Sources of water for domestic use in wet and dry seasons

20% of households who relied on water collected through this method for domestic use.

There was risk infection by waterborne disease for majority of the community members due to lack of portable water. The communities only spent less than 20 minutes to water source in both seasons hence indicating water is easily available.

2.2.6 Average Incomes

Income levels in the scheme varied depending on the location of household *shamba* (plot) in relation to irrigation canal. Those who were near the canals had highly productive farms and owners received high returns. From FGDs, the estimated monthly income was Ksh. 5,717 with an estimated monthly expenditure of Ksh. 6,366. Although the expenditure was higher than the income, many of the members could not be termed as poor. They had some expendable income obtained from the sale of tomatoes and onions which fetched high prices from the market. In the FGDs, the farmers reported that in a good year such returns were attained as depicted in **Table 3** below.

Table 3: Crop earning per year in Kilimani Galana

Crop	Earning per year
Tomatoes (see photo 3)	300,000/00
Onions	400,000/00
Maize	18,000/00
Beans	18,000/00

These were based on estimates; the lead crops in terms of returns remain onions and tomatoes. Kales were sold in bunches, each at Ksh. 15 or 20 but they still made a quick return to the farmer. Although maize was not very lucrative, the crop was recommended, as it provided fodder for the livestock. However, in a bad year like in 1997 during the El Nino, 2013 and 2014, total crop loss was also recorded.

Most women derived income from casual labour (e.g. laundry for residents of Isiolo town), charcoal burning and sale of firewood. There were some women involved in livestock trade at the Isiolo



Photo 3: Tomato harvest, High income earner

livestock market. There were also women involved in crop farming, especially in horticulture e.g. tomatoes and kales. **Photo 3** depicts tomato crop being harvested for market. Factors that constrained women from earning income were: shortage of water for farming as the piped water was not available to all; inadequate capital for farming; domestic squabbles arising from over-dependence on husbands; and low levels of formal education. Men derived income from sale of livestock (especially goats), crop farming and casual labour in Isiolo town and its environs e.g. working as guards and porters. Factors that constrained men from earning income were: low levels of formal education, scarcity of paid employment and idle engagement in

consumption of miraa which diverted them from productive work and made them neglect their families.

Residents anticipated the following benefits from the proposed irrigation scheme:

- ✚ Diversification of source of income and livelihoods.
- ✚ Creation of employment for men, women and children hence departure from the current menial jobs and motor cycle business sons are engaged in.
- ✚ Improved family nutrition.

- ✚ Improved spousal harmony due to reduced dependence on the husband for all household needs.

2.2.7 Labour

Largely, the Kilimani Game Galana community practised agro-pastoralism. It was established that, as is common in all pastoral areas, labour was controlled by the male adults. In Kilimani Game Galana, male adults controlled 71.4% of the labour and female adults a paltry 6.1%. From the division of labour in livestock, women were likely to be found within the residential vicinity and men were likely to be away from home for most of the day and not readily accessible.

Figure 6 shows how crop labour was shared in a household. Household data indicated that the crop activities were generally shared between men and women.

The decision on what to plant and land preparation was done by both men and women in 55.8% of households and men only in 23.3% cases making it a shared activity. Weeding was done by both women and men in 63% of households, by men alone in 6.5% households making it a fairly shared activity. Harvesting was done by both men and women in 71.3%, a shared activity. In 54.3% of households, men and women marketed crop produce while men did so in 14.3% making also a shared activity.

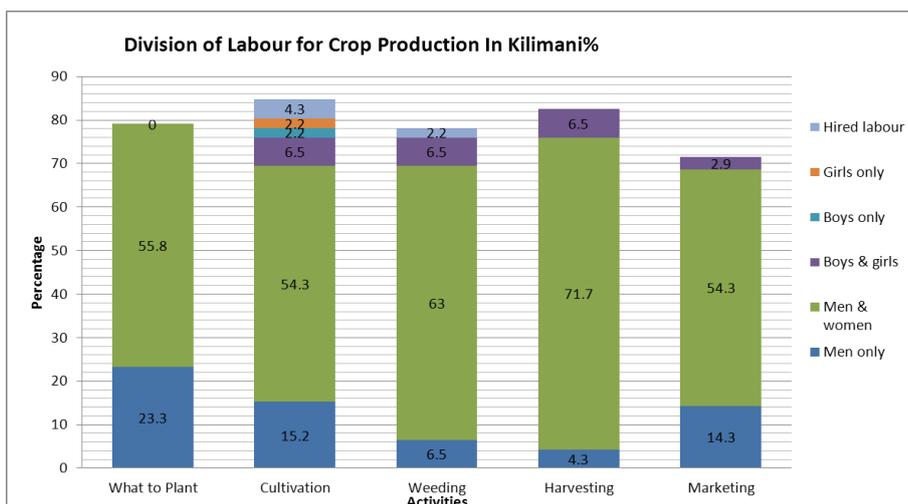


Figure 6: Division of Labour- Crop Production

Livestock keeping was a main livelihood activity and livestock reared were cattle, goats, sheep and camels; with the camel being the most preferred due to resilience to drought challenges. The study established that men focussed on the camel at herding and milking stages with all members of the household herding the other animals but girls and women milking the goats and cattle. **Figure 6** summarises the distribution of labour for livestock based activities as: herding (men only 73.5%, men and women 5.9%, boys only 11.8%, boys and girls 2.9%); watering (women and men 33.9%, men only 27.1%, women and girls 20.3% and boys only 13.6%); milking (men and women 9.1%, men only 72.7%, boys only 6.1% and women only 9.1%) and selling (men only 58.1%, men and women 38.7%, women only 3.2%).

Most of the routine livestock production activities were carried out by men. Women mainly undertook watering, milking and selling of milk. The income from sale of milk and manure was used to meet household needs. Men also undertook activities which were occasional including slaughtering, health care and sale of livestock. However, when an animal was to be sold, men were required to consult with their wives. Women took livestock to the market but were not allowed to negotiate the price, an activity reserved for a male family or clan member. Thus the burden of livestock production was a men's activity

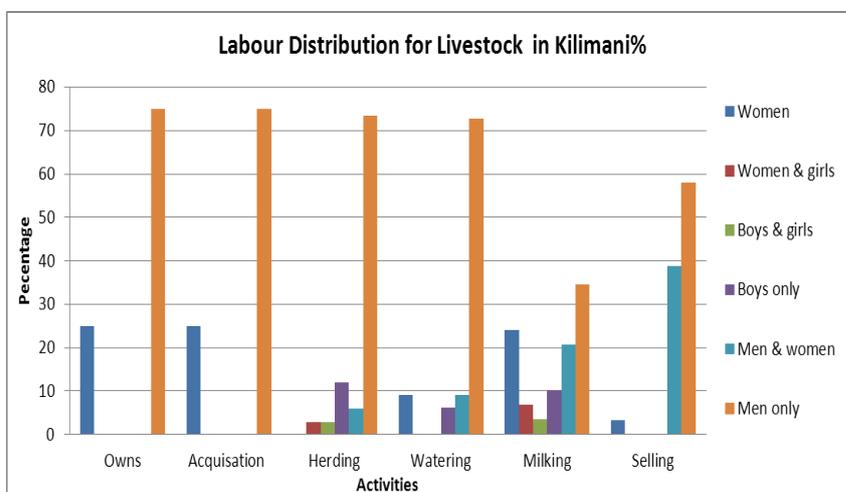


Figure 7: Division of Labour- Livestock Production

The reproductive activities included cooking, fetching water and other household chores. Men took charge of overall family leadership and protection while women were in charge of routine subsistence and care activities in all the communities. However, there were ethnic differences with the Borana, Somali and Turkana having women featuring in shelter construction and fencing which was not the case among the Kikuyu and the Meru.

Males dominated community management activities. The males were responsible for traditional (clan) leadership, religious leadership (both Islam and Christianity), contemporary administration, and political leadership.

2.3 The Political Economy of the Scheme

The day to day running of the scheme is in the hands of a committee. The management committee resolves disputes among the communities residing in the scheme. The Borana were said to exercise their influence mainly through ethnic animosity with other tribes as noted by 47% of households as shown on **Figure 8**. In addition to households' finding, FGD interviews confirmed the same as they dominated on who aired their views during the meeting.

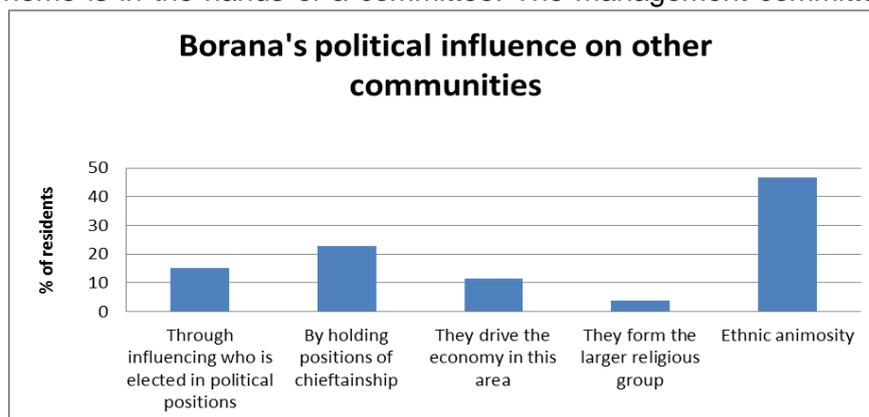


Figure 8: Borana's political influence on other communities

2.4 Sensitive Conflict and Conflict Management

2.4.1 Land Related Conflicts

Over 72% of the communities living around the irrigation scheme and were interviewed for this study agreed that land was a major cause of disputes and conflicts in the areas. Further inquiry revealed that only a small percentage (24.1%) of the people interviewed consented that land disputes were experienced within the irrigation scheme. In open discussions, respondents indicated that the communities were living in harmony, without any major conflicts. However, some respondents individually indicated that non-Borana people were often harassed as outsiders. There had been conflicts between crop farmers and herders when the latter invaded the farms with their livestock and destroyed crops.

2.4.2 Water Related Conflicts

Another major conflict relates to the domination of the piped water by members from upstream blocks and denial of access to the lower stream members. The women indicated that even when they accessed the water from burst pipes, they were doing so at great risk of physical violence by those who claimed to own the pipes. Vehicles passing through the block next to Isiolo River also destroyed some crops.

2.4.3 Conflict Resolution Mechanisms

The conflicts were basically solved by the water committee which brought the parties together to dialogue and determined the wrongdoer and the necessary penalty, usually compensation to the aggrieved party through cash payment. The fine was usually Ksh. 10,000 which is so heavy for most members so it acted as a deterrent. Minor inter-ethnic conflicts were solved by a council of elders of five men drawn from the Borana, Meru, Turkana and Somali.

2.5 Morbidity and Culinary Habits of the People

This section discusses the type foods, its impact on health, water and sanitation in relation to hygiene.

2.5.1 Nutrition and eating habits

Majority (72%) of Kilimani respondent reported average food security. At household level, 28% reported the food security to be poor, while 4% reported they were food secure. The residents considered themselves food secure but the team noted that almost all households covered in the survey had to adjust their food intake in the previous year to ensure that the stocks of food they had lasted them until the next harvest. They reported drought (38%), human disease (28.4%), livestock diseases (8.3%), floods (2.5%) and conflicts/insecurity (723.1%) as the main causes of food insecurity. Coping mechanisms reported at the household level to food insecurity were; to ask relatives for money (14.8%), borrow food from relatives (11.8%), rely on relief food distribution (10.4%), sell livestock (2.2%), consume food on credit from local kiosks (33.3%), reduce number of meals (12.6%), reduce size of meals (10.4%) and reduce food varieties/ eat cheap food (3%).

Given the cosmopolitan nature of the scheme, it was be difficult to identify a rigid category of food considered staple to the community. Overall, the community was sedentary and therefore basically ate what is grown on the farms. As earlier discussed, maize, beans, potatoes, kales, spinach and tomatoes were readily available. Ugali (food from baked maize flour) was the main diet. It was supplemented with foods that were available in various seasons. There was also a readily available supply of fruits; the residents had ample supply of fruits and vegetables to most of the other counties visited. Also, milk and meat were readily consumed from the cattle and goats that the communities reared. It was also noted that the communities in Isiolo consumed a lot of sugar in tea which was not healthy.

It was reported that children in Kilimani started being weaned at an average of 6 months. Children under 5 were observed to be malnourished and displayed marasmus and kwashiorkor conditions largely because of being fed on Ugali. Malnutrition placed children at increased risk of morbidity and mortality and was also shown to be related to impaired mental development. About one-quarter (26 percent) of Kenyan children were stunted, while 8 percent were severely stunted (2014 KDHS)². In Isiolo, 19% of the children were stunted, that was indication of prolonged period of poor nutrition. The MOH and other NGOs intervened by creating public awareness and providing nutritional supplements. Some 84.6% of the households reported to give children supplementary feeding. The reasons given for supplementary feeding include improving their general growth (84.6%) and to prevent disease (15.4%)

2.5.2 Sanitation and Hygiene

Household data confirmed that 62% of respondents had toilets while 38% did not. For those without latrines, majority of the households (61%) used bushes for defecation. Others used a neighbour's latrine (15%), near house 15%, near water source (3%) or open fields (6%) to dispose human waste as depicted in **Figure 9**.

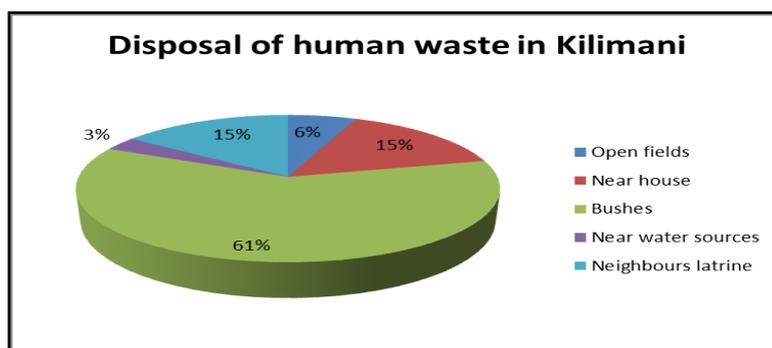


Figure 9: Disposal of human waste in Kilimani

² Anthropometry provides one of the most important indicators of children's nutritional status. The height and weight data were used to compute three summary indices of nutritional status: height-for-age, weight-for-height, and weight-for-age. These three indices were expressed as standardised scores (z-scores) or standard deviation units from the median for the child growth standards recommended by the World Health Organisation. Children who fall more than two standard deviations below the reference median are regarded as undernourished, while those who fall more than three standard deviations below the reference median are considered severely undernourished. Children whose height-for-age is below minus two standard deviations (-2 SD) from the median of the reference population are considered stunted or short for their age. Stunting is the result of failure to receive adequate nutrition over an extended period and may also be affected by recurrent or chronic illness

Diarrheal diseases were common since the water was not treated. More men were said to prefer using bushes because they could not use the same toilet with women and children.

2.5.3 Morbidity and Causes of Morbidity

The most commonly reported diseases were diarrhoea, malaria, headaches and coughs that could be attributed to causing morbidity amongst children. **Figure 10** shows coughs, Malaria and Diarrheal and

coughs were common in children below five years of age. Diarrhoea could be related to the rainy season when water was flowing carrying waste with it and cases of dirty food and water. The use of contaminated water from the canals used for both domestic and agricultural use also exposed the children to water borne diseases such as typhoid, amoeba and dysentery as reported in the FGDs.

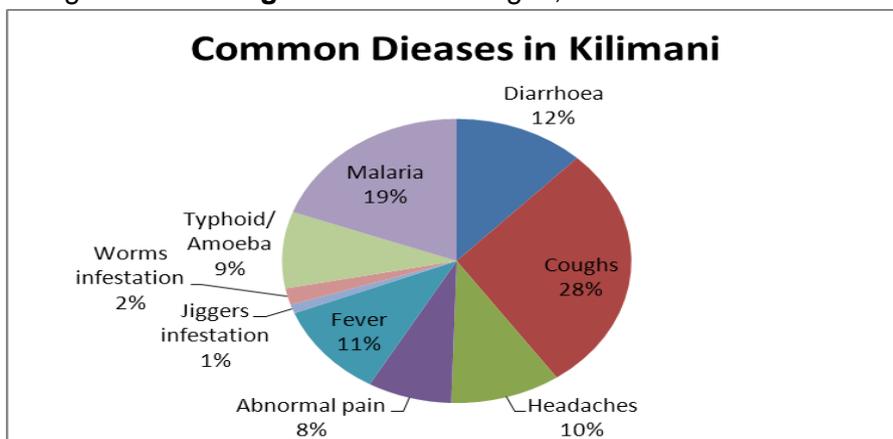


Figure 10: Common Diseases in Kilimani

Treatment for diarrhoea where Oral Rehydration Solution (ORS) fluid was the preferred option of treatment.

As in all irrigated areas, stagnant water could be attributed to the various water borne diseases such typhoid/amoeba, diarrhoea and malaria reported in the scheme.

The FGD noted other common diseases in the areas were HIV and AIDS. It was noted to be a 'big disease' amidst laughter from the participants of an FGD conducted in the irrigation scheme. Majority of the people (98.4%) knew about the disease. Majority respondents were also aware of causes of HIV though there were still some people who believed in untruths as far as HIV transmission was concerned as shown on **Figure 11**

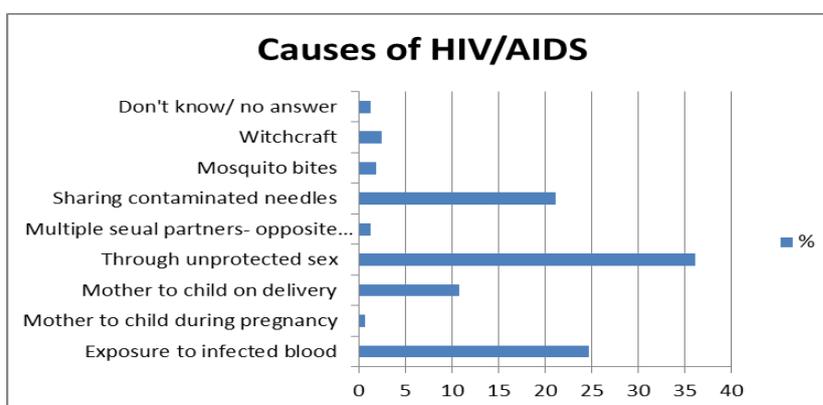


Figure 11: Common Causes of HIV

2.5.4 Health facilities

Members of the scheme obtained healthcare services from the nearby Isiolo General Hospital. There was also a dispensary that was run by the Catholic Diocese of Isiolo and another by the ACK church. Residents could buy drugs over the counter from the many chemists in Isiolo town.

We learnt that 32.1% of residents in Kilimani took 0-30 minutes to health centres, 14.1% of the residents took 30-60 minutes, 10.3% take 60-120 minutes and 43.6% took more than 120 minutes to access services at the health centres.

From the household data key services rendered at the hospital were disbursement of drugs (61.6%), prescription and consultation (9.6%), and immunization (16%). Only 12.8% of households confirmed to have received laboratory services. Most of the patients were attended to by a trained nurse as confirmed by 61% of respondents. Other practitioners who attended to patients included medical doctors (23.43%) and clinical officers (15.6 %).

2.6 Ownership of Resources

2.6.1 Land Ownership

Land belonged to the community, but each individual owned his/her plot in the scheme. The land has not been sub-divided and no title deeds have been issued yet. Each household had allocated a plot on which to grow crops of its choice. The members were households rather than individuals and so most of those listed as household representatives were men by virtue of their traditional position as heads of households. Women respondents indicated, however, that the plots were acquired through family inheritance. Most members had plots ranging from quarter of an acre to three acres.

2.6.2 Livestock Ownership

According to household data, male adults had majority control 71.4% of livestock. Women, therefore, had a minimum voice in terms of management of livestock. Women mainly owned livestock in the context of group business.

2.6.3 Issues arising from Ownership of Resources

There had been conflicts between crop farmers and herders when the latter invaded the farms with their livestock and destroyed crops. Another major conflict related to the domination of the piped water by members from blocks upstream and denial of access to members downstream. The women indicated that even when they accessed the water from burst pipes, they were doing so at great risk of physical violence by those who claimed to own the pipes. Vehicles passing through the block next to Isiolo River also destroyed pipes.

2.7 Capacity Building for County Staff and Community

2.7.1 Training of Staff in Relevant Anthropological Issues

Training of various cadres of MoALF staff was undertaken during the fieldwork phase. A total of 10 staff members were trained from the entire Isiolo County.

Based on the training and assessment undertaken; the following were identified as the training modules that would help to improve staff capacity. The modules were recommended to take one week of training. The modules are

- Gender mainstreaming
- Social Behaviour Communication
- Group dynamics-formation and formalisation by laws
- Crop irrigation agronomy
- Conflict management
- Pasture establishment and conservancy
- Soil and water conservation
- Capacity building of project management committee
- Range Management Principles
- Pasture and livestock marketing
- CMDDR-community management disaster and drought Response

2.7.2 Training Needs of Farmers in Anthropological Issues

There was need for farmers to be trained in the following

- Sensitisation on repugnant culture,
- How to co-exist ,
- Social relations and leadership,
- Interaction and social and cultural change and dynamics,
- Social transformation and about ethnocentrism so that they can live in peace with others.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusion

3.1.1 *Socio-cultural and social economic dynamics*

The residents of the area include Borana, Sakuye, Somali, Turkana, Samburu, Meru and Kikuyu. The marital practices differed per community, religion and tradition. For instance, Islamic adherents were allowed to marry up to a maximum of four wives, while Christians were by doctrine monogamists, if the marriage took place in mainstream churches. However, there were Christians who were married through customary law which allowed polygamy.

3.1.2 *Sources of livelihoods*

Majorly the people were farmers although some kept a few livestock, shoats and cattle. Horticultural crops were grown under irrigation.

3.1.3 *Economic organization*

At the beginning cotton was grown but its production declined and by the 1980s there was no more growing of cotton. Kales, vegetables, onions, maize, tomatoes, spinach and potatoes were the main crops grown in the scheme. During the time of the study, trucks could be seen ferrying tomatoes in crates from the irrigated farms. Both men and women were involved. The production was lucrative as perishable commodities were highly priced and market was sought for as far as Nairobi, Wamba, Meru, Wajir, and Mandera. Tomatoes in particular fetched good prices. Crop farming was rain-fed in most blocks.

3.1.4 *Political organization*

The whole scheme was under a board that had representatives from each of the blocks. Each block had its own elected committee and was represented by its chairman, secretary and treasurer in the board. The leadership of the board was elected among the representatives of the blocks. The management committee resolved disputes among the communities residing in the scheme.

3.1.5 *Sensitive issues and Conflict*

Land was a major cause of disputes and conflicts in the areas. Canal disputes-“tamaa”-some selfish people came and diverted water from other peoples’ *shambas* and directed it to their own. Although livestock were far away from farming area often they raided the farms and caused conflicts with farmers. Also, vehicles passing through the blocks next to Isiolo River destroyed crops.

3.1.6 *Morbidity and Culinary Habits of the People*

Latrine coverage was at 62% leaving the rest to resort to bushes and open defecation. Children under 5 had a challenge of malnutrition. Also, noted was that diarrheal diseases were commonly reported for the children below five years of age. Contaminated water from the canals used for both domestic and agricultural use exposed the children to water borne diseases such as typhoid, amoeba and dysentery. HIV and AIDS was a major health challenge

3.1.7 *Ownership of resources*

The plot owners were not certain about their land sizes and would have preferred to have their land registered and titled so that they could optimize on it. The owners of cattle and goats grazed their livestock on the crops causing the farmers distress and losses all the time.

Disputes over water resources were commonly reported. Some residents diverted water from their neighbours’ farms leading to quarrels and conflicts thus fair distribution of water needed to be addressed

3.2.8 Capacity building

Capacity building of farmers and county staff was necessary to enhance implementation capacity.

3.2 Recommendations

3.2.1 Socio-cultural and social economic dynamics

The communities were in sporadic conflicts resulting from misunderstanding for which a lasting solution should be found. Border disputes and those on land call for urgent solutions.

3.2.2 Sources of livelihoods

Farmers should be encouraged to use fertilizers. Though the government gives them seeds, their concern was that the supplies arrive when the rain season is about to end thus they do not take optimal advantage of the rains. Their plea was that if seeds be supplied in good time.

3.2.3 Economic organisation

To build resilience, water shortage can be overcome by piping water from the Lewa springs. There is need to promote green houses and technology to enhance water use efficiency. Promote and develop beadworks as income generating activity to supplement farm and livestock income for households.

DRSLP should promote keeping of small stocks, for example promoting and providing gala goats. Also, enhance bee keeping technology and honey harvesting and marketing capacity. Factors that constrain women from earning income were such as shortage of water for farming, inadequate capital for farming should be addressed.

There is need to legalize ownership by subdivision and provision of titles.

3.2.4 Political organisation

There is also the need to support and work with the Isiolo County Government to enhance land adjudication and issuance of titles

3.2.5 Sensitive issues and Conflict

Land disputes and administrative boundaries should be sorted out once and for all. Water supply should be increased so that all farms can have water regularly. Over time, there was shortage of water in the scheme caused by an increase in the population of the Meru upstream farmers who use Isiolo River for furrow irrigation.

3.2.6 Morbidity and Culinary Habits of the People

Malnutrition is a major concern to be addressed. DRSLP could assist where the MOH and other NGOs has intervened in this by creating public awareness and providing nutritional supplements. To overcome the waterborne diseases such as typhoid, amoeba and dysentery necessary intervention should be put in place.

3.2.7 Ownership of resources

Fast track the pursuing of title deeds. The members were eager to have the scheme registered with the Lands ministry although it had been registered in the past with the Ministry of Culture, Gender and Social Services. The management committee had already had very many visits and correspondence with the lands office.

3.2.8 Capacity Building

3.2.8.1 Training of Staff in Relevant Anthropological Issues

The following were identified as the training modules that would help to improve staff capacity. The modules were recommended to take one week of training. The modules are:

- Gender mainstreaming
- Social Behaviour Communication
- Group dynamics-formation and formalisation by laws
- Crop irrigation agronomy
- Conflict management
- Pasture establishment and conservancy
- Soil and water conservation
- Capacity building of project management committee
- Range Management Principles
- Pasture and livestock marketing
- CMDDDR-community management disaster and drought Response

3.2.8.2 Training Needs of Farmers in Anthropological Issues

There was need for farmers to be trained in the following:

- Sensitisation on repugnant culture,
- How to co-exist ,
- Social relations and leadership,
- Interaction and social and cultural change and dynamics,
- Social transformation and about ethnocentrism so that they can live in peace with others.

4.0 REFERENCES

1. Anderson, D.M. & Broch-Due, V. (eds). 1999. *The poor are not us: poverty and pastoralism in Eastern Africa*. Oxford, UK, James Currey; Nairobi, EAEP; Athens, Ohio, USA, Ohio University Press.
2. Baxter, Paul T.W. and Uri Almagor (eds.): *Age, Generation and Time. Some Features of East African Age Organizations*.
3. Baxter, P.T.W. & Hogg, R. (eds) (1990) *Property, poverty and people: changing rights in property and the problems of pastoral development*. Manchester, UK, Department of Social Anthropology and ICD, University of Manchester.
4. Dahl, G. & Hjort, A. (1976) *Having herds: pastoral herd growth and household economy*. Stockholm Studies in Social Anthropology No. 2. Stockholm, University of Stockholm.
5. Fratkin Elliot (2014) 'The Samburu Laibon's Sorcery and the death of Theodore Powys in Colonial Kenya', *Journal of Eastern Africa Studies*.
6. Galaty JG and P. Bonte (1999). *Herders, Warriors and Traders*, Boulder Colorado: Westview Press.
7. Krätli, S. & Jeremy, S. (2001). *Understanding and Managing Pastoral Conflict in Kenya: How contemporary understandings and knowledge of pastoral conflict can guide practical work*. Environment Team, IDS Sussex, UK.
8. Markakis J. (ed.) *Conflict and the Decline in Pastoralism in the Horn of Africa*, Macmillan - London.
9. Mohamed G. Shibia (2010), "Determinants of Attitudes and Perceptions on Resource Use and Management of Marsabit National Reserve, Kenya" *Journal of Human Ecology*. 30, 1, 55-62.
10. Mkutu, K. (2001). *Pastoralism and Conflict in the Horn of Africa* APFO/Safer world/Bradford University.
11. Mkutu, K. (2008). *Guns and Governance in the Rift Valley: Pastoralist Conflict and Small Arms*. Oxford: James Currey...
12. Whittaker, H. (2012). *The socioeconomic dynamics of the Shifta conflict in Kenya*. Nairobi: Cambridge University Press.
13. Witsenburg, K., & Roba, A. W. (2009). *Of Rain and Raids: Violent Livestock Raiding in Northern Kenya*. *Civil Wars* 11(4): 514 -538.
14. Kenya Demographic and Health Survey, 2014

5.0 ANNEXES

Annex 1: List of Respondents

FGD with Scheme Members

No.	Name	Gender
1	Halima Guyo Ibrahim	Female
2	Sadia Gara Baraki	Female
3	Evangeline Mugambi	Female
4	Akidori Lokorudi	Female
5	Maliti Bora	Female
6	Selina Asipetal	Female
7	Abdia Abdi	Female
8	Eugegeline Mthuranira	Female
9	Rosemary Epurukel	Female
10	Abdirashid Dida	Male
11	Lokho Dulacha	Male
12	Abdulkadir Biru	Male
13	Julius Kinyanjui	Male
14	Josphat Kiurire	Male
15	Patrick Memara	Male
16	Hussein Boru	Male

Key Informant Interviews

	Name	Designation
1	Ndege Nyaga	Sub-County Youth and Gender Officer, Isiolo North
2	Mohamed Diba	Livestock Production Officer & Principal Mobile Pastoral Training Unit
3	Mary Wanjiku	County Resilience Officer, National Drought Management Authority, Isiolo
4	Stephen Machan	Coordinator ASDSP
5	Francis Kiruja	Programmes Supervisor, FH-Kenya, Isiolo
6	Lilian Mwikali	Nutrition Officer, Action Against Hunger, Garba Tulla
7	Dr. J.S. Muriira	Veterinary Officer, Isiolo Central Sub-County
8	Daniel N. Muggi	County Animal Production Officer in-charge of Isiolo Holding Ground
9	Francis Muruthi Warutere	Ward Agricultural extension Officer, OI Donyiro
10	Banticha Jaldesa	Sub County Agriculture Officer, Garba Tulla
11	Halkano H. Hache	Sub-county Livestock Production Officer, Garba Tulla
12	Mohamed A. Kanchoro	Senior Livestock Health Officer, Garba Tulla
13	Daud Gonjobe Jarso	Livestock Production Clerk, Garba Tulla
14	Said Abdi Ali	Support Staff, Garba Tulla
15	Mr. Adan Ali (Others in the meeting were: Yusuf Ibrahim; Adan Hugman; Ahmed Adow; Amina Dabaso (Female); Jarso Salesa; and Abdullahi Yusuf.	Chairman, Rapsu Commercial Pasture Plot
16	Salad Dida Wario	Livestock Production Officer, Kinna
17	Muthomi Kaburu	Land Administration Officer
18	Jack Obuo	Sub County Commissioner, Garbatulla
19	Ann Nyangweta	Livestock

Annex 2: List of Trained Staff

No.	Name	Designation	Gender
1	Francis Muruthi	D/AEO - Oldonyiro	M
2	Everlyn W. Gathogo	D/AEO – Central	F
3	Florence Njege	SCADO – Isiolo	F
4	Josephat Anjiri	SCIO - Garbatulla	M
5	Mohamed A. Kauchow	SCIO - Garbatulla	M
6	Halkawo H. Hache	SCLPO - Garbatulla	M
7	Bartiche A. Jadesa	SCAO - Garbatulla	M
8	Mohammed Noor Ahmed	ALPO - Garbatulla	M
9	David M. Mwangi	SALPO - Central	M
10	Salah G. Abdi	SLHA - Merti	M